

# GraybaR

ELECTRIC COMPANY

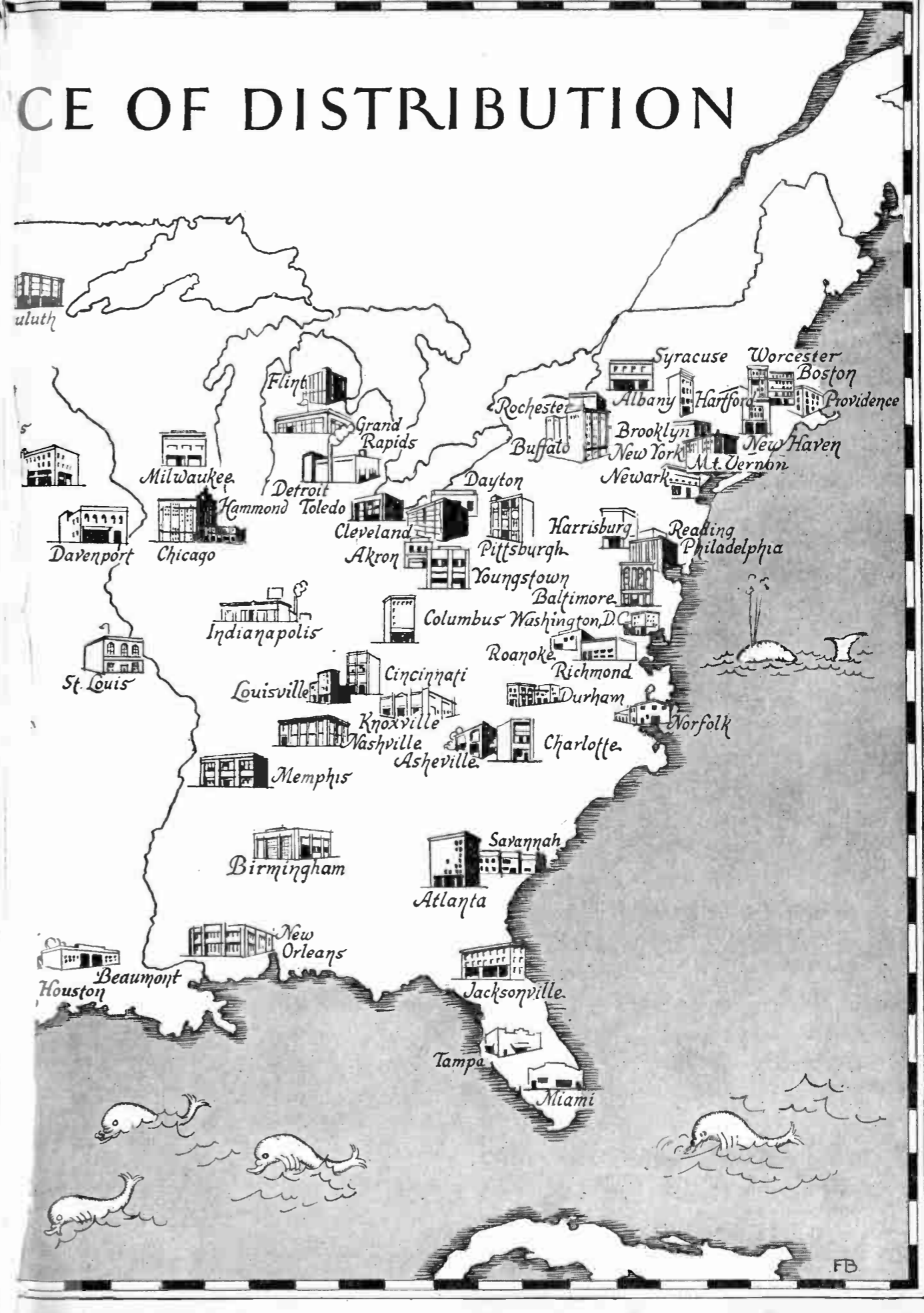
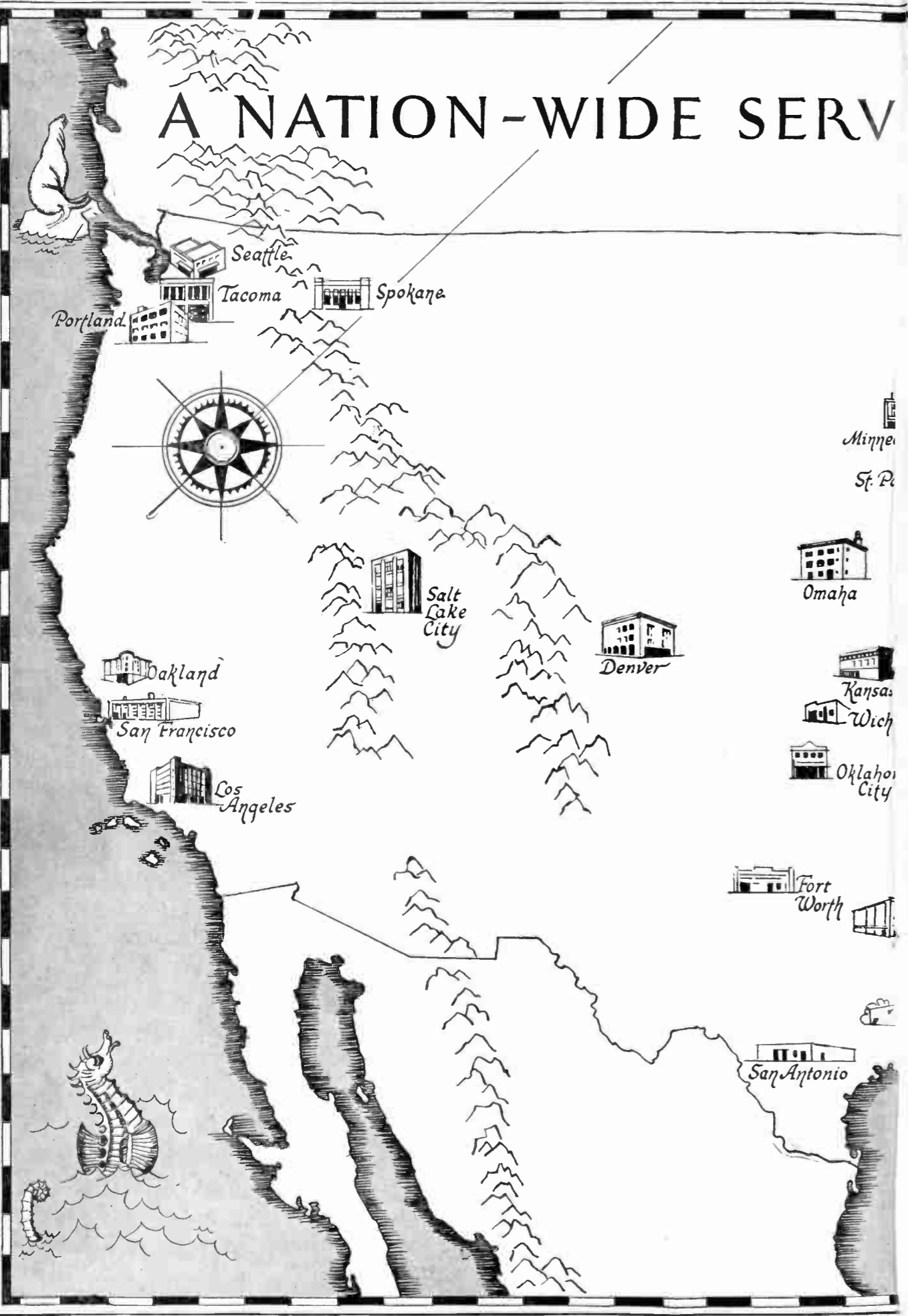
Catalog  
No 101

THE GRAYBAR TAG



SYMBOL OF DISTRIBUTION

# A NATION-WIDE SERVICE OF DISTRIBUTION





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# GraybaR

ELECTRIC COMPANY



CATALOG

No. 101

# Graybar's Creed

## AS A DISTRIBUTOR

*The Graybar Electric Company Believes:*

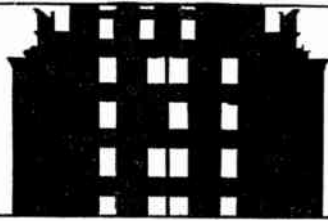
1. That it performs an economic service for the wholesale buyer of electrical goods by maintaining adequate, well-selected, and convenient stocks of quality materials, thus relieving him of the burdens of handling, storage, investment, and obsolescence.
2. That likewise it performs an economic service for the maker of electrical goods by providing immediate nation-wide distribution without duplication of warehousing, selling, and credit operations; and,
3. That in performing these services, it lowers the cost of distribution to the benefit of the entire Industry; and,
4. That, consequently, it has a recognized place in the economic structure of the Industry and that it need not and should not engage in any activity detrimental to the Industry;
5. That finally, since its own success will follow the success of the Industry, it should endeavor in its publicity to bring about a greater public appreciation of Electricity; and that it should pursue and encourage sound merchandising and credit practices and in every way possible contribute to the advancement of the Electrical Industry.

GRAYBAR ELECTRIC COMPANY—DISTRIBUTORS OF 60,000  
ELECTRICAL ITEMS THROUGH 73 DISTRIBUTING HOUSES





FROM TOP



TO



BOTTOM



**M**ENTION anything electrical that goes into any building anywhere, and you've named a Graybar item . . . More than that. You've named an item that is available to you on quick demand through a nationwide distributing service which conserves not only

**Graybar**  
ELECTRIC COMPANY



THE GRAYBAR TAG—SYMBOL OF DISTRIBUTION

your time but your need for excessive reserve stocks . . . You've named one of Graybar's 60,000 items . . . Graybar Electric Co., Executive Offices: Graybar Building, Lexington Avenue and 43rd Street, New York, N. Y. Offices in 73 Principal Cities.





# From Gray

to



This photograph shows the entire factory and sales force of Gray and Barton in front of the original factory.

## *The Story of 65 Years*

**W**AY back in 1869 two energetic and ambitious young men started a modest workshop to make electrical bells, buzzers and pushbuttons.

These men were Elisha Gray and Enos M. Barton and they called their little business Gray and Barton. This business, started before the telephone or electric light had taken their place in the scheme of things, later grew to be the company now known as Graybar.

Elisha Gray and Enos Barton were men of vision but even in their most ambitious moments, they could not have visualized the tremendous growth of the industry in which they were pioneers or of the company they founded. Gray and Barton in 1872 became the Western

Electric Manufacturing Company and on January 1, 1926, Graybar Electric Company. It is highly appropriate that the names of these two electrical pioneers should be perpetuated in the name of the largest distributor of things electrical.

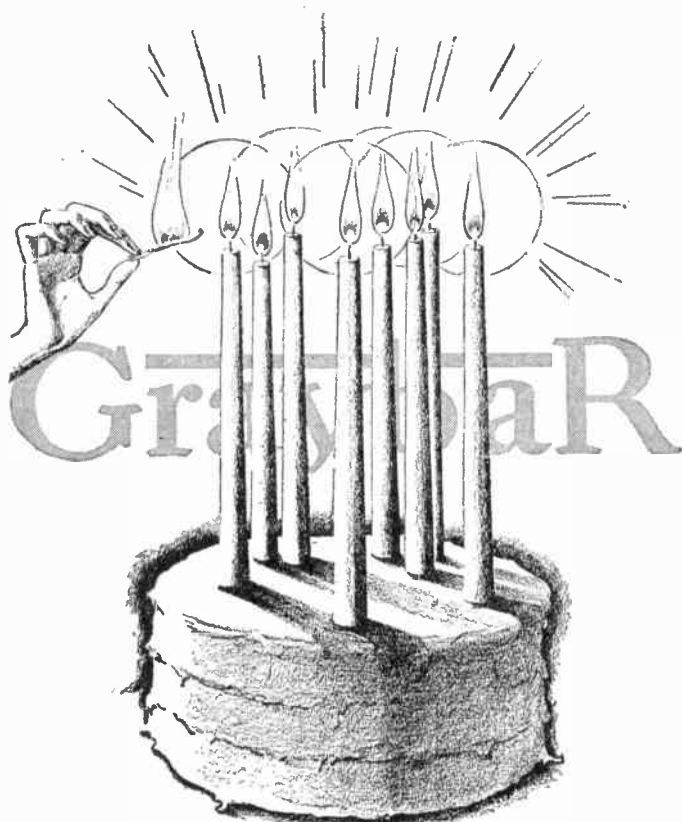
Matching the growth of the electrical industry and keeping pace with its development, Graybar Electric Company has had an active part in this industry during all these sixty-five years. Today, Graybar stands ready to intelligently serve those who need things electrical.

Graybar offers electrical buyers a wide selection of quality electrical items from warehouse stocks in 73 cities, strategically located in relation to trading centers from coast to

# and Barton Graybar

coast. Graybar offers an assurance of satisfaction to all its customers, backed by a sixty-five year reputation for fair dealing. Graybar offers the experience of all these years in help-

ing you to select the proper electrical equipment for your needs and in getting this equipment where you want it, when you want and as you want it.



**8 YEARS OLD**  
Graybar  
**65 YEARS IN BUSINESS**

In 1869, Gray and Barton; in 1872, Western Electric Manufacturing Company; in 1881, Western Electric Company; in 1926, Graybar Electric Company.

## PRICES

PRICES found in this catalogue are revised to agree with the latest lists at the time of issue. It is understood that they are subject to change without notice and are, therefore, not offered by us as a quotation. It is contemplated that all prices are for shipment from our warehouse unless otherwise specified, except such goods as are shipped regularly direct from factories, in which cases prices are for factory delivery unless otherwise specifically agreed upon.

## ORDERS

WHEN possible, we have placed opposite each article a list number. When ordering material, kindly order by the list number and give a description of the article required.

You are requested to specify the routing over which you prefer shipments to be made. In the absence of specific instructions, we shall use our best judgment in selecting the route, but we are not responsible for extra drayage expenses at destination.

## TERMS

OUR terms are 30 days net from date of invoice.

Payments may be made by check, bank draft, postal or express money order, drawn to the order of or endorsed to the order of the Graybar Electric Company, Inc.

Payments in currency through the mails even if registered are not recommended and are at sender's risk. We are not responsible for loss or miscarriage of the mails.

Receipts are not issued for remittances

unless requested. Our endorsement on remittance is acknowledgment of the receipt of the funds.

We solicit new accounts on a credit basis, and in order to give prompt service, request that where you are not rated by the Commercial Agencies, references or other information of a credit character be forwarded with the order. These will be immediately acted upon, and the results held in strict confidence for our sole use and, when reasonably satisfactory, shipment will follow with all possible dispatch.

To avoid the delay incidental to communicating with references, etc., it would be mutually convenient, when immediate shipment is desired, to instruct us to ship C. O. D. by express, or parcel post (insured if so instructed) or by freight subject to sight draft through a local bank against bill of lading.

We shall advise the terms on future orders promptly after communications from references are received.

## RETURNED GOODS

TO save transportation charges, and to facilitate the handling of goods upon receipt, you are requested not to return goods without having obtained shipping instructions from us.

## SHIPMENTS

AS experienced packers are employed, and as reasonable care is used in packing, we cannot be held responsible for breakage in packages which are delivered in "good order" by the carrier.

Shipments of glassware are made at your risk.

Goods ordered to be shipped by parcel post will be sent only at the purchaser's risk of loss or damage.

## Wood Pole Specifications

Values for the ultimate fibre stresses of wood poles were approved by the American Standards Association November, 1930. These values are as follows:

Southern Yellow Pine Creosoted	7,400 lbs. per sq. in.
Western Red Cedar	5,600 lbs. per sq. in.
Northern White Cedar	3,600 lbs. per sq. in.
Chestnut	6,000 lbs. per sq. in.

This Association adopted the principles given below as a working plan for the development of the specification circumference table in which table Classes 1 to 7 are defined primarily by their circumferences at 6 ft. from the butt and designed to meet the following breaking loads under the conditions imposed in Principle 4. Classes 8, 9 and 10, having no butt requirement, were defined by minimum permitted top circumferences only.

Class	1	2	3	4	5	6	7
Lb. Sq. In.	4500	3700	3000	2400	1900	1500	1200

These principles are:

- 1.—All tables shall be based on standard fibre strengths, for the respective species.
- 2.—The tables shall specify dimensions in terms of circumference in inches at six feet from the butt, except for classes of "No Butt Requirement," and circumference in inches at the top for poles of the respective lengths and classes.
- 3.—All poles of the same length and class shall have when new approximately equal strength, or in more precise terms, equal moments of resistance at the ground line.
- 4.—All poles of different lengths within the same class shall be of suitable size to withstand approximately the same breaking load, assuming that the load is applied two feet from the top and that the break would occur at the ground line.
- 5.—The smallest class for which butt measurements shall be specified shall have a breaking load under the conditions stated in Principle 4 of approximately 1200 pounds.

6.—The largest class for which butt measurements shall be specified shall have a breaking load under the conditions stated in Principle 4 of approximately 4500 pounds.

7.—The classes from the lowest to the highest shall be arranged in geometric progression, the increments between classes, measured in terms of breaking load, to be approximately 25 per cent.

ASA Specification dimension tables will be found in this catalogue under each species of timber we discuss.

The breaking loads of the various classes previously mentioned are translated into terms of moments of resistance at the ground line and the required ground line circumferences were calculated by using beam formula  $M_r = .000264 \cdot f \cdot c^3$ .

$M_r$  is moment of resistance  
 $f$  is the standard fibre stress  
 $c$  is circumference in inches

In all classes and lengths the 6-foot circumference is usually larger than the minimums given in the table. Stating this in another way, the average 6-foot circumference for all lengths in any class is greater than one-half the difference between the class and the minimum of the next higher class. In general, too, the average pole of a given class will be considerably stronger than the rating for the class.

The basic principles upon which ASA Specification tables have been worked out conform to and are consistent with the accepted engineering practice of the larger transmission and communication utilities.

While these simplifications and standardizations on a national scale are of great interest to our customers, we still retain a belief that they cannot replace our individual specialization of method, developed over twenty-five and more years in this particular field.

### A.S.A. Circumference Tables

#### Western Red Cedar Poles

Minimum Circumference at 6 Feet from Butt, Inches

Length of Pole Ft.	Dist. from Butt Ft.	CLASS									
		1	2	3	4	5	6	7	8	9	10
		MINIMUM TOP CIRCUMFERENCE, INCHES				CIRCUMFERENCE, INCHES					
		27	25	23	21	19	17	15	18	15	12
16	3 1/2	...	...	...	...	23.0	21.5	19.5	*	*	*
18	3 1/2	...	...	28.5	26.5	24.5	22.5	21.0	*	*	*
20	4	34.5	32.0	30.0	28.0	25.5	23.5	22.0	*	*	*
22	4	36.0	33.5	31.5	29.0	27.0	25.0	23.0	*	*	*
25	5	38.0	35.5	33.0	30.5	28.5	26.0	24.5	*	*	*
30	5 1/2	41.0	38.5	35.5	33.0	30.5	28.5	26.5	*	*	*
35	6	43.5	41.0	38.0	35.5	32.5	30.5	28.0	*	*	*
40	6	46.0	43.5	40.5	37.5	34.5	32.0	...	...	...	...
45	6 1/2	48.5	45.5	42.5	39.5	36.5	...	...	...	...	...
50	7	50.5	47.5	44.5	41.0	38.0	...	...	...	...	...
55	7 1/2	52.5	49.5	46.0	42.5	39.5	...	...	...	...	...
60	8	54.5	51.0	47.5	44.0	...	...	...	...	...	...
65	8 1/2	56.0	52.5	49.0	45.5	...	...	...	...	...	...
70	9	57.5	54.0	50.5	47.0	...	...	...	...	...	...
75	9 1/2	59.5	55.5	52.0	48.5	...	...	...	...	...	...
80	10	61.0	57.0	53.5	49.5	...	...	...	...	...	...
85	10 1/2	62.5	58.5	54.5	...	...	...	...	...	...	...
90	11	63.5	60.0	56.0	...	...	...	...	...	...	...

#### Northern White Cedar Poles

16	3 1/2	...	...	...	26.0	24.0	22.0	*	*	*	
18	3 1/2	...	...	32.5	30.0	28.0	25.5	23.5	*	*	*
20	4	39.5	37.0	34.0	31.5	29.0	27.0	25.0	*	*	*
22	4	41.0	38.5	36.0	33.0	30.5	28.0	26.0	*	*	*
25	5	43.5	41.0	38.0	35.5	32.5	30.0	28.0	*	*	*
30	5 1/2	47.5	44.5	41.5	38.5	35.5	33.0	30.5	*	*	*
35	6	50.5	47.5	44.0	41.0	38.0	35.0	32.5	*	*	*
40	6	53.5	50.0	46.5	43.5	40.0	37.0	...	...	...	...
45	6 1/2	56.0	52.5	49.0	45.5	42.0	...	...	...	...	...
50	7	58.5	55.0	51.5	47.5	44.0	...	...	...	...	...
55	7 1/2	61.0	57.5	53.5	49.5	46.0	...	...	...	...	...
60	8	63.5	59.5	55.5	51.5	...	...	...	...	...	...

\*No butt requirement.

#### Creosoted Southern Yellow Pine Poles

Minimum Circumference at 6 Feet from Butt, Inches

Length of Pole Ft.	Dist. from Butt Ft.	CLASS											
		1	2	3	4	5	6	7	8	9	10		
		MINIMUM TOP CIRCUMFERENCE, INCHES				CIRCUMFERENCE, INCHES							
		27	25	23	21	19	17	15	18	15	12		
16	3 1/2	...	...	...	...	21.5	19.5	18.0	*	*	*		
18	3 1/2	...	...	26.5	24.5	22.5	21.0	19.0	*	*	*		
20	4	31.5	29.5	27.5	25.5	23.5	22.0	20.0	*	*	*		
22	4	33.0	31.0	29.0	26.5	24.5	23.0	21.0	*	*	*		
25	5	34.5	32.5	30.0	28.0	26.0	24.0	22.0	*	*	*		
30	5 1/2	37.5	35.0	32.5	30.0	28.0	26.0	24.0	*	*	*		
35	6	40.0	37.5	35.0	32.0	30.0	27.5	25.5	*	*	*		
40	6	42.0	39.5	37.0	34.0	31.5	29.0	27.0	...	...	...		
45	6 1/2	44.0	41.5	38.5	36.0	33.0	30.5	28.5	...	...	...		
50	7	46.0	43.0	40.0	37.5	34.5	32.0	29.5	...	...	...		
55	7 1/2	47.5	44.5	41.5	39.0	36.0	33.5	...	...	...	...		
60	8	49.5	46.0	43.0	40.0	37.0	34.5	...	...	...	...		
65	8 1/2	51.0	47.5	44.5	41.5	38.5	...	...	...	...	...		
70	9	52.5	49.0	46.0	42.5	39.5	...	...	...	...	...		
75	9 1/2	54.0	50.5	47.0	44.0	...	...	...	...	...	...		
80	10	55.0	51.5	48.5	45.0	...	...	...	...	...	...		
85	10 1/2	56.5	53.0	49.5	...	...	...	...	...	...	...		
90	11	57.5	54.0	50.5	...	...	...	...	...	...	...		

#### Chestnut Poles

16	3 1/2	...	...	...	22.5	21.0	19.5	*	*	*	
18	3 1/2	...	...	28.0	26.0	24.0	22.0	20.5	*	*	*
20	4	33.5	31.5	29.5	27.0	25.0	23.0	21.5	*	*	*
22	4	35.0	33.0	30.5	28.5	26.5	24.5	22.5	*	*	*
25	5	37.0	34.5	32.5	30.0	28.0	25.5	24.0	*	*	*
30	5 1/2	40.0	37.5	35.0	32.5	30.0	28.0	26.0	*	*	*
35	6	42.5	40.0	37.5	34.5	32.0	30.0	27.5	*	*	*
40	6	45.0	42.5	39.5	36.5	34.0	31.5	29.5	...	...	...
45	6 1/2	47.5	44.5	41.5	38.5	36.0	33.0	31.0	...	...	...
50	7	49.5	46.5	43.5	40.0	37.5	34.5	32.0	...	...	...
55	7 1/2	51.5	48.5	45.0	42.0	39.0	36.0	...	...	...	...
60	8	53.5	50.0	46.5	43.5	...	...	...	...	...	...
65	8 1/2	55.0	51.5	48.0	45.0	...	...	...	...	...	...
70	9	56.5	53.0	...	...	...	...	...	...	...	...

\*No butt requirement.



## Western Red and Northern White Cedar Poles

The National Pole & Treating Company supplier of Graybar Northern and Western Cedar Poles for more than 25 years has a well earned reputation for furnishing a quality product.

It maintains at the treating plants both a graduate chemist and a graduate timber pathologist who are charged with treating operations, oil analyses, yard sanitation and research, all important essentials in the manufacture of quality poles.

### Pole Quality

Poles sold by the Graybar Electric Company conform to nationally accepted standards. Inspections are thorough.

Cedar presents the following qualities:

- |                  |                  |
|------------------|------------------|
| 1.—Strength.     | 6.—Appearance.   |
| 2.—Durability.   | 7.—Cleanliness.  |
| 3.—Stability.    | 8.—Availability. |
| 4.—Light weight. | 9.—Safety.       |
| 5.—Adaptability. |                  |

### Processed Cedar Poles

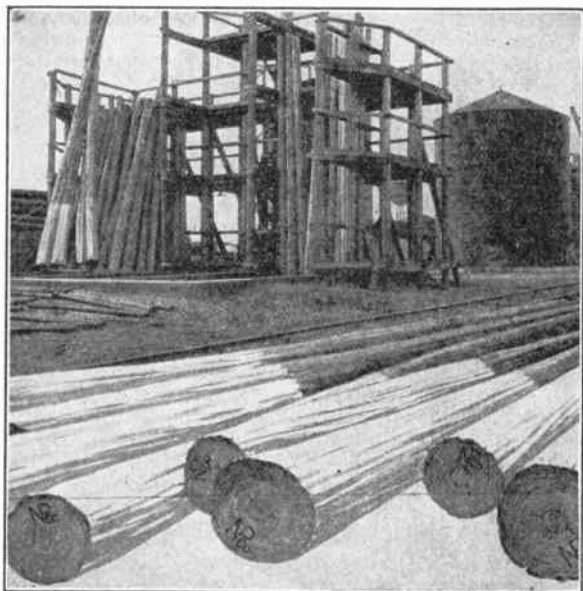
The National Pole & Treating Company maintains at its concentrating yards trained workmen who, for a small extra charge, roof, gaen and stain poles to specifications.

### Cedar Pole Service

At Minneapolis, and Everett, Washington, cedar poles are concentrated, handled by steam equipment, etc. The stock runs 100,000 poles and more.

Emergency service is always available.

### Preservative Treatment for Cedar Poles



One of the Butt Treating Vats Showing View of 130,000 Gallon Reserve Creosote Tank at Minneapolis Plant

### Description

Years of scientific observation by engineers of the largest pole users in the United States has demonstrated that the life of cedar poles can be increased by proper open tank butt-treatment. If a satisfactory permeation is obtained in the ground line area, the life of a pole, butt-treated in creosote, will depend upon the mechanical wear of the pole above.

Unless there is a thorough and even permeation, decay will occur in small pockets and in checks through the treated wood.

Proper treatment more than doubles cedar pole value, as the original factor of safety is maintained far beyond the replacement date of the untreated pole.

### Incised Treatment

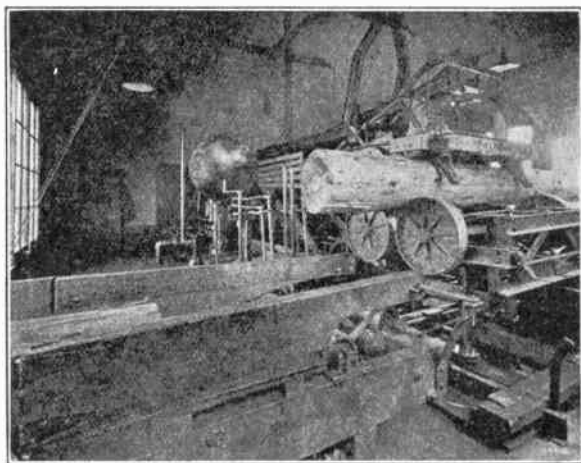
#### Permeth Method Worth More Money

The incised treatment of cedar poles is the logical development of the open-tank process.

The preservative value of creosote has been recognized for many years and, as a treatment for cedar poles, was first applied with a brush. However, it was found that the painting did not get the creosote into the smaller and deeper season checks and cracks, so the poles were dipped into the creosote. This treatment was named AA and was specified as a continuous immersion for fifteen minutes in creosote heated to not less than 212° F., and not more than 230° F. We are still prepared to furnish AA treatment, at some initial price saving if that is in special cases what our customers wish to buy.

The penetration secured by the AA treatment was so shallow and unreliable that the time of treatment was lengthened to a period of from four to six hours in creosote ranging from 212° F. to 230° F. and an immediately succeeding bath in cold creosote for two hours at not more than 110° F. This treatment was called B. (We will on special request quote and furnish B treatment.) By this process a deeper penetration was secured and better results in service were obtained, but it was found that the absorption was irregular. In fact, in seasoned timber of apparently the same condition, some poles absorbed the creosote readily and showed a good penetration while others gave evidence of one surface treatment. Likewise, in the same pole there might be a full sapwood penetration at one point, whereas, in an area but a few inches away there might be little penetration. This uneven absorption naturally led to very uncertain results in service because, after the poles were set in line and were subjected to the various conditions of the seasons with the resultant checking and parting of the fibres, the cracks descending from the upper untreated portion of the pole entered the treated area and where they ran through the shallow treatment they opened up and exposed untreated timber. This permitted the fungi to come in direct contact with the untreated fibres with the resultant infection and rotting of the wood within the pole behind the layer of treated timber. This action proved that any treatment was only as effective as the protection given by the shallowest penetration at any point in the ground line area.

This conclusion necessitated the development of a uniformly deep permeation. Much research and experimental work was done to develop a treating process which would give this result.



Permeth Machine with Pole in Position Ready for Puncturing. The Oil Lift that Raises the Lower Carriage into the Head of the Machine and Acts as a Cushion while the Machine is in Operation

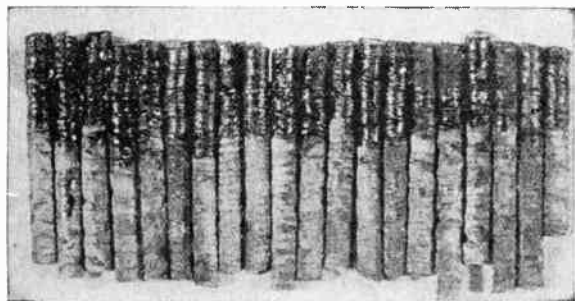
A microscopic study of cedar shows the wood to be very porous. It is made up of long, hollow longitudinal fibres which are spindle shaped cells, arranged in rings from the pith to the bark. These rings of cells form the annular rings. These fibres, besides furnishing support for the tree, provide means for the movement of the sap. Other than the longitudinal fibres are the medullary rays or cells which extend radially from the pith into the bark. There are no passages in the timber other than the cells within these longitudinal fibres and medullary rays and the sap moves from cell to cell through minute pits or pores which connect adjoining cells at their points of contact.

## Western Red and Northern White Cedar Poles

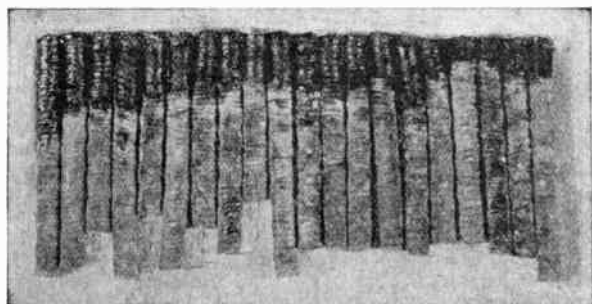
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Although cedar fibre will absorb from 12 per cent to 15 per cent of its oven dry weight in water it will not absorb creosote. Examination under the microscope, of treated cedar discloses creosote within the cells but shows no absorption in the fibre. Consequently, in order to obtain penetration in cedar the movement of creosote must be by means of the openings in the cells and not through the cell fibre.

If the conditions within the timber remained unchanged after being cut, not so much difficulty would be experienced in treating it, but such is not the case. The sap is a watery solution of sugars, starches, resins, etc., and, while the tree is alive, it is constantly in solution and circulating, but, when the timber is cut, peeled and begins to season, some of the water from the sap evaporated and concentrates the sugars and resins which seal up most, if not all, of the minute pits or pores between the adjoining cells.



Average Penetration of Punctured Section,  $\frac{2}{32}$ -Inch, by our Permex Method



Average Penetration,  $\frac{1}{32}$ -Inch, Unscientific Hand Punctured Treatment

### Incised Method of Treatment for Cedar Poles Permex for Permanency

In our Permex treatment no external pressure is applied. The movement of creosote in the cells is entirely dependent on the action of capillary attraction. This is created by first applying heated creosote ranging from 212° to 223° F. for a continuous period of eight hours, thereby vaporizing the moisture in the sapwood, causing it to expand  $\frac{1}{273}$  times its volume for every degree of heat through which it passes and partially expelling it from the timber, and then applying an immediately succeeding bath in cold creosote from 110° to 150° F. The cold treatment contracts the vapors, forms a partial vacuum within the cells and draws the surrounding creosote into the timber. This action creates an appreciable longitudinal creep or movement but does not produce much penetration radially or tangentially.

The loss in strength to a pole through incising has been determined to be in direct proportion to the percentage of the circumference cut away in a horizontal plane and to the depth of the incision.

A scientific machine for incising, therefore, must meet the existing structural conditions in cedar. Ours was designed to cut radial passages through the fibre just to the depth of the required penetration. The incisions cut the fibres and open the ends of the longitudinal cells, providing passage for the movement of creosote so that with the least amount of timber cut in a horizontal plane and with perforations only to the depth of the required penetration, a complete saturation of the fibre is obtained between all incisions.

There are many other incising machines in operation, but they have been designed with no consideration of the structure of cedar with the result that their perforations are made deeper than necessary and may be spaced so closely that the timber is weakened to a great extent, or the sapwood may be so mutilated that it is made no more than a loosely adhering shell. Even though such perforating may produce the required penetration, it is detrimental to the pole, inasmuch as the strength of the pole may be reduced and the sapwood may become a weakened shell which will not withstand the abuses of service.

Some apply incising by means of a studded belt or plate. These belts or plates are about eighteen inches long by six inches wide and contain from seventy-five to one hundred and twenty-five teeth. A mallet is used to pound the teeth into the timber. When the plate is removed, the teeth, which are binding the timber between them, tear the fibres and in some cases loosen the outer sapwood from the heartwood. It is practically impossible to obtain uniform depth of perforation and impregnation by using belts or plates because the body holding the teeth is not flexible and cannot follow the crevices and irregularities of the timber. On the other hand, the teeth of our machine are operated by automatic adjusting cams and inserted into the timber in such a way as to insure a uniform depth of perforation regardless of the uneven surface over which it has to work.

### Incised Method Prevents Season Checking at Ground Line

It was thought at first that if the same penetration could be obtained in a cedar pole without perforating as with perforating, that better service results could be obtained. Experience has proven the contrary to be true. If creosote were not volatile, and if its preservative value were of indefinite existence, and if the layer or treated timber around the outside of the pole were never broken, then a creosoted area on the surface, regardless of depth of penetration, would be sufficient to preserve the pole indefinitely. It has been found, however, in green and even in seasoned poles that season checking occurs after the poles are set in line. But in perforated poles, these checks descending from the upper untreated section run out when they reach the treated perforated area. Thus the perforating protects the poles, not only in securing a deeper, more uniform impregnation, but also in providing means of relieving the stresses which cause checking in treated ground line section thereby insuring constant and complete protection against infection of the timber.

### Incising Machines at Minnesota Transfer, Minn. and Everett, Washington

Two of these proper incising Permex machines are at the Minneapolis Transfer yard where the National Pole & Treating Company maintains an adequate stock of poles. A third machine is operated by the National Pole & Treating Company at Everett, Washington. These machines handle this work for us.

It is felt that studies by means of an increment borer could well be made by pole users. One large Central Station, whose engineers make such studies independent of the operating department, report informally that our Permex treatment was 30 per cent more efficient than some others.



**Specification for Preservative Treatment Cedar Poles**

**Incised Process—A Guaranteed Penetration**

**A.—Seasoning**

Poles shall be satisfactorily air seasoned under proper sanitary conditions.

**B.—Shaving**

All inner bark shall be removed from the groundline area of the pole; i.e., that portion of the pole surface terminating one foot above and two feet below the standard groundline indicated in Paragraph F. The amount of wood shaved off in the removal of the inner bark shall be limited to a minimum.

**C.—Incising**

All poles shall be incised throughout that portion of the pole surface terminating one foot above and two feet below the standard groundline indicated in Paragraph F. The depth of incisions shall be 1/2 inch. A variation of 1/2 of an inch in the depth of the incisions shall be allowed. The sapwood shall not be splintered nor loosened by the incising operation. The pattern and spacing of the incisions shall be such as to insure a uniform depth of penetration of the preservative throughout the incised area.

**D.—Preservative**

The preservative used shall be a distillate of coal-tar or coke-oven tar. It shall comply with the following requirements:

- 1.—It shall not contain more than 3% water.
- 2.—It shall not contain more than .5% of matter insoluble in benzol.
- 3.—The specific gravity of the oil at 38 degrees C. compared with water at 15.5 degrees C. shall not be less than 1.03.
- 4.—The distillate, based on water free oil, shall be within the following limits:  
Up to 210 degrees C.—Not more than 5%.  
Up to 235 degrees C.—Not more than 25%.
- 5.—The residue above 355 degrees C., if it exceeds 5%, shall have a float test of not more than fifty seconds at 70 degrees C.
- 6.—The oil shall yield not more than 2% of coke residue.
- 7.—The foregoing test shall be made in accordance with the standard methods of the American Wood Preservers' Association.

**Treating Operations**

**E.—Plant Equipment**

Treating plants shall be equipped with thermometers to indicate and record accurately the temperature of the preservative during all stages of treatment. The apparatus and chemicals for making necessary analyses and tests shall be available for use by the purchaser or purchaser's representative. All equipment shall be maintained in good working order.

**F.—Length of Treated Sections**

Poles shall be immersed in the preservative so as to completely cover the groundline area. The depth of immersion shall not exceed by more than two feet the height of treatment given in the table below. The following table shows the relationship between the height of groundline and the height of treatment from the butt end of the pole:

Length Pole Ft.	Height Groundline Ft.	Height Treatment Ft.	Length Pole Ft.	Height Groundline Ft.	Height Treatment Ft.
16	3 1/2	4 1/2	45	6 1/2	7 1/2
18	3 1/2	4 1/2	50	7	8
20	4	5	55	7 1/2	8 1/2
22	4	5	60	8	9
25	5	6	65	8 1/2	9 1/2
30	5 1/2	6 1/2	70	9	10
35	6	7	75	9 1/2	10 1/2
40	6	7	80	10	11

**G.—Manner of Treatment**

The treatment shall consist of two immersions; first, the hot immersion; second, the cold or cooling immersion.

**Temperature and Duration of Hot Immersion**

Poles shall be continuously immersed in the preservative at a temperature of 230 degrees F. plus or minus five degrees for not less than eight (8) hours and such period in addition thereto as will insure impregnation of the sapwood of the incised area with preservative to a depth of 1/2 inch. In case the sapwood of the incised area is less than 1/2 inch thick, the impregnation shall be to the full depth of the sapwood.

**Temperature and Duration of Cold or Cooling Immersion**

The preservative of the hot immersion may be allowed to cool in the treating tank or it may be replaced with cold preservative. When the preservative of the hot immersion is replaced with cold preservative, the exchange must be complete within ten minutes.

When the preservative of the hot immersion is replaced with cold preservative, the poles shall be continuously immersed in the cold preservative for a period of not less than two hours, and the temperature of the preservative for the entire period shall be between 150 degrees F. and the temperature at which solids form in the preservative.

When the preservative of the hot immersion is allowed to cool in the treating tank, the poles shall be continuously immersed in the cooling preservative at least two hours and until the temperature of the preservative has been reduced to a point between 150 degrees F. and the temperature at which solids form in the preservative. The poles shall remain immersed at this temperature for a period of not less than ten minutes.

The height of the preservative in the hot, cold, or cooling immersion shall be maintained at the same levels required in paragraph F.

**H.—Impregnation**

The results obtained under this specification shall be a uniform impregnation of the incised area with preservative to a depth of 1/2 inch, except where the thickness of the sapwood is less than 1/2 inch, in which case the impregnation shall be to the full depth of the sapwood. The depth of the impregnation shall be determined by testing with an increment borer at any point within the incised area. All such holes shall be filled with tight-fitting, thoroughly creosoted plugs.

Adherence to this specification results in not only the stipulated depth of impregnation, but also in a very large volume of preservative in the sapwood of the incised area, thus affording maximum protection against decay. No specific preservative content is mentioned owing to the difficulty of accurately making volume tests in the field. The presence of a large volume of preservative can be determined by observing the borings taken for penetration tests.

**I.—Handling**

The use of any tools which might puncture the treated wood shall not be applied within one foot above or one foot below the groundline area. See Paragraph B.

**J.—Storing**

Treated poles held in storage shall be piled upon treated or other non-decaying skids in a clean, well ventilated location free from vegetation and decaying wood. Skids shall be of such strength as to support the poles without producing injurious distortion of any of them, and of such height that no part of any pole shall be less than one foot above the surface of the soil.

## American Standard Specifications for Western Red Cedar Poles

### O—Introduction

These specifications cover western red cedar poles. The poles are to be classified in accordance with the American Standard Dimensions of Western Red Cedar Poles (05c2—1931), which is part of these specifications.

The length and class of the poles wanted shall be stated in the orders.

Poles furnished under these specifications may be either seasoned or unseasoned. If seasoned poles are specifically called for in an order, the purchaser shall specify the seasoning requirements to be met.

The details of any marking, including length and class marks, to be placed on the poles shall be in accordance with instructions from the purchaser.

Complete detailed instructions shall be given the supplier in all cases where modifications are to be made in these specifications to meet special requirements.

### 1.—Material Requirements

#### 1.1—Species

All poles shall be of western red cedar (*Thuja plicata*) cut from live timber.

#### 1.2—Prohibited Defects

All poles shall be free from sap rot, cracks, bird holes, plugged holes and injurious checks; from splits, shakes, hollow and decay in the tops; and from damage by marine borers. Nails, spikes, and other metal shall not be present in the poles unless specifically authorized by the purchaser.

#### 1.3—Limited Defects

**1.31 DEAD STREAKS.**—All poles shall be free from dead streaks that are wider than one-fourth ( $\frac{1}{4}$ ) of the circumference of the pole at the point of measurement.

**1.32 DECAY.**—Poles shall be free from decay and from visible evidence of the presence of wood-rotting fungi except as permitted under Defective Butts.

**1.33 DEFECTIVE BUTTS.**—No poles shall have in the butt surface splits or checks extending from one point on the periphery to another point on the periphery and thence upward more than two (2) feet.

No pole shall have hollow heart, the diameter of which exceeds one-third ( $\frac{1}{3}$ ) the butt diameter or the depth of which exceeds two (2) feet. The depth of hollow heart shall be measured from the butt surface.

Rot is permitted in the butt surface provided the aggregate area of rot and hollow heart does not exceed ten (10) per cent of the entire butt surface.

Complete circular shakes may be present on the butt surface provided the diameter of the ring which they follow is not more than one-third ( $\frac{1}{3}$ ) of the diameter of the butt.

**1.34 GRAIN.**—No pole shall have more than one (1) complete twist of grain in any twenty (20) feet of length.

**1.35 INSECT DAMAGE.**—All poles shall be free from insect damage, except that pin holes circular in outline, not more than one-sixteenth ( $\frac{1}{16}$ ) of an inch in diameter, and not greater in number than fifteen (15) in an area of four (4) square inches, are permitted.

**1.36 KNOTS.**—All poles shall be free from unsound knots.

The diameter of any single knot or knot cavity, or the sum of the diameters of all knots and knot cavities in any one (1) foot section, between the top and two (2) feet below the ground line, shall not exceed the limits set up in the following table. Knots and knot cavities one-half ( $\frac{1}{2}$ ) of an inch or under in diameter shall be ignored in applying the limitations for sum of diameters.

#### Limitations of Knot Size

##### MAXIMUM SIZES PERMITTED, INCHES

Length of Pole	Diameter of any Single Knot or Knot Cavity	Sum of Diameters of All Knots and Knot Cavities in any One (1) Foot Section
All lengths	3	10

**1.37—SCARS.**—No part of a scar shall appear on the upper one-fourth ( $\frac{1}{4}$ ) of the length of a pole or within two (2) feet of the ground line.

Sound scars and cat faces are permitted elsewhere provided the width of the scar or cat face at its widest point is not more than one-fifth ( $\frac{1}{5}$ ) of the circumference of the pole at that point, nor in any case more than five (5) inches.

**1.38 SHAPE.**—Poles shall be free from short crooks.

A pole may have sweep in the section above the ground line subject to the following limitations:

(a) Where sweep is in one (1) plane and (1) direction only, a straight line joining the surface of the pole at the ground line and the edge of the pole at the top shall not be distant from the surface of the pole at any point by an amount greater than one (1) inch for each six (6) feet of length between these points.

(b) Where sweep is in two (2) planes (double sweep) or in two (2) directions in one (1) plane (reverse sweep), a straight line connecting the mid-point at the ground line with the mid-point at the top shall not at any intermediate point pass through the external surface of the pole.

A pole may have offset in the section below ground line, provided that the projection of a straight line joining the mid-point at the top and the mid-point at the ground line does not fall outside the butt surface.

### 2.—Dimensions

#### 2.1—Length

Poles under fifty (50) feet in length shall not be over three (3) inches shorter or six (6) inches longer than nominal length. Poles fifty (50) feet or over in length shall not be over six (6) inches shorter or twelve (12) inches longer than nominal length.

Length shall be measured between the extreme ends of the pole.

#### 2.2—Circumference

Poles shall be classified in accordance with the American Standard Dimensions of Western Red Cedar Poles. This standard gives the minimum allowable circumference at six (6) feet from the butt (except for Classes 8, 9, and 10), and at the top for each length and class of pole listed, but does not preclude the acceptance of poles having greater circumference at these points of measurement than those shown. The top dimensional requirement shall apply at a point corresponding to the minimum length permitted for the pole.

### 3.—Manufacturing Requirements

#### 3.1—Bark Removal

Outer bark shall be completely removed from all poles.

#### 3.2—Sawing

All poles shall be neatly sawed at the butt and top along a plane which shall not be out of square with the axis of the pole by more than two (2) inches per foot of diameter of the sawed surface. Beveling at the edge of the sawed butt surface not more than one-twelfth ( $\frac{1}{12}$ ) of the butt diameter in width, or an equivalent area unsymmetrically located, is permitted.

#### 3.3—Shaving

Shaved poles shall not be furnished under these specifications unless specifically called for by the purchaser.

#### 3.4—Trimming

Branch stubs, partially overgrown knots, and completely overgrown knots rising more than one (1) inch above the pole surface shall be trimmed close. Completely overgrown knots less than one (1) inch high need not be trimmed.

### 4.—Definitions of Terms

The following definitions shall apply in these specifications:

#### 4.1—Fungous Defects

**4.11 DECAY.**—Decay<sup>1</sup> is disintegration of wood substance due to the action of wood destroying fungi. *Rot* and *Dote* mean the same as *Decay*.

**4.12 HOLLOW HEART.**—Hollow heart is a cavity in the heart of the pole resulting from decay.

<sup>1</sup>NOTE: The terms "sound" and "unsound" are used in these specifications to imply that "sound" fiber is unaffected by decay and that "unsound" fiber is or has been affected by decay.



American Standard Specifications for Western Red Cedar Poles

Continued

4.—Definitions of Terms—Continued

4.34 SCARS.—Scars or cat faces are depressions in the surface of the pole, generally elliptical in shape, resulting from wounds where healing has not re-established the normal cross section of the pole.

4.35 SHAKES.—Shakes are separations of the wood, generally parallel with the annual rings.

4.36 SPLITS.—Splits are separations between the fibers of the wood extending from surface to surface through the pole.

4.2—Insect Defects

4.21 INSECT DAMAGE.—Insect damage is the result of boring in the poles by insects or their larvae. Scoring or channeling of the pole surface is not classed as insect damage.

4.3—Timber Defects

4.31 CHECKS.—Checks are lengthwise separations of the wood in a generally radial direction.

4.32 CRACKS.—Cracks are breaks or fractures across the grain of the wood.

4.33 DEAD STREAK.<sup>2</sup>—A dead streak is any portion of the sapwood in which the life process had ended prior to the cutting of the tree.

<sup>2</sup>NOTE: A dead streak starts from the butt and differs therein from a wound, such as a cat face or scar, where the growth of new wood shows that life processes are still acting to repair the injured part.

4.4—Shape

4.41 SHORT CROOK.—A short crook is a localized deviation from straightness which, within any section of five (5) feet or less in length, is more than one-half (½) the mean diameter of the crooked section. (See Diagram 3 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

4.42 SWEEP.—Sweep is the deviation of a pole from straightness. (See Diagrams 1 and 2 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

4.5—Miscellaneous

4.51 KNOT DIAMETER.—The diameter of a knot is its diameter on the surface of the pole measured in a direction at right angles to the lengthwise axis of the pole.

4.52 LIVE TIMBER.—Live timber is that cut from a tree which was standing and living at the time of cutting.

5.—Subsidiary Drawing

The following drawing is subsidiary to the text of these specifications:

Measurement of Sweep and Short Crook in Poles.

6.—Subsidiary Standard

The following standard is subsidiary to the text of these specifications:

American Standard Dimensions of Western Red Cedar Poles (05c2—1931).

Official Manufacturing Specifications for Northern White Cedar Poles

16 Feet and Longer

1.—Live Timber

All poles must be manufactured from live, growing cedar timber in territory adjacent to the Great Lakes.

NOTE: The test of live timber is to cut into the sapwood. If the sapwood is white, the timber was alive when cut.

2.—Manufacture

All poles shall be peeled their entire length, knots trimmed close and butt and top sawed square. No poles with chopped or beveled butts will be accepted.

3.—Lengths

The length shall be measured between the extreme ends of the pole. No pole shall be over 3 inches shorter or 6 inches longer than its specified length.

4.—Top Measurements

Designated Size	CIRCUMFERENCE	
	Green & Watersoaked	Seasoned
4-inch top	12½ inches	12 inches
5-inch top	16 inches	15 inches
6-inch top	19½ inches	18½ inches
7-inch top	23 inches	22 inches
8-inch top	25 inches	24 inches

5.—Defects

A—Rot

Decay in the butt within three inches of the surface of the pole shall not exceed one (1) square inch in area.

Butt rot shall not exceed 5% of the area of the butt, which approximates ⅓ the diameter, in all poles 5-inch top 25 foot long and smaller and shall not exceed 8% of the area of the butt, which approximates ¼ the diameter, in all poles six inch top 25 foot long and larger.

Complete circular shakes in the butt may be present provided the area encircled by the shake does not exceed ten (10) per cent of the total butt area.

B—Top

Tops must be sound.

C—Crook

No pole shall have a short crook or bend, a crook or bend in two planes or a reverse curve. The maximum amount of sweep measured between the ground line and the top shall not be in excess of one (1) inch for each five feet of the length of the pole.

D—Knots

All poles shall be free from unsound knots. The diameter of any single knot or knot cavity or the sum of the diameters of all knots and knot cavities in any one foot section between the top of the pole and two feet below the ground line shall not exceed the limits set up in the following table. Knots or knot cavities ½ inch or under in diameter shall be ignored in applying the limitations for sum of diameters. The diameter of a knot is its diameter on the surface of the pole measured in a direction at right angles to the lengthwise axis of the pole.

Limitations of Knot Sizes

Length of Pole	Diameter of any single knot or knot cavity	Max. sizes permitted, inches
		Sum of diameters of all knots and knot cavities in any one-foot section
35 feet and under	2.5 inches	9 inches
40 feet and over	4.5 inches	11 inches

E—Miscellaneous Defects

All poles shall be free from sap rot, bird holes, plugged holes, injurious checks and splits. No poles showing evidence of having been eaten by ants, worms or other insects shall be accepted, except that poles containing surface worm or insect marks below the ground line may be accepted.

F—Cat Faces and Scars

No part of a scar or cat face shall appear on the upper one-fourth (¼) of the length of a pole or within two (2) feet of the ground line. Sound scars and cat faces are permitted elsewhere provided the width of the scar or cat face at its widest point is not more than one-fifth of the circumference of the pole at that point nor in any case more than five (5) inches.

G—Twist

Winding twist permitted unless unsightly and exaggerated except that there shall not be more than one complete twist of grain in any 20 feet of length.

H—Maximum Defects

No poles shall contain both the maximum crook and maximum butt rot.

## Table of Shipping Weights for Western Red Cedar Poles

Western Red Cedar Association Specification Size			National Electric Light Association Specification Size			American Standards Association Specification Size								
Top In.	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.
4	20	100	D	20	235	10	20	100	1	30	1000	2	55	2000
5	20	135	C	20	310	9	20	135	8	35	450	1	55	2300
6	20	190	B	20	405	8	20	180	7	35	470	4	60	1900
7	20	250	A	20	500	7	20	200	6	35	560	3	60	2000
8	20	325	D	25	310	6	20	225	5	35	650	2	60	2200
5	25	200	C	25	405	5	20	300	4	35	750	1	60	2600
6	25	250	B	25	500	4	20	400	3	35	850	4	65	2200
7	25	325	A	25	685	3	20	500	2	35	1000	3	65	2300
8	25	400	D	30	405	2	20	600	1	35	1200	2	65	2500
6	30	325	C	30	500	1	20	700	6	40	700	1	65	3200
7	30	400	B	30	685	10	25	135	5	40	800	4	70	2600
8	30	550	A	30	780	9	25	200	4	40	900	3	70	2700
9	30	650	D	35	540	8	25	225	3	40	1100	2	70	3000
6	35	450	C	35	660	7	25	250	2	40	1300	1	70	3600
7	35	550	B	35	780	6	25	320	1	40	1500	4	75	3000
8	35	650	A	35	960	5	25	400	5	45	1000	3	75	3100
9	35	800	C	40	780	4	25	480	4	45	1150	2	75	3600
7	40	675	B	40	960	3	25	600	3	45	1300	1	75	4200
8	40	800	A	40	1200	2	25	720	2	45	1550	4	80	3500
9	40	1000	B	45	1200	1	25	850	1	45	1800	3	80	3600
8	45	1000	A	45	1440	9	30	250	5	50	1300	2	80	4200
9	45	1200	B	50	1440	8	30	325	4	50	1400	1	80	5000
8	50	1200	A	50	1680	7	30	350	3	50	1550	3	85	4000
9	50	1400	B	55	1680	6	30	420	2	50	1800	2	85	4500
8	55	1400	A	55	1920	5	30	500	1	50	2000	1	85	5500
9	55	1600	B	60	1920	4	30	610	5	55	1600	3	90	4800
8	60	1600	A	60	2220	3	30	730	4	55	1600	2	90	5600
9	60	1850	B	65	2220	2	30	850	3	55	1750	1	90	6600
8	65	1850	A	65	2640									
9	65	2200	B	70	2640									
8	70	2200	A	70	3120									
9	70	2600	B	75	3120									
8	75	2600	A	75	3600									
9	75	3000	B	80	3600									
8	80	3000	A	80	4200									
9	80	3500	B	85	4200									
8	85	3500	A	85	4800									
9	85	4000	B	90	4800									
8	90	4000	..	..	....									

### Minimum Weight Required for Carloads

Single Car: On 35-Foot and Shorter Poles..... 40000 Lbs.  
 Single Car: On 40-Foot or Mixed Loads, 40-Foot and Shorter..... 50000 Lbs.  
 Double Loads: 45-Foot and Longer or 45-Foot and Shorter... 66000 Lbs.  
 Triple Loads..... 99000 Lbs.  
 25% over minimum required should be added to cover variation in weight.

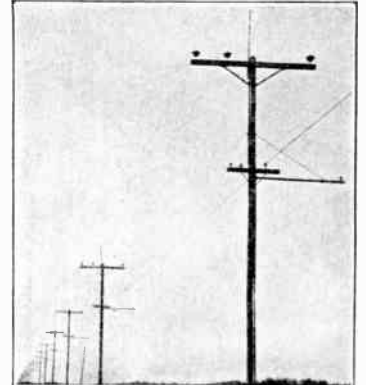
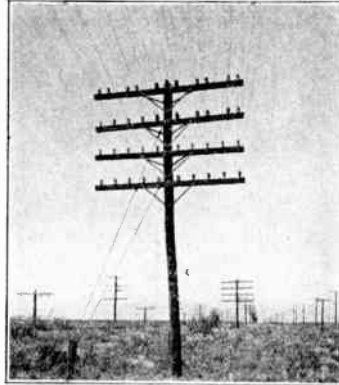
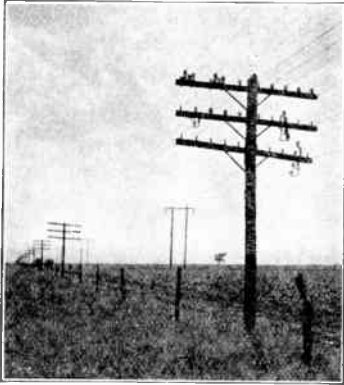
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Top In.	Length Ft.	Wt. Lbs.	Top In.	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.	Class	Length Ft.	Wt. Lbs.			
4	16	85	6	30	350	G	20	120	E	35	540	10	16	85	5	22	420	3	35	1060
5	16	105	6½	30	350	F	20	160	D	35	540	9	16	105	4	22	500	2	35	1380
6	16	135	7	30	450	E	20	160	C	35	540	8	16	135	3	22	540	1	35	1620
7	16	165	8	30	600	D	20	230	B	35	720	7	16	135	2	22	780	6	40	740
8	16	200	5	35	375	C	20	230	A	35	1020	6	16	190	1	22	1020	5	40	790
4	18	95	5½	35	375	B	20	300	F	40	750	5	16	230	10	25	150	4	40	1020
5	18	125	6	35	450	A	20	540	E	40	750	10	18	95	9	25	200	3	40	1280
6	18	155	6½	35	450	F	22	240	D	40	750	9	18	125	8	25	250	2	40	1675
7	18	200	7	35	600	E	22	240	C	40	750	8	18	155	7	25	250	1	40	2040
8	18	325	8	35	850	D	22	300	B	40	1020	7	18	190	6	25	300	5	45	1080
4	20	100	6	40	625	C	22	300	A	40	1320	6	18	210	5	25	420	4	45	1215
4½	20	100	6½	40	625	B	22	420	E	45	1320	5	18	265	4	25	515	3	45	1535
5	20	130	7	40	850	A	22	540	D	45	1320	4	18	300	3	25	600	2	45	1970
5½	20	130	8	40	1100	G	25	180	C	45	1080	3	18	420	2	25	780	1	45	2640
6	20	190	6	45	900	F	25	240	B	45	1320	10	20	100	1	25	1020	5	50	1380
7	20	250	7	45	1100	E	25	240	A	45	1620	9	20	130	9	30	275	4	50	1470
8	20	350	8	45	1350	D	25	300	E	50	1620	8	20	190	8	30	350	3	50	1860
4	25	150	6	50	1150	C	25	300	D	50	1620	7	20	190	7	30	350	2	50	2640
5	25	200	7	50	1350	B	25	420	C	50	1380	6	20	230	6	30	420	1	50	3200
5½	25	200	8	50	1700	A	25	540	B	50	1620	5	20	300	5	30	520	5	55	1560
6	25	250	6	55	1300	F	30	420	A	50	2040	4	20	350	4	30	630	4	55	1620
6½	25	250	7	55	1700	E	30	420	E	55	2040	3	20	540	3	30	870	3	55	2260
7	25	350	8	55	2200	D	30	420	D	55	2040	2	20	600	2	30	1170	2	55	2960
8	25	450	7	60	2200	C	30	420	C	55	1560	1	20	720	1	30	1320	1	55	3800
5	30	275	8	60	2500	B	30	540	B	55	2040	10	22	150	7	35	450	4	60	2200
5½	30	275	..	..	....	A	30	720	A	55	2640	9	22	200	6	35	510	3	60	2640
						F	35	540	..	..	....	8	22	225	5	35	720	2	60	3460
												7	22	225	4	35	820	1	60	4500
												6	22	315	..	..	....	..	..	....

### Minimum Weight Required for Carloads

Single Cars..... 30000 Lbs. Double Loads (Poles Requiring 2 Cars)..... 60000 Lbs.

## International Creosoted Pine Poles



Old Lines of International Creosoted Pine Poles—25 Years In Service  
In Above Lines—6712 Poles— $\frac{1}{2}$  of 1 Per Cent Replaced to Date (1933)

### General

Graybar Electric Company brings to the utility trade the highest quality in creosoted pine poles and offers for support of this statement the fact that its supplier has more long-time service records of poles without failures than any creosoting concern. Low annual cost, reliability, the fact that in times of financial stress or weather hazard the utility company needs lines that will stand without failure, all of these have dominated us in our creosoted pine pole policy.

### International As A Supplier

Our supplier, International Creosoting and Construction Company, organized in 1875 and one of the largest commercial creosoting concerns in the business, has an outstanding record and a dominant place in the treating industry. We call special attention to the records of old and new lines cited in this concern's photographs here shown. They are typical, and a few of the many available.

Operating in one of the finest timber-producing areas in the South-West, International has added to its advantages of location and natural resources the skill of graduate chemical engineers and treating operators whose work is conducted in modern plants and well equipped laboratories. Pioneered and trained by a background of 58 years experience, International timbermen select the cream of the timber area (surpassing even the quality of the lumber logging operations) for the manufacture of Graybar-International poles. This production moves to conditioning yards at the treating plants by means of a highly developed and well organized concentrating system. The yards themselves have been built in conformity with Government seasoning recommendations.

Always using only one grade, and that the best grade of creosote in the treatment of its poles, and standing against every tendency towards departures in quality or reduction in quantity of the preservative that would make of the user's line an experimental laboratory, Graybar-International creosoted pine poles have gone to almost every state of the Union and without exception have given outstanding service.

### Reasons For The Standing Of The International Pine Pole

- |                    |                     |
|--------------------|---------------------|
| 1—Long Life        | 5—Cleanliness       |
| 2—Low Annual Cost  | 6—Fire Resistant    |
| 3—Great Strength   | 7—Bird Resistant    |
| 4—Lasting Strength | 8—Termite Resistant |

The utilities of the United States use more creosoted pine than all other treated poles put together. Only briefly need their qualifications be given to account for this preference. The tall straight pine trees of the South are natural poles. They grow with a gradually tapering stem, practically without branches, and when sheared of their bark and browned as the result of treatment, they present a stately appearance in the line. Their wood is the strongest of the poles commonly used in line construction. Fortunately pine is a wood into which creosote goes very deeply during the course of scientifically controlled and proper treating operation, and the depth of this protection is the reason for the exceedingly long life of the pine pole. It is the explanation also of pine's resistance to termite attacks, for the checks which open in

every wood and expose it to the ravages of these insects do not go past the deep creosote penetration in the pine pole. Modern methods and advances in the science of wood preservation now makes available the creosoted pine pole so well manufactured in appearance, and with surface so clean that they are in use on the streets of New York, Detroit, Los Angeles, St. Louis, Baltimore, Boston, San Francisco, and thousands of other cities.

### American Standards Association Specifications for Southern Pine Poles

Approved June 20, 1931



#### Introduction

These specifications cover southern pine poles which are to be given a preservative treatment. The poles are to be classified in accordance with the American Standard Dimensions of Creosoted Southern Pine Poles (05e2-1931), which is a part of these specifications.

The length and class of poles wanted and full details of the framing desired shall be stated in the orders.

The details of any marking, including length and class marks, to be placed on the poles shall be in accordance with instructions from the purchaser.

Complete detailed instructions shall be given the supplier in all cases where modifications are to be made in these specifications to meet special requirements.

#### 1.—Material Requirements

##### 1.1—Species

All poles shall be cut from live southern pine timber: Longleaf Pine (*Pinus palustris*), Shortleaf pine (*Pinus echinata*), Loblolly Pine (*Pinus taeda*), Slash Pine (*Pinus caribaea*), and Pond Pine (*Pinus rigida serotina*).

##### 1.2—Prohibited Defects

All poles shall be free from decay, red heart, cracks, plugged holes, and bird holes. Nails, spikes, and other metal shall not be present in the poles unless specifically authorized by the purchaser.

##### 1.3—Permitted Defects

1.31 BLUE SAP STAIN.—Blue sap stain that is not accompanied by softening or other disintegration of the wood (decay) is permitted under these specifications.

1.32 HOLLOW PITH CENTERS.—Hollow pith centers in the tops or butts of poles and in knots are permitted.

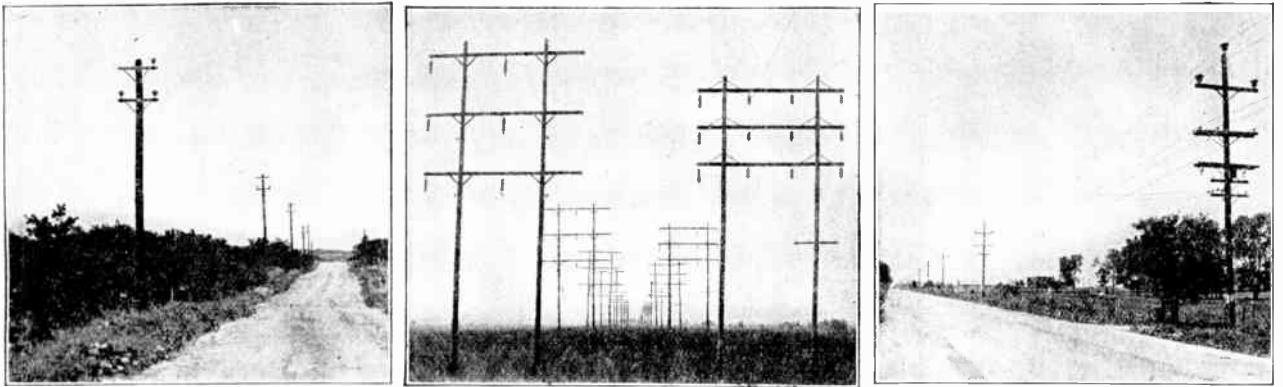
##### 1.4—Limited Defects

1.41 CHECKS.—The top and side surfaces of poles shall be free from injurious checks.

1.42 SHAKES.—Shakes in the butt surface extending over not more than one-quarter ( $\frac{1}{4}$ ) of the circumference are permitted provided they are at least one (1) inch distant from the edge of the butt. Shakes extending over more than one-quarter ( $\frac{1}{4}$ ) of the circumference are permitted when they are inside of a circle whose center corresponds to the center of the butt surface and whose diameter equals one-half ( $\frac{1}{2}$ ) of the average butt diameter.



## International Creosoted Pine Poles



New Lines of International Creosoted Pine Poles—10 Years in Service  
In Above Lines—4026 Poles—No Replacements to Date (1933)

### Specifications for Southern Pine Poles

Continued

Shakes in the top surface whose width does not exceed one-sixteenth ( $\frac{1}{16}$ ) of an inch are permitted provided they do not extend over more than one-half ( $\frac{1}{2}$ ) of the top circumference.

1.43 SPLITS.—Splits are prohibited in the top surfaces of poles. Splits in butt surfaces are permitted provided that their height from the butt along the side surfaces does not exceed two (2) feet.

1.44 GRAIN.—No pole shall have more than one (1) complete twist of grain in any twenty (20) feet of length.

1.45 INSECT DAMAGE.—Insect damage consisting of holes less than one sixteenth ( $\frac{1}{16}$ ) of an inch in diameter is permitted.

1.46 KNOTS.—The diameter of any single knot or knot cavity, or the sum of the diameters of all knots and knot cavities in any one (1) foot section shall not exceed the limits set up in the following table. Knots and knot cavities one-half ( $\frac{1}{2}$ ) of an inch or under in diameter shall be ignored in applying the limitations for sum of diameters.

Limitations of Knot Size

Length of Pole	MAXIMUM SIZES PERMITTED, INCHES		
	DIAMETER OF ANY SINGLE KNOT OR KNOT CAVITY		Sum of Diameters of All Knots and Knot Cavities in Any 1 Foot Section
	Classes 1-3	Classes 4-10	All Classes
45 Ft. and Under	4	3	8
50 Ft. and Over	5	5	10

Knots one (1) inch or over in diameter, showing discoloration or softness of fibre, indicating possible decay, shall be neatly gouged to a depth of not more than one-fifth ( $\frac{1}{5}$ ) of the diameter of the pole at the point where the knot is located, to permit determination of the character and extent of decay. The gouging shall be done without unnecessary removal of sound wood, and in such a manner as to insure drainage of water from the hole when the pole is set. Where such gouging does not completely remove the decay (heart rot), the pole shall be rejected.

Knots under one (1) inch in diameter need not be gouged unless after trimming the presence of decay is revealed and upon further examination the decay is found to extend to a depth of more than two (2) inches.

When more than one (1) cavity is present in a pole, the sum of the depths of all cavities in the same six (6) inch longitudinal section of the pole shall not exceed one-third ( $\frac{1}{3}$ ) of the mean diameter of that section.

1.47 SCARS.—No pole shall have a turpentine face or other scar located within two (2) feet of the ground line.

In other sections of the pole, scars which have been smoothly trimmed so as to remove all bark and all surrounding or overhanging wood that is not completely intergrown with the wood of the body of the pole are permitted, provided

(a) that such trimming does not result in abrupt changes in the contour of the pole surface and that trimmed scar does not have a depth of more than one (1) inch, except that where the diameter of the pole at the location of the scar is more than ten (10) inches the depth may be one-tenth ( $\frac{1}{10}$ ) of the diameter; and

(b) that the circumference of the pole at any point on trimmed surfaces located between the butt and a point two (2) feet below the ground line is not less than the circumference of the pole at the ground line.

1.48 SHAPE.—Poles shall be free from short crooks.

A pole may have sweep subject to the following limitations:

(a) Where sweep is in one (1) plane and one (1) direction only, a straight line joining the surface of the pole at the ground line and the edge of the pole at the top shall not be distant from the surface of the pole at any point by an amount greater than one (1) inch for each six (6) feet of length between these points.

(b) Where sweep is in two (2) planes (double sweep) or in two (2) directions in one (1) plane (reverse sweep), a straight line connecting the mid-point at the ground line with the mid-point at the top shall not at any intermediate point pass through the external surface of the pole.

## 2.—Dimensions

### 2.1—Length

Poles under fifty (50) feet in length shall not be over three (3) inches shorter or six (6) inches longer than nominal length. Poles fifty (50) feet or over in length shall not be over six (6) inches shorter or twelve (12) inches longer than nominal length.

Length shall be measured between the extreme ends of the pole.

### 2.2—Circumference

Poles shall be classified in accordance with the American Standard Dimensions of Creosoted Southern Pine Poles. Minimum allowable circumferences at six (6) feet from the butt (except for Classes 8, 9, and 10), and at the top, for each length and class of pole listed, are shown in this standard. Poles having circumferences which are greater, at the same points of measurement, than those shown for the length and class desired, shall be acceptable, provided that the six (6) foot from butt circumference is less than the minimum given for the second larger class pole of the same length. The top dimensional requirement shall apply at a point corresponding to the minimum length permitted for the pole.



International Creosoted Pine Poles  
Specifications for Southern Pine Poles

Continued

Dimensions of Creosoted Southern Pine Poles

Lgth. of Pole Ft.	Ground Line Dist. from Butt Feet	CLASS									
		1	2	3	4	5	6	7	*8	*9	*10
		MINIMUM TOP CIRCUMFERENCE, INCHES					MINIMUM CIRCUMFERENCE AT 6 FEET FROM BUTT, INCHES				
16	3 1/2	27	25	23	21	19	17	15	18	15	12
18	3 1/2	27	25	23	21	19	17	15	18	15	12
20	4	31.5	29.5	27.5	25.5	23.5	22.0	20.0	20.0	20.0	20.0
22	4	33.0	31.0	29.0	26.5	24.5	23.0	21.0	21.0	21.0	21.0
25	5	34.5	32.5	30.0	28.0	26.0	24.0	22.0	22.0	22.0	22.0
30	5 1/2	37.5	35.0	32.5	30.0	28.0	26.0	24.0	24.0	24.0	24.0
35	6	40.0	37.5	35.0	32.0	30.0	27.5	25.5	25.5	25.5	25.5
40	6	42.0	39.5	37.0	34.0	31.5	29.0	27.0	27.0	27.0	27.0
45	6 1/2	44.0	41.5	38.5	36.0	33.0	30.5	28.5	28.5	28.5	28.5
50	7	46.0	43.0	40.0	37.5	34.5	32.0	29.5	29.5	29.5	29.5
55	7 1/2	47.5	44.5	41.5	39.0	36.0	33.5	31.5	31.5	31.5	31.5
60	8	49.5	46.0	43.0	40.0	37.0	34.5	32.0	32.0	32.0	32.0
65	8 1/2	51.0	47.5	44.5	41.5	38.5	36.0	33.5	33.5	33.5	33.5
70	9	52.5	49.0	46.0	42.5	39.5	37.0	34.5	34.5	34.5	34.5
75	9 1/2	54.0	50.5	47.0	44.0	41.0	38.5	36.0	36.0	36.0	36.0
80	10	55.0	51.5	48.5	45.0	42.0	39.5	37.0	37.0	37.0	37.0
85	10 1/2	56.5	53.0	49.5	46.0	43.0	40.5	38.0	38.0	38.0	38.0
90	11	57.5	54.0	50.5	47.0	44.0	41.5	39.0	39.0	39.0	39.0

\*No butt requirement on Classes 8, 9 and 10.

3.—Manufacturing Requirements

3.1—Bark Removal

Outer bark shall be completely removed from all poles. No patch of inner bark left on the pole surface shall be more than one quarter (1/4) of an inch in width or more than four (4) inches long.

3.2—Sawing

All poles shall be neatly sawed at the butt along a plane which shall not be out of square with the axis of the pole by more than two (2) inches per foot of diameter of the sawed surface. Beveling at the edge of the sawed butt surface not more than one-twelfth (1/12) of the butt diameter in width, or an equivalent area unsymmetrically located, is permitted.

3.3—Trimming

Branch stubs, partially overgrown knots, and completely overgrown knots rising more than one (1) inch above the pole surface shall be trimmed close. Completely overgrown knots less than one (1) inch high need not be trimmed.

3.4—Framing

All poles shall be framed in accordance with the terms of the order before they are subjected to the preservative treatment.

Gains on poles showing sweep or curvature shall be located on the concave side in the plane of the greatest curvature.

All gains on the same pole shall be cut so that their flat surfaces are approximately parallel. Conformance to this requirement may be tested by placing straight edges thirty (30) inches long on the faces of the finished gains so that the ends of the straight edges extend fifteen (15) inches on either side of the center line of the pole. The straight edges in any two (2) gains, when sighted in the direction of the longitudinal axis of the pole, shall not be out of parallel at their ends by more than one-sixteenth (1/16) of an inch. Bolt holes shall be bored perpendicular to the faces of the gains.

4.—Storage and Handling

4.1—Storage

When it is necessary for any reason to hold in storage poles offered under these specifications, they shall be stacked on creosoted or non-decaying skids of such dimensions and so arranged as to support the poles without producing noticeable distortion of any of them. Poles shall be piled in such a manner as to permit free circulation of air and they shall be supported at all points at least one (1) foot above the general ground level, or any vegetation growing thereon. No decayed or decaying wood shall be permitted to remain underneath stored poles.

4.2—Handling

Pole tongs, cant hooks, and other pointed tools capable of producing indentations of more than one (1) inch in depth shall not be used on poles furnished under these specifications.

5.—Definitions of Terms

The following definitions shall apply in these specifications:

5.1—Fungous Defects

5.11 BLUE SAP STAIN.—Blue sap stain is a bluish coloration in the sapwood, caused by the action of certain molds and fungi, that is not accompanied by softening or other disintegration of the wood.

5.12 DECAY.—Decay is disintegration of wood substance due to the action of wood-destroying fungi. Rot and Dote mean the same as Decay.

5.13 RED HEART.—Red heart is the incipient stage of a destructive heart rot caused by *Trametes pini* that occurs in the living tree. It is characterized by a reddish or brownish color in the heartwood.

5.2—Insect Defects

5.21 INSECT DAMAGE.—Insect damage is the result of boring in the pole by insects or their larvae. Scoring or channeling of the pole surface is not classed as insect damage.

5.3—Timber Defects

5.31 CHECKS.—Checks are lengthwise separations of the wood in a generally radial direction.

Heart checks are checks which extend from the pith center of the pole toward but not to the periphery of the pole.

5.32 CRACKS.—Cracks are breaks or fractures across the grain of the wood.

5.33 SCARS.—Scars or cat faces are depressions in the surface of the pole, generally elliptical in shape, resulting from wounds where healing has not re-established the normal cross section of the pole.

5.34 SHAKES.—Shakes are separations of the wood, generally parallel with the annual rings.

5.35 SPLITS.—Splits are separations between the fibers of the wood extending from surface to surface through the pole.

5.4—Shape

5.41 SHORT CROOK.—A short crook is a localized deviation from straightness which, within any section of five (5) feet or less in length, is more than one-half (1/2) the mean diameter of the crooked section. (See Diagram 3 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

5.42 SWEEP.—Sweep is the deviation of a pole from straightness. (See diagrams 1 and 2 of the subsidiary drawing entitled "Measurement of Sweep and Short Crook in Poles.")

5.5—Miscellaneous

5.51 KNOT DIAMETER.—The diameter of a knot is its diameter on the surface of the pole measured in a direction at right angles to the lengthwise axis of the pole.

5.52 LIVE TIMBER.—Live timber is that cut from a tree which was standing and living at the time of cutting.

6.—Subsidiary Drawing

The following drawing is subsidiary to the text of these specifications:

Measurement of Sweep and Short Crook in Poles.

7.—Subsidiary Standard

The foregoing dimension table is subsidiary to the text of these specifications: It is designated as:

American Standard Dimensions of Creosoted Southern Pine Poles (05e2-1931).

## International Creosoted Pine Poles

### Measurement of Sweep and Short Crook in Poles

Diagram 1—Measurement of Sweep in One Plane and One Direction

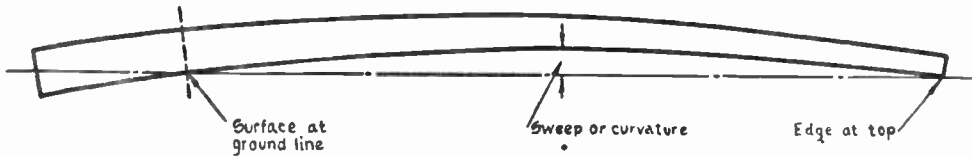


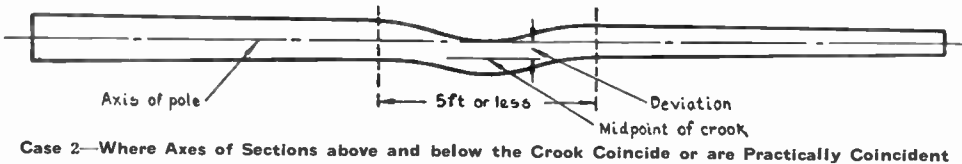
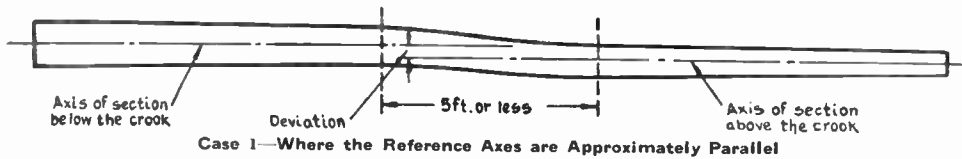
Diagram 2—Measurement of Sweep in 2 Planes (Double Sweep) or in 2 Directions in One Plane (Reverse Sweep)



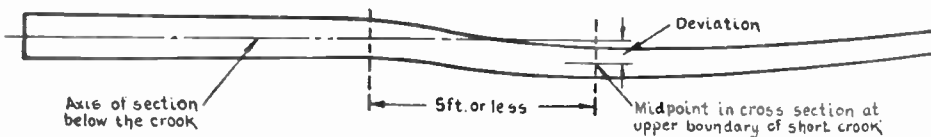
NOTE: Diagram No. 2 applies to the measurement of double sweep in Western Red Cedar and Southern Pine

Poles. For measurement of double sweep in Northern White Cedar and Chestnut Poles, see text.

Diagram 3—Measurement of Short Crook (Three Cases Shown)



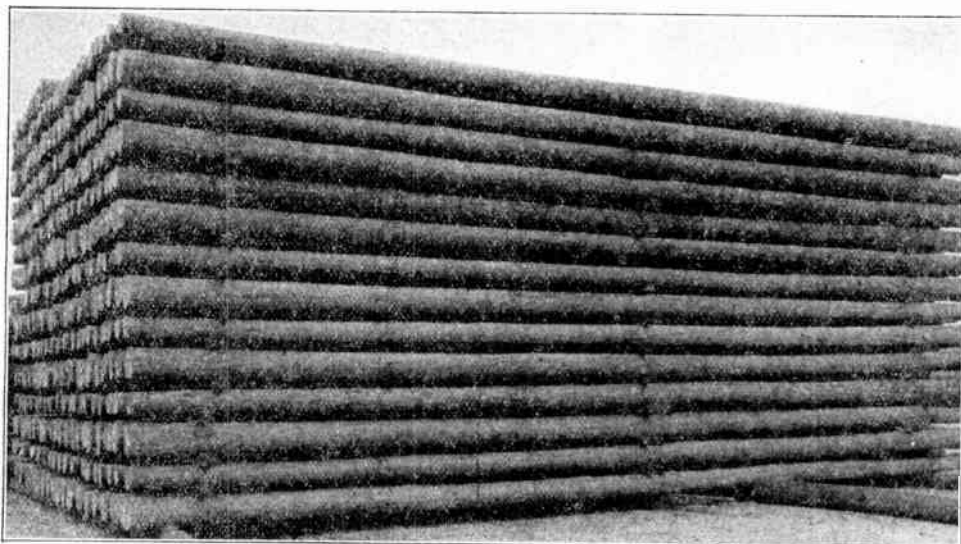
Case 2—Where Axes of Sections above and below the Crook Coincide or are Practically Coincident



Case 3—Where Axis of Section above Short Crook is not Parallel or Coincident with Axis below the Crook

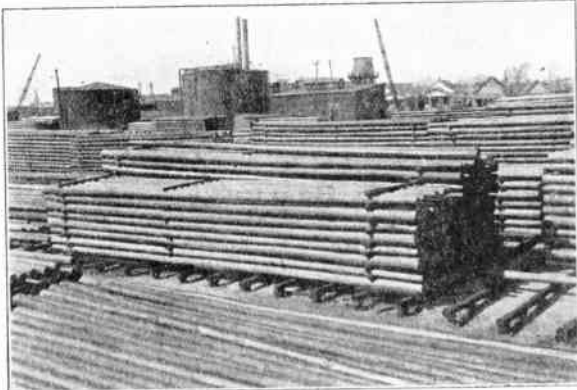
NOTE: The three cases shown under Diagram 3 are typical and are intended to establish the principle of meas-

uring short crooks. There may be other cases not exactly like those illustrated.



International Pine Poles have the Straightness and Symmetry of a Machined Product

International Creosoted Pine Poles



Stacks Such as Here Shown on One of International's Conditioning Yards Make Possible Our Quick Shipment of Quality Creosoted Pine Poles

Top Dimension Poles

Top dimension poles conform in all respects to American Standards Association Specification poles, with the sole difference that top diameter poles specify minimum top diameter only; whereas A. S. A. Specification poles specify both minimum top circumference and circumference six feet from the butt.

Length Feet	TOP DIAMETER IN INCHES*					
16	4-5	5-6	6-7	...	...	...
18	4-5	5-6	6-7	...	...	...
20	4-5	5-6	6-7	7-8	...	...
25	4-5	5-6	6-7	7-8	8-9	...
30	...	5-6	6-7	7-8	8-9	...
35	...	5-6	6-7	7-8	8-9	...
40	...	...	6-7	7-8	8-9	9-10
45	...	...	6-7	7-8	8-9	9-10
50	...	...	...	7-8	8-9	9-10
55	...	...	...	7-8	8-9	9-10
60	...	...	...	7-8	8-9	9-10 10-11
65	...	...	...	7-8	8-9	9-10 10-11
70	...	...	...	7-8	8-9	9-10 10-11
75	...	...	...	7-8	8-9	9-10 10-11

Anchor Logs

Anchor logs conform in all respects to the specification for top dimension poles.

3	...	5-6	6-7	7-8	8-9	9-10	...
4	...	5-6	6-7	7-8	8-9	9-10	...
5	...	5-6	6-7	7-8	8-9	9-10	...
6	...	5-6	6-7	7-8	8-9	9-10	...
7	...	5-6	6-7	7-8	8-9	9-10	...
8	...	5-6	6-7	7-8	8-9	9-10	...
9	...	5-6	6-7	7-8	8-9	9-10	...

\*Note: Top diameter is determined by placing a tape around the circumference of the pole at the base of the roof.

What an Order Should Show

To avoid delays and prevent the possibility of error, an inquiry or an order for International poles should contain the following information:

- 1.—Name of consignee.
- 2.—Destination of shipment.
- 3.—Date shipment is desired.
- 4.—Number of poles required.
- 5.—Length and minimum top diameter.
- 6.—Number of pounds of creosote required per cubic foot of wood.
- 7.—Type of framing desired. A blue print or sketch is preferable. Poles can be framed more economically at a treating plant than in the field at point of installation. Insofar as possible therefore complete framing instructions are desirable.

\*Specification for the Preservative Treatment of Southern Yellow Pine Poles

Rueping Empty Cell Process

\*Note: A descriptive specification only. It must be recognized that specifications do not guarantee quality, and should not be regarded as adequate protection to the buyer. In any treated wood, the all important factor is the source of supply.

General

The following specification is intended to obtain an empty cell treatment for the poles; and if the material to be treated is in a different condition as to moisture and seasoning, material for each retort charge shall be selected as to condition of moisture so that there will be no great difference in degree of seasoning in any one charge. Only perfectly sound poles shall be treated. The treating plant shall be equipped with indicating and recording gauges and other necessary apparatus for accurately observing and recording the treating process. Above the level of the creosoting cylinder there shall be an overhead drum for the purpose of determining that the cylinder is full of preservative and free from air and the gauge reading indicating a full cylinder shall not be taken until the preservative is seen to overflow through the valve on top of this drum; there shall also be a sap drum below the level of the cylinder by means of which sap and condensation shall be removed regularly. The treating plant must have all the necessary chemicals, a laboratory and laboratory apparatus to enable the quality of preservative to be determined.

Seasoning

Air-Seasoning

In air-seasoning, the poles shall be stacked in such a manner as to provide free air circulation and minimum contact between individual pieces in each stack. These stacks shall be placed on treated or otherwise permanent skids at least six inches above the ground on a well drained storage yard free from vegetation and decaying wood, so located that prevailing winds strike it freely, and each layer shall be separated by creosoted strips. Alleys between the stacks shall be wide, continuous and straight. The material shall remain until in the judgment of the inspector it is sufficiently seasoned to obtain the maximum benefit from the treatment.

Seasoning By Steam

When time for air-seasoning is not available, steam seasoning shall be used. Live, saturated steam shall be admitted to the treating cylinder taking care that all air is swept from the cylinder before the outlet valve is closed. Pressure shall then be raised gradually to the maximum temperature desired, this maximum being determined by the treating inspector. It should not be less than 259° F., not more than 270° F. The duration of the steaming process is dependent upon the degree of seasoning of the poles in the cylinder charge but shall in no case be carried to such an extent as to injure the timber.

Initial Vacuum

After the steaming process has been completed the steam shall be blown off and the treating cylinder exhausted as quickly as possible to as high a vacuum as possible, which must be at least twenty-four inches at sea level or proportionately less at higher altitudes. This vacuum shall be maintained for at least one hour or for whatever longer period is necessary, so that the wood may be as dry and free from air as practicable. During the exhaustion process the temperature within the treating cylinder shall be maintained by means of steam under pressure in the closed coils. The cylinder shall be relieved of sap and condensation continuously.



## International Creosoted Pine Poles

### Specification for the Preservative Treatment of Southern Yellow Pine Poles

#### Seasoning—Continued

##### Initial Air Pressure

In the case of air-seasoned poles, Initial Air Pressure is the first step in the treating process. With steam-seasoned poles this step immediately follows the Initial Vacuum.

The poles shall be subjected to air pressure of sufficient intensity and duration (usually 40 lbs. to 70 lbs.) to provide under a quick high vacuum the ejection of surplus preservative, and to insure a retention and proper distribution of the stipulated number of pounds of preservative per cubic foot of wood.

##### Treatment

The creosote shall be introduced between 170° F. and 210° F., the cylinder pressure being maintained constant until the cylinder is filled. The oil must be seen by the inspector to flow from the overhead drum on top of the treating cylinder, thus assuring him that the cylinder is completely filled with the preservative. The pressure shall then be gradually raised to and maintained at a minimum of 150 lbs. per square inch until there is obtained the largest gross absorption that can be reduced to the stipulated final retention, calculation being based on readings of the working tank gauges and the weight of the creosote at 100° F. The quantity of oil for final retention shall be based on the cubic content of wood in the treating cylinder as determined by actual measurement of the top and butt of each pole in each charge. Under no conditions may shortage of oil in one charge be offset by overage in another; the minimum final retention in each case must be 100 per cent of the quantity of creosote specified.

##### Final Vacuum

After pressure is completed and the cylinder is emptied of oil a sufficient vacuum shall be promptly created and maintained until the timber can be removed from the cylinder free from dripping oil.

##### Preservative

For preservative see Creosote Specification.

**NOTE:** A final retention of 8, 10 or 12 pounds of creosote per cubic foot are most frequently used. Of these, the 8-pound treatment is specified in the great majority of cases.

### Standard Specifications for Creosote Oil American Wood Preservers Association

#### Grade 1

- 1.—The oil shall be a distillate of coal-gas tar or coke-oven tar.<sup>1</sup> It shall comply with the following requirements:
- 2.—It shall not contain more than three per cent of water.
- 3.—It shall not contain more than 0.5 per cent of matter insoluble in benzol.<sup>2</sup>
- 4.—The specific gravity of the oil at 38° C., compared with water at 15.5° C., shall be not less than 1.03.
- 5.—The distillate, based on water-free oil, shall be within the following limits:  
Up to 210° C., not more than 5 per cent.  
Up to 235° C., not more than 25 per cent.
- 6.—The residue above 355° C., if it exceeds 5 per cent shall have a float test of not more than 50 seconds at 70° C.
- 7.—The oil shall yield not more than 2 per cent of coke residue.
- 8.—The foregoing tests shall be made in accordance with the standard methods of the American Wood-Preservers' Association. (See Manual—Creosote, Analysis.)

<sup>1</sup>Owing to the complexity of the chemical composition and physical properties of coal-tar creosote oil, and to the fact that some of the same compounds and properties which characterize coal-tar creosote are found in certain petroleum derivatives, the determination of the purity of creosote oil is difficult. When there is not certain assurance that the oil is a pure product, the following tests will aid in arriving at an opinion as to its coal-tar origin:

A.—Fraction distilling between 210° and 235° C. is usually solid or contains some solids when cooled to 25° C.

B.—All of the fractions up to 315° C. contain tar acids in varying amounts, usually at least 1 per cent calculated on the amount of the fraction tested. (See Manual—Creosote, Analysis, Tar Acids.)

C.—The specific gravity of the fraction between 235° and 315° C. is usually not lower than 1.025 and specific gravity of the fraction between 315° and 355° C. is usually not lower than 1.085 at 38° C. compared with water at 15.5° C. However, some pure coal-tar distillates fall slightly below these limits.

If the oil does not comply with at least one of the foregoing tests it is undoubtedly not a pure coal-tar creosote.

<sup>2</sup>Samples of oil taken from working tanks may show an increase in matter insoluble in benzol due to treating operations. Such increases provided they do not exceed by 1 per cent the specification limits should not serve to cause rejection of the oil for non-conformity with specifications if it can be shown that the original fresh oil was of specified quality.

#### Depth of Creosote Penetration



Increment Borer

The increment borer shown here is used for extracting sections of wood from poles to determine how deeply the preservative has penetrated into the wood.

The use of this instrument is recommended as one means by which the buyer can gauge the quality of the product he receives. It does not damage the pole and the only precaution is that a creosoted wood plug be driven into the hole after the boring has been extracted.

For adequate protection it is essential that creosote penetrates wood deeply (see discussion on penetration later in this section).

Prices for increment borers, on request.



International Creosoted Pine Poles

Estimated Weights of Poles

American Standards Association Specification Poles

Length Pole Feet	8 Pounds Final Retention									
	ESTIMATED WEIGHTS IN POUNDS									
	A.S.A. SIZE GROUP									
	1	2	3	4	5	6	7	8	9	10
16	.....	.....	.....	.....	254	212	179	240	179	122
18	.....	.....	409	363	301	263	216	277	212	141
20	635	555	479	418	353	310	259	315	235	169
25	898	808	686	602	508	423	362	423	324	221
30	1241	1076	921	780	672	573	489	541	423	.....
35	1603	1410	1213	996	865	733	616	682	.....	.....
40	1974	1734	1499	1260	1048	884	761	.....	.....	.....
45	2369	2087	1772	1528	1250	1062	921	.....	.....	.....
50	2820	2435	2068	1777	1476	1246	1081	.....	.....	.....
55	3220	2801	2411	2077	1739	1481	.....	.....	.....	.....
60	3798	3187	2750	2298	1988	1683	.....	.....	.....	.....
65	4362	3628	3163	2646	2265	.....	.....	.....	.....	.....
70	4874	4145	3502	2947	2538	.....	.....	.....	.....	.....
75	5429	4644	3892	3285	.....	.....	.....	.....	.....	.....

Length Pole Feet	10 Pounds Final Retention									
	ESTIMATED WEIGHTS IN POUNDS									
	A.S.A. SIZE GROUP									
	1	2	3	4	5	6	7	8	9	10
16	.....	.....	.....	.....	262	218	184	247	184	126
18	.....	.....	422	364	310	272	223	286	218	146
20	655	572	495	432	364	320	267	325	243	175
25	926	834	708	621	524	437	373	437	335	228
30	1280	1111	951	805	694	592	504	558	437	.....
35	1654	1455	1251	1028	892	757	635	703	.....	.....
40	2037	1790	1547	1300	1082	912	786	.....	.....	.....
45	2444	2153	1828	1576	1290	1096	951	.....	.....	.....
50	2910	2512	2134	1833	1523	1285	1116	.....	.....	.....
55	3322	2891	2488	2144	1795	1528	.....	.....	.....	.....
60	3919	3288	2837	2372	2052	1736	.....	.....	.....	.....
65	4501	3744	3264	2731	2338	.....	.....	.....	.....	.....
70	5029	4278	3613	3041	2619	.....	.....	.....	.....	.....
75	5602	4792	4016	3390	.....	.....	.....	.....	.....	.....

Length Pole Feet	12 Pounds Final Retention									
	ESTIMATED WEIGHTS IN POUNDS									
	A.S.A. SIZE GROUP									
	1	2	3	4	5	6	7	8	9	10
16	.....	.....	.....	.....	270	225	190	255	190	130
18	.....	.....	435	375	320	280	230	295	225	150
20	675	590	510	445	375	330	275	335	250	180
25	955	860	730	640	540	450	385	450	345	235
30	1320	1145	980	830	715	610	520	575	450	.....
35	1705	1500	1290	1060	920	780	655	725	.....	.....
40	2100	1845	1595	1340	1115	940	810	.....	.....	.....
45	2520	2220	1885	1625	1330	1130	980	.....	.....	.....
50	3000	2590	2200	1890	1570	1325	1150	.....	.....	.....
55	3425	2980	2565	2210	1850	1575	.....	.....	.....	.....
60	4040	3390	2925	2445	2115	1790	.....	.....	.....	.....
65	4640	3860	3365	2815	2410	.....	.....	.....	.....	.....
70	5185	4410	3725	3135	2700	.....	.....	.....	.....	.....
75	5775	4940	4140	3495	.....	.....	.....	.....	.....	.....

Top Dimension Poles

Length Pole Feet	8 Pounds Final Retention					
	ESTIMATED WEIGHTS IN POUNDS					
	TOP DIAMETER, INCHES					
	4-5	5-6	6-7	7-8	8-9	9-10
16	113	164	226	.....	.....	.....
18	146	207	277	.....	.....	.....
20	160	226	306	400	.....	.....
25	226	316	418	536	672	.....
30	.....	408	541	686	855	.....
35	.....	522	682	855	1058	.....
40	.....	.....	857	1048	1278	1537
45	.....	.....	1011	1255	1523	1824
50	.....	.....	.....	1485	1791	2129
55	.....	.....	.....	1734	2082	2463
60	.....	.....	.....	2012	2402	2825
65	.....	.....	.....	2312	2740	3210
70	.....	.....	.....	2636	3111	3628
75	.....	.....	.....	2989	3511	4075

Length Pole Feet	10 Pounds Final Retention					
	ESTIMATED WEIGHTS IN POUNDS					
	TOP DIAMETER, INCHES					
	4-5	5-6	6-7	7-8	8-9	9-10
16	116	169	233	.....	.....	.....
18	150	213	286	.....	.....	.....
20	165	233	315	412	.....	.....
25	233	325	431	553	693	.....
30	.....	421	558	708	882	.....
35	.....	538	703	882	1091	.....
40	.....	.....	873	1081	1319	1586
45	.....	.....	1043	1295	1571	1882
50	.....	.....	.....	1532	1848	2197
55	.....	.....	.....	1789	2148	2541
60	.....	.....	.....	2076	2478	2915
65	.....	.....	.....	2386	2827	3312
70	.....	.....	.....	2720	3210	3744
75	.....	.....	.....	3084	3623	4205

Length Pole Feet	12 Pounds Final Retention					
	ESTIMATED WEIGHTS IN POUNDS					
	TOP DIAMETER, INCHES					
	4-5	5-6	6-7	7-8	8-9	9-10
16	120	175	240	.....	.....	.....
18	155	220	295	.....	.....	.....
20	170	240	325	425	.....	.....
25	240	335	445	570	715	.....
30	.....	435	575	730	910	.....
35	.....	555	725	910	1125	.....
40	.....	.....	890	1115	1360	1635
45	.....	.....	1075	1335	1620	1940
50	.....	.....	.....	1580	1905	2265
55	.....	.....	.....	1845	2215	2620
60	.....	.....	.....	2140	2555	3005
65	.....	.....	.....	2460	2915	3415
70	.....	.....	.....	2805	3310	3860
75	.....	.....	.....	3180	3735	4335

Characteristics of Quality Pine Poles

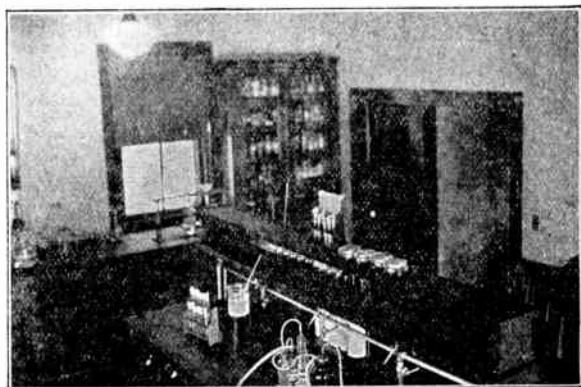
Status of Pine Poles

During a period covering the last several years, more treated pine poles have been used than all other treated poles put together. The utility that uses this commodity therefore is using the most generally accepted pole of the utility field. Important lines that must stand up under greatest stress and for the longest period of time are well built when built with quality-creosoted pine poles. Every sleet storm brings a further degree of proof of this fact. Bearing in mind the salvage value even of an abandoned line of creosoted pine poles, the costliness of individual pole failures, and creosoted pine's comparatively low annual cost, it seems difficult to think of any line not sufficiently important to justify their use.

Life of Creosoted Pine Poles

Whole lines of creosoted pine poles furnished by our supplier 25 and 30 years ago are still in use with practically no replacements, and are obviously good for many years to come. Many estimates have been made of the life to expect, and the Pennsylvania Electric Association, as the result of a study, estimated 35 years. This figure seems conservative with so many International creosoted pine lines now approaching that age and still in good condition. The

oldest lines still standing, and differences in climatic conditions, make it impossible to forecast definitely just what life to expect from the creosoted pine pole.

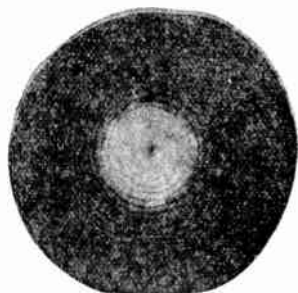


Section of the Chemistry Laboratory  
Scientific Control Is Essential

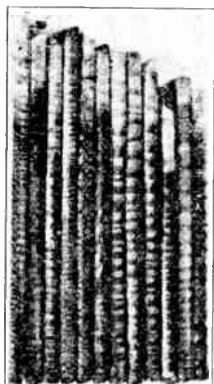
## International Creosoted Pine Poles Characteristics of Quality Pine Poles

Continued

### Value of Penetration



**Uniform Penetration  
Is a Criterion of Good  
Treatment**



**Deep Penetration  
Means Long Life  
For the Poles**

While several factors are important, and particularly the grade of preservative is important, no single factor has such bearing on the life and the quality of creosoted pine poles as the depth of creosote penetration and the uniformity of creosote penetration. Untreated wood of any kind commonly used for poles will decay eventually, and the only preventive is to have the penetration of the preservative deep and uniform and of proper grade. This is accomplished only when skilled technicians analyze the creosote and apply the treating process.

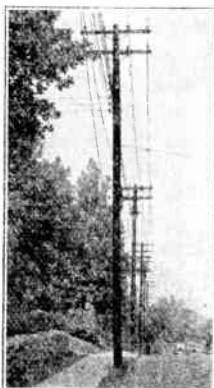
### Strength

The standard for ultimate fiber stresses for the commonly used pole woods has been developed by the Sectional Committee on Wood Poles under the sponsorship of the Telephone Group, American Standards Association. These ultimate fiber stresses quoted verbatim are tabulated below.

Northern White Cedar.....	3600 lbs. per sq. in.
Western Red Cedar.....	5600 lbs. per sq. in.
Chestnut.....	6000 lbs. per sq. in.
Southern Yellow Pine (Creosoted)....	7400 lbs. per sq. in.

### Fire Resistance

Fires that rage across the dry cane fields of Cuba crack insulators, melt steel, and burn untreated wood to ashes, but creosoted pine poles stand the flames. Such is the actual experience. Along almost every railroad right-of-way fire gangs burn the weeds each fall and it is a matter of common record that while untreated posts burn completely, creosoted pine poles are undamaged. Under these severe conditions the creosoted pine pole may take fire and smolder and smoke for a while, but finally the fire smothers itself out, leaving a practically undamaged pole. The action is analogous to a burning oil lamp wherein the wick though it forms the support for the flame is itself consumed very slowly.



The International Creosoted Pine Pole is a clean pole and is widely used in such service as is here shown.

### Appearance and Cleanliness

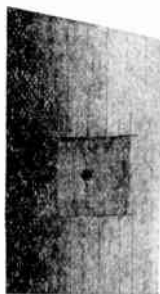
Early in the history of the development of creosoted pine poles some question was raised as to their use on city streets. It was feared that the bleeding of some of the poles might cause trouble if the clothing of pedestrians rubbed against them. No longer are these objections heard either in protest or propaganda. International's care in timber selection, the skill of its production and manufacturing forces, and advances in the science of timber treatment all have contributed to relegate these objections to the background, and to give to the business district and the residential street the security and economy of the creosoted pine pole. Graybar-International poles are in use in the business and residential districts of the largest cities of the United States, and in thousands of the smaller ones. The present-day pole is a clean pole. It is smooth and shapely and stands with the appearance of tapered wrought-iron pipe, rather than that of processed trees.

### Termites

Termites are attracting more and more attention because of their attacks on poles. Formerly termites lived in the forests, but as the forests become depleted they seek shelter elsewhere and find their way into untreated structural wood. Untreated pole lines have been accused of acting as termite highways by means of which they could fly from pole to pole and then to residence; infesting new areas. It is a fact that termites have now been found in all but three states of the United States.

Creosoted pine poles are practically immune to termite attack. Even though checks in the wood may form, they do not go deep enough to expose untreated interior wood that would afford shelter for these insects.


### Improved Roof



The illustration shows a new type of pole roof that many of the utility companies are standardizing upon. It is a one-way roof, cut at an angle of 15°. It is to be recommended.

The advantages of this roof are:

#### 1. Reduces Checking

A roof cut in this  manner leaves a minimum of wood along the center line, the natural cleavage point of the pole. This invites checking. The one-way roof eliminates this disadvantage.

#### 2. Provides Better Drainage

As the roof of a pole weathers, the springwood rings of any species being softer than the summerwood, weather faster, causing the summerwood to stand out in ridges. On the two-way roof these ridges form retaining cups for rain water while on the one-way roof they drain.

#### 3. Conserves the Preservative

Evaporation is a surface phenomenon. There is less surface on a one-way than on a two-way roof.

### Marked Poles

Below is the mark by which Graybar-International poles are identified wherever found. This appears as a date-brand on the side ten feet from the butt of the pole; and is supplemented by an identifying brand on the top and the butt of each pole. These marks are conclusive evidence of our confidence in the quality of the product and the desire to be permanently identified with it.



Beware of unmarked poles. If in a few years they begin to fail, the experience is that it is impossible to tie them definitely to the source of supply. On the other hand when a company consistently uses high grade materials and good preservative treatment which result in long-time dependable service, the company willingly and permanently attaches its name to the product.

## Union Metal Monotube Poles

Monotube Poles are used for the support of trolley strain wires, distribution and transmission lines, traffic signals or any combination of these. For any use wherever a general service pole is required.

Made of high grade open hearth steel, the structure of which is improved by the steel mill operation and still further by the Union Metal Cold-Rolling process. Will not corrode with a heavy loose scale. If oxidation should occur it will develop a fine, dense powder which tends to retard further corrosion.

Monotube Poles have no horizontal joints. Shafts are one continuous tapered tube, with one electric welded vertical seam. One piece construction insures uniform quality, longer life and better appearance.

Before Monotube Poles are painted they are thoroughly cleaned both inside and out to remove scale and other foreign matter. Cleaning the steel prior to painting allows the paint to bond with the steel, materially lengthening the life of the pole. As an added protection, they are painted inside and out.

Either of two methods of anchorage can be employed. The pole may be embedded directly in the ground or concrete or the Union Metal anchor rod construction can be used. Both types of anchorage have their places and with the engineering features of the installation in mind, the customer will choose the proper type.

Embedded poles can be furnished with or without the heavy steel ground sleeve. Where ground sleeves are required, location of sleeve with reference to pole butt must be specified. The ground sleeve is two feet in length and is made from open hearth steel. With this material embodied in the protective collar, maximum safety against corrosion is obtained.

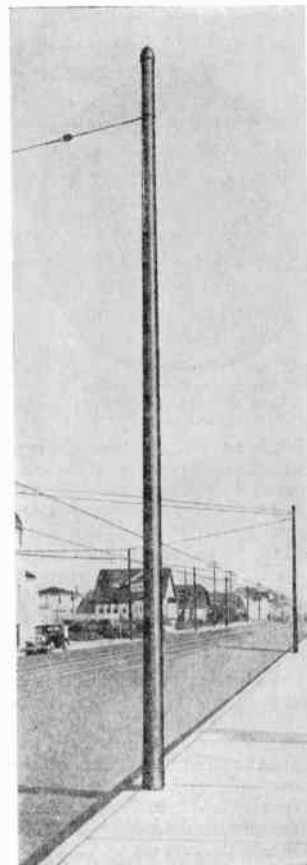
Anchor rod construction follows the methods used in setting heavy machinery and steel frame work for large buildings or towers. No forms are required for the concrete foundation. Customary practice requires a hole of diameter and depth in accordance with the load to be carried.

For the purpose of ornamentation, four ornamental leaves are attached to the base to conceal the projecting foundation bolts and nuts. Removal of the screw holding the leaf in position gives immediate access to the foundation bolt.

Lighter and smaller types of Monotube Poles are manufactured as well as poles of different strengths and height up to and including 75 feet. Complete information on these poles may be obtained by giving strength and height pole required.



Semi-Ornamental Steel Base



With Ground Collar

## Sozol for Wood Preservation

### Brush Treatment

Brush treatment of poles consists in applying hot preservative to the ground line surface of a pole with a brush. This method is not in general use among pole dealers, but is used by operating companies for local treatment.

For effective brush treatment the highest boiling point

coal tar distillate obtainable is recommended. High boiling creosote oils penetrate more readily and are free from black and sticky tars that do not penetrate but concentrate on the outer wood cells. Graybar Electric Sozol has been developed for this work.

### Sozol

Sozol is for brush application for poles and all construction wood. It is a pure high boiling distillate of coal tar, that is, it is a product obtained in a distillation process through the elimination of volatile products of coal tar and this pure coal tar distillate is not adulterated by adding any other substances. It is not a byproduct, that is, the distillation process is primarily for the purpose of securing this particular oil—not for some other distillate of coal tar in which this oil or a modification of it would come off in the distilling process. All creosote wood preserving oils have two faults in a greater or less degree. Either they are so thin and volatile that when applied with a brush or by open tank method, they partially evaporate or leach out and their pre-

servative qualities are thus impaired; or they are adulterated with heavier coal tar oils and these heavier constituents clog up outer cells of the wood and prevent the penetration required for effective treatment.

Sozol is of high specific gravity and greater body and in consequence, is more stable than ordinary pure creosote oils sold for wood preserving. It is not as volatile as these oils; at the same time, it has absolutely no viscous properties which interfere with effective penetration as in the case of mixed oils. In short, it has permanency and so affords the greatest possible continued protection. It is more than a creosote oil, it is a special wood preservative of stability.

Sozol is supplied in drums, barrels and cans.



## Rainier Wood Pin Specifications

**MATERIAL.**—Pins shall be sound, reasonably straight grained, yellow or black locust (or Oak, as called for), free from knots, checks, sap wood, brash-wood, cracks, etc., except as hereinafter specified.

**SAP WOOD.**—Sap wood is permitted on the shoulder of the pin provided it does not extend into the tenon.

**CHECKS.**—Season checks not over 1/8 inch deep are permitted provided they do not appear elsewhere than in the shoulder and lower half of the tenon.

**KNOTS.**—Pins shall be free from loose or unsound knots. Sound knots not exceeding 1/4 inch in diameter are permitted on the shoulder and lower half of the tenon.


**GRAIN.**—The grain of the wood shall be reasonably parallel to the axis of the pin. Irregularities in grain which are wholly confined to the section within one inch of the bottom of the tenon shall be permitted.

**WORM HOLES.**—Worm holes and channels not over 1/8 inch diameter are permitted provided they do not impair the holding power of the thread or the placing of the nail in the pin, and provided that they shall not appear in over 10 per cent of pins in any shipment.

**DIMENSIONS.**—Pins are usually made from unseasoned wood due to difficulty of securing and manufacturing seasoned timber. Pins after seasoning shall be of the dimensions shown in drawing, or as ordered (with allowable variations as shown).


**FLAT SHOULDERS.**—One flat surface is permitted, provided the wood is not cut away to the depth of the shoulder at any point of the circumference; in the bottom one-fourth of the tenon irregularities in shape which do not involve the removal of more than one-quarter of the cross-section called for in the drawing are permitted; provided these defects do not occur in more than 10 per cent of the pins furnished.

**THREADS.**—All pins shall have four threads per inch. The thread shall be smooth and of uniform pitch and shall taper 1/16 inch in diameter to 1 inch in length.




	1 1/2 x 8 Pins Inches	1 1/2 x 9 Pins Inches	Allowable Variation Inches
L—Length Pin	8	9	1/4
F—Length Top	4	5	1/4
E—Length Tenon	4	4	1/4
D—Diameter Thread	63/64	63/64	1/64
C—Length Thread	2 1/2	2 1/2	1/4
S—Diameter Shoulder	1 1/2	1 3/4	1/16
T—Diameter Tenon on Top	1 3/32	1 1/32	1/64
M—Diameter Tenon at Middle	1 1/4	1 1/2	1/32
B—Diameter Tenon at Bottom	1 3/16	1 7/16	1/16

### Standard Pins




M	DIMENSIONS, INCHES		Locust Wt., Lbs. per 1000
	L	D	
1 1/4	8	1	325
1 1/2	9	1	450

### Transposition Pins




1 1/4	9	1	400
1 1/2	10	1	500

### High Tension Pins



1 1/2	9	1 3/8	500
1 1/2	11	1 3/8	550
1 1/2	12	1	600
1 1/2	12	1 3/8	650
1 3/4	12	1	1200
1 3/4	12	1 3/8	1300
1 3/4	10 3/8	1	1000
1 3/4	10 3/8	1 3/8	1100
1 3/4	14	1 3/8	1400

### Duplex Pins



1 1/4	11 1/2	1	500
1 1/4	12	1	550
1 1/2	12	1	650

Prices upon application.

## Rainier Bracket and Pole Step Specifications

**MATERIAL.**—Sound, reasonably straight grained, Oak, free from knots, checks, sap wood, etc., except as hereinafter specified.

**SAP WOOD.**—Permitted up to 25 per cent of volume of bracket.

**CHECKS.**—Season checks not over 1/8 inch deep are permitted provided they do not appear within two inches of the thread.

**KNOTS.**—Brackets shall be free from loose or unsound knots. Sound knots not exceeding 1/2 inch in diameter permitted below the shoulder but not in lower 3-inch section of bracket.

**GRAIN.**—Grain of the wood shall be reasonably parallel to the axis of the bracket.

**WORM HOLES.**—And channels not over 1/8 inch diameter are permitted provided they do not impair the holding power of the thread, or the nail holes; and provided that they shall not appear in over 10 per cent of the brackets furnished in any shipment.


**DIMENSIONS.**—After seasoning, dimensions with allowable variations shall be as shown; Wane allowed in body of bracket not exceeding 1/4 inch; irregularities in body of bracket not to exceed 10 per cent of volume.

**THREADS.**—All brackets shall have four threads per inch. The thread shall be smooth and of uniform pitch, and shall taper 1/16 inch in diameter to 1 inch in length.

**MANUFACTURE.**—All workmanship shall be of best commercial grade.


**STANDARD PACKAGE.**—Nos. 1, 3, 4 and 5, 25 per bundle. Nos. 2 and 6, 20 per bundle.

**CREOSOTE OIL DIP TREATMENT.**—It is the practice to furnish oak pins and brackets "dipped in red paint," without extra charge. This treatment is of little or no protective value, and we recommend instead a dipping in hot Creosote Oil, at a slight additional charge. Not only does this make a clean bracket, but gives a preservative value and a lasting effect.



L=Length Bracket	As ordered	1/4
D=Diameter Thread	63/64	1/64
C=Length Thread	2 1/2	1/4
W=Width	As ordered	1/8
S=Height at Shoulder	As ordered	1/8

### Brackets



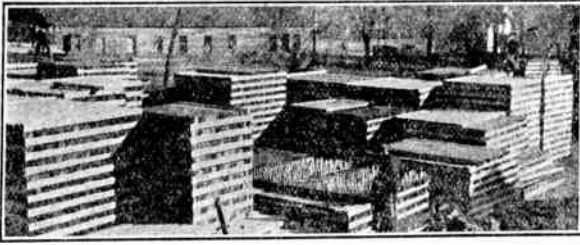
	DIMENSIONS				Wt. Lbs. per 1000
	W	S	L	D	
Standard No. 4	1 1/2	2	10	1	500
Standard No. 1	1 1/2	2	12	1	650
Standard No. 3	1 1/2	2 1/4	12	1	700
Standard No. 5A.T.&T.	1 5/8	2	12	1	650
Standard No. 2	2	2 1/4	12	1	850
Standard No. 6 W.U.	2	2 3/8	12	1	850
Standard No. 7 W.U.	2	2 3/4	12	1	950

### Pole Steps

Standard	1 1/2	2	7	450
Western Union	1 3/4	2 3/4	7	650



## Rainier Wood Crossarms



The prime requisites in a crossarm are lightness, strength and durability. Some engineers stress one quality and some another, but Rainier Fir is the best answer for all sorts of uses and conditions. However, we are equally able to furnish long leaf yellow pine crossarms, and creosoted arms, in either fir or yellow pine.

Rainier fir crossarms do not require painting or the use of any preservative; are more than double the necessary strength with a large "factor of safety"; they live in actual service for many years.

### Treatment of Rainier Arms

In some localities it is occasionally found necessary to color crossarms so as to distinguish them from arms used for other purposes. If a color is necessary the arms should be dipped in the proper stain, which our mills are prepared to do.

We recommend, however, that a Rainier arm be dipped in a hot solution of pure distillate creosote oil, if that will answer the purpose of color. This treatment tends to prevent an arm from checking and to protect it from woodpeckers, and from the inroads of termites, etc. Unless color is demanded, this expense is usually not warranted.

Short-leaf yellow pine (and long-leaf sapwood) crossarms, should be creosoted (pressure treatment) before being put into service; this treatment prolongs the life of the arms for many years, but great care should be exercised that only pure distillate oil is used and the treatment given by a reliable creosoting company.

### Arms of Special Size and Manufacture

A good many public utilities require from time to time small lots of arms of special size and manufacture, that is, other than those hereinafter listed as standard. We will be glad at any time to stock any special arm for a customer under a special contract arrangement, and any of our representatives will be glad to go into this matter fully on request. We have also at Chicago, Minneapolis, Kansas City, Mo., Texarkana, Tex., Wilmington, N. C., New Orleans, La., Centralia, Wash., and Newark, N. J., large stocks of blank arms, which can be cut to length and bored according to your special requirements. This is merely another link in the chain of Graybar Electric service on crossarms.

All arms bored for one  $\frac{5}{8}$ -inch center bolt and  $\frac{3}{8}$ -inch brace bolts unless otherwise specified, except as shown in "Standard" table.

### Minimum Carload Weight

Fir from Pacific Coast Mills, 38,000 pounds. Small cars are scarce and weight of at least 50,000 pounds should be figured on. Cars to contain as high as 90,000 pounds can be had. Smaller cars are available in the Southern Yellow Pine Regions—minimum weight, 34,000 pounds.

All dimensions are subject to the usual manufacturing variations; crossarms long in stock show some shrinkage from original dimensions.

## Rainier Crossarm and Conduit Specifications

### Rainier Fir Crossarms

Material shall be sound, live, yellow Douglas fir; close-grained (at least eight rings per inch); straight grained (not out of parallel to edge of arm in central section more than five degrees).

Free from rot, dote, loose heart, loose or rotten knots, shakes and splits.

Warp up to  $\frac{1}{8}$ -inch off-set per lineal foot is allowed; also sound knots up to 1-inch diameter, but not at pin holes or in clusters. Pitch pockets up to 8 inches in length, season checks up to 1 inch in depth, and sap wood up to 25 per cent of volume of arm is also allowed.

Manufacture of best commercial practice. Kiln dried in sizes up to 4x5 inches finished; planed on all four sides; pin holes accurately centered, smooth, and not badly broken out by bits in boring; dimensions as shown, with commercial variations.

### Western Standard Grade Fir

This grade covers all crossarms up to 4x5 inches, inclusive, finished size either way.

The arms shall be: reasonably straight grained, well manufactured from sound, live seasoned lumber (green lumber prohibited) 75 per cent heart, by volume; free from rot, dote, loose-heart, loose or unsound knots, shakes, splits, boxed heart, warp in excess of  $\frac{1}{8}$ -inch off-set per foot, sound knots in clusters or larger than  $1\frac{1}{4}$  inches in diameter, pitch-pockets more than 8 inches long, season checks more than 1 inch deep and any other defect that seriously impairs strength.

### Standard Transmission Grade Fir

For arms larger than 4x5 inches, either way: reasonably straight grained and well manufactured from sound, live lumber, of medium rate of growth, boxed heart excluded.

Free from shakes and wormholes; and sap wood in excess of 30 per cent in volume of arm.

Sound knots admitted, not clustered, up to  $1\frac{1}{2}$  inches in diameter, and pitch pockets not over 8 inches long.

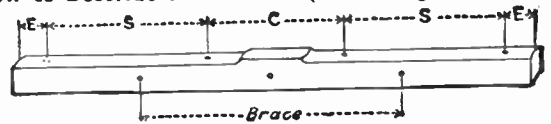
### Long Leaf Yellow Pine

Genuine Long-Leaf Yellow Pine, guaranteed every arm at least  $\frac{1}{2}$  heart in volume, and free from knots (except small, sound knots, not over one inch in diameter), or other defects that would impair the strength of the arm.

### Creosoted Crossarms and Conduit

Free from large, unsound or loose knots, or other defects which would impair strength; creosoted steam and vacuum treatment—dead oil of coal tar under pressure—either 12 lbs. per cu. ft. (full cell) or 8 lbs. per cu. ft. (empty cell) as ordered.

### How to Describe a Crossarm (In Placing Your Order)



NOTE.—C, S, E—center spacing of pin holes.

STATE—1—Quantity wanted.

2—Material and quality (or grade).

3—Treatment (if any).

4—Width, in inches (and fraction).

5—Height, in inches (and fraction).

6—Length, in feet and inches.

7—Number of pin holes.

8—Size of pin holes.

9—Spacing between pin holes (center-side-end).

10—Size center bolt hole.

11—Size brace bolt holes.

12—Space between brace bolt holes.

For example, the Standard N.E.L.A. 6-pin crossarm is described—“Rainier Fir, unpainted,  $3\frac{1}{2}$ "x $4\frac{1}{2}$ "x8", bored for six  $1\frac{1}{16}$ " pin holes, spaced 30" center,  $14\frac{1}{2}$ " sides, 4" end, one  $1\frac{1}{16}$ " center bolt hole, two  $\frac{3}{8}$ " brace bolt holes 38" apart.”

### Important

In ordering crossarms, be very careful to specify just what is wanted, and, if other than standard boring, send sketch or blue print with order. Arms specially made are of no use for general stock, and cannot be taken back if mistake is made in ordering.

Orders for special arms are not subject to cancellation.

## Rainier Wood Crossarms Electric Light Arms, 3 1/4 x 4 1/4 In.

Cat. No.	Size and Length	PIN HOLES			Center Bolt Hole In.	Brace In.	WEIGHT POUNDS PER ARM				
		Center	SPACINGS, IN. Sides	Ends			Size In.	Fir	Yellow Pine Untreated	8 Lbs. YELLOW PINE CREOSOTED	12 Lbs.
1	3 ft. 2 pin	28	...	4	1 17/32	5/8	25	10.62	13.2	15.24	15.93
2	4 ft. 4 pin	16	12	4	1 17/32	5/8	28	14.16	17.6	20.32	21.24
3	5 ft. 4 pin	18	17	4	1 17/32	5/8	28	17.7	22	25.40	26.55
4	6 ft. 4 pin	22	21	4	1 17/32	5/8	32	21.24	26.4	30.48	31.82
5	6 ft. 6 pin	16	12	4	1 17/32	5/8	32	21.24	26.4	30.48	31.82
6	8 ft. 6 pin	18	17 1/2	4	1 17/32	5/8	32	28.32	35.2	40.64	42.48
7	8 ft. 8 pin	16	12	4	1 17/32	5/8	32	28.32	35.2	40.64	42.48
8	8 1/2 ft. 10 pin	16	9 3/4	4	1 17/32	5/8	32	30.09	37.4	43.18	45.14
9	10 ft. 8 pin	17 1/2	15 3/4	4	1 17/32	5/8	42	35.4	44	50.80	53.10
10	10 ft. 10 pin	16	12	4	1 17/32	5/8	42	35.4	44	50.80	53.10
11	10 ft. 12 pin	16	9 5/8	3 7/8	1 17/32	5/8	42	35.4	44	50.80	53.10

### R. S. A. (Railway Signal Association) Arms, 3x4 1/4 In.

21	6 ft. 4 pin	20	22	4	9/16	1 11/16	...	19.8	24.6	28.44	29.70
22	8 ft. 6 pin	19	17 1/4	4	9/16	1 11/16	...	26.4	32.8	37.92	39.60
23	10 ft. 8 pin	19	15 1/2	4	9/16	1 11/16	...	33	41	47.40	49.50
24	10 ft. 10 pin	16	12 3/8	2 1/2	9/16	1 11/16	...	33	41	47.40	49.50

### Western Union Arms, 3x4 1/4 In.

25	6 ft. 6 pin	20	11 1/2	3	9/16	2 1/2	...	19.8	24.6	28.44	29.70
26	8 ft. 8 pin	21	11 1/2	3	9/16	2 1/2	...	26.4	32.8	37.92	39.60
27	10 ft. 10 pin	22	11 1/2	3	9/16	2 1/2	...	33	41	47.40	49.50

### Pony Telephone Arms, 2 3/4 x 3 3/4 In.

31	24 in. 2 pin	17	...	3 1/2	1 9/32	5/8	...	5.4	6.5	7.50	7.84
32	30 in. 2 pin	23	...	3 1/2	1 9/32	5/8	...	6.75	8.125	9.38	9.80
33	36 in. 2 pin	29	...	3 1/2	1 9/32	5/8	25	8.1	9.75	11.25	11.76
34	42 in. 4 pin	16	9 1/2	3 1/2	1 9/32	5/8	28	9.45	11.375	13.13	13.72
35	62 in. 6 pin	16	9 3/4	3 1/2	1 9/32	5/8	28	13.95	16.8	19.38	20.25
36	82 in. 8 pin	16	9 3/4	3 3/4	1 9/32	5/8	28	18.45	22.2	25.63	26.79
37	102 in. 10 pin	16	9 3/4	4	1 9/32	5/8	28	22.95	27.625	31.88	33.72
38	120 in. 12 pin	16	9 5/8	3 7/8	1 9/32	5/8	28	27	32.5	37.50	39.20

### N. E. L. A. Arms, 3 1/2 x 4 1/2 In.

41	3 ft. 2 in. 2 pin	30	...	4	1 17/32	1 11/16	28	12 2/3	15.83	19.00	19.79
42	5 ft. 7 in. 4 pin	30	14 1/2	4	1 17/32	1 11/16	38	22 1/3	27.92	33.50	34.90
43	8 ft. 6 in. 6 pin	30	14 1/2	4	1 17/32	1 11/16	38	32	40	48.00	50.00
44	9 ft. 2 in. 8 pin	30	12	4	1 17/32	1 11/16	38	36 2/3	45.83	55.00	57.29

### N. E. L. A. (Light) Arms, 3 1/4 x 4 1/4 In.

51	3 ft. 2 in. 2 pin	30	...	4	1 17/32	1 11/16	28	11.2	13.93	16.09	16.82
52	5 ft. 7 in. 4 pin	30	14 1/2	4	1 17/32	1 11/16	38	19.76	24.57	28.36	29.65
53	8 ft. 6 in. 6 pin	30	14 1/2	4	1 17/32	1 11/16	38	28.32	35.2	40.64	42.48
54	9 ft. 2 in. 8 pin	30	12	4	1 17/32	1 11/16	38	32.45	40 1/3	46.57	48.68

### New England Arms, 3 1/4 x 4 1/4 In.

61	3 ft. 2 pin	30	...	3	1 17/32	1 11/16	33	10.62	13.2	15.24	15.93
62	5 ft. 6 in. 4 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	19.47	24.2	27.94	29.20
63	7 ft. 9 in. 6 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	27.43	34.1	39.37	41.15
64	10 ft. 8 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	35.4	44	50.80	53.10

### New England Power Arms, 3 3/4 x 4 3/4 In.

71	3 ft. 2 pin	30	...	3	1 17/32	1 11/16	33	13.98	17	20.79	21.75
72	5 ft. 6 in. 4 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	25.63	31.17	37.12	39.88
73	7 ft. 9 in. 6 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	36.12	43.92	53.71	56.19
74	10 ft. 8 pin	30	13 1/2	4 1/2	1 17/32	1 11/16	36	46.6	56.67	69.30	72.50

### Pacific Arms, 3 1/4 x 4 1/4 In.

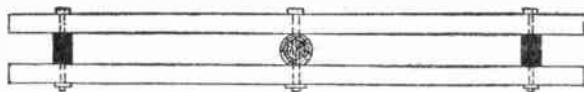
81	3 ft. 2 pin	28	...	4	1 17/32	5/8	32	10.62	13.2	15.24	15.93
82	5 ft. 4 pin	28	12	4	1 17/32	5/8	32	17.7	22	25.40	26.55
83	7 ft. 6 pin	28	12	4	1 17/32	5/8	32	24.78	30.8	35.56	37.17
84	9 ft. 8 pin	28	12	4	1 17/32	5/8	42	31.86	39.6	45.72	47.79
85	11 ft. 10 pin	28	12	4	1 17/32	5/8	42	38.94	48.4	55.88	58.41

Any change required from standard spacings, pin holes or bolt holes as here given, must be distinctly specified on the order.

### Rainier Special Crossarms

Cat. No.	Size Inches	WEIGHT, POUNDS PER LINEAL FOOT				Cat. No.	Size Inches	WEIGHT, POUNDS PER LINEAL FOOT			
		Fir	Yellow Pine Untreated	8 Lbs. YELLOW PINE CREOSOTED	12 Lbs.			Fir	Yellow Pine Untreated	8 Lbs. YELLOW PINE CREOSOTED	12 Lbs.
A	2 3/4 x 3 3/4	2.7	3.25	3.75	3.92	J	3 3/4 x 4 3/4	4.66	5.67	6.93	7.25
B	3 x 3 3/4	2.92	3.6	4.16	4.35	K	3 3/4 x 5	4.72	5.95	7.35	7.65
C	3 x 4	3.11	3.9	4.50	4.70	L	3 3/4 x 5 3/4	6	6.8	8.40	8.72
D	3 x 4 1/4	3.3	4.1	4.74	4.95	M	4 x 5	5.2	6.33	7.80	8.11
E	3 1/4 x 4 1/4	3.54	4.4	5.08	5.31	N	4 1/4 x 5 1/4	6.19	7	8.63	9.00
F	3 1/4 x 4 1/2	3.74	4.7	5.43	5.67	O	4 1/2 x 5 1/2	6.83	7.63	9.41	9.82
G	3 1/2 x 4 1/2	4	5	6	6.25	P	4 x 6	6.6	7.52	9.27	9.67
H	3 1/2 x 4 3/4	4.2	5.3	6.3	6.62	Q	4 3/4 x 5 3/4	7.5	8.5	10.48	10.92
I	3 1/2 x 5	4.43	5.57	6.83	7.14	R	5 x 6	8.2	9.29	11.21	11.95

**Rainier Spacer Blocks**



The Rainier Spacer Block insures a more rigid and stronger structure where double-arming is necessary.

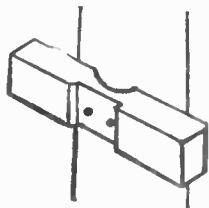
Has a bearing surface of its entire cross-section as compared with the width of washer used in other methods.

Stops the use of make-shifts, and the insertion of part-life material in a full-life structure.

Only two bolts to tighten, not four.

In two sizes to accommodate large or small pole tops— $3\frac{1}{4} \times 4\frac{1}{4} \times 10$  inches and  $3\frac{1}{4} \times 4\frac{1}{4} \times 16$  inches.

**Rainier Kicker Arms**



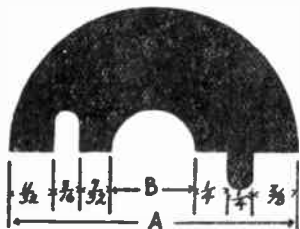
Stops sawing up new crossarms. No gains to cut; no holes to bore in the pole. Just drive two lag screws to install.

Distance between front and back of bracket,  $3\frac{1}{4}$  inches.

Size,  $3\frac{1}{4} \times 4\frac{1}{4} \times 15$  inches.

Weight, 3.6 pounds each.

**Rainier Reversible Tree Moulding**

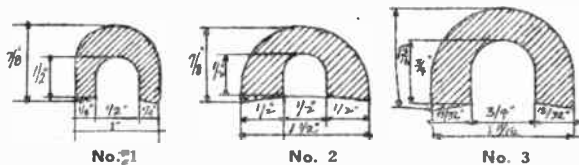


Rainier Reversible Tree Moulding is made from kiln dried fir and then impregnated in high pressure retorts with a moisture resisting preservative.

Comes in 2 to 10-foot lengths.

No.	DIMENSIONS, INCHES		No.	DIMENSIONS, INCHES	
	A	B		A	B
1	2	$\frac{1}{4}$	5	$2\frac{1}{16}$	$\frac{9}{16}$
2	$2\frac{1}{16}$	$\frac{5}{16}$	6	$2\frac{1}{2}$	$\frac{3}{4}$
3	$2\frac{1}{8}$	$\frac{3}{8}$	7	$2\frac{3}{4}$	1
4	$2\frac{1}{4}$	$\frac{1}{2}$	...	...	...

**Rainier Fir Moulding For Ground Wires**



Furnished unpainted, painted green, or dipped in hot creosote oil as ordered. Furnished without fittings.

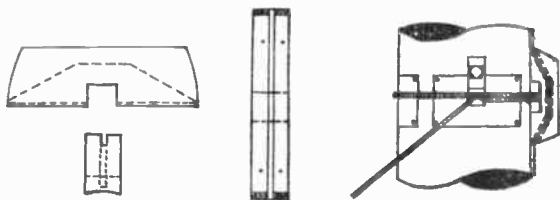
In 8-foot lengths; 200 feet to a bundle.

No. 1, weight per 1000 feet, 120 pounds.

No. 2, weight per 1000 feet, 180 pounds.

No. 3, weight per 1000 feet, 310 pounds.

**Rainier Pass-Over Blocks**



Prevents electrical contact between wrapped guy strand and ground wire, and gives a full inch separation at all points. No metal strap is needed as it is nailed in place.

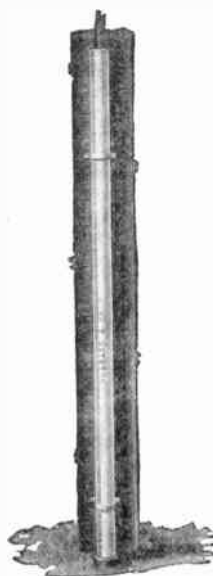
Dimensions,  $2\frac{1}{16} \times 3 \times 8$  inches. Packed 10 in a bundle.

Shipping weight per 100, 100 pounds.

Prices Upon Application

**Hubbard U-Cable Guards and Straps**

Hot Galvanized



When telephone or power cables enter the ground at the base of a pole or side of a building they should be protected by U-cable guards.

The U-cable guards are made from No. 14 gauge sheet steel and are formed into a U shape. This shape provides the additional strength necessary against collision and the rounded surface protects the pedestrian.

The straps are made from flat steel and are shaped to fit the U-cable guards.

**U-Cable Guards**

Cat. No.	Lrth. Ft.	Diam. In.	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
7531	6	$1\frac{1}{8}$	5	450	\$66.60
7532	5	$2\frac{3}{16}$	5	750	105.80
7533	8	$2\frac{3}{16}$	5	1225	169.20
7534	5	$3\frac{3}{16}$	5	1360	154.20
7535	8	$3\frac{3}{16}$	5	1750	246.30

**Mounting Straps**

Cat. No.	Size Steel Inches	Used with Cable Guards No.	Diam. Holes Inches	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
7538	$\frac{1}{8} \times \frac{3}{4}$	7531	$\frac{9}{32}$	100	13	\$5.90
7439	$\frac{1}{8} \times \frac{3}{4}$	7532-3	$\frac{9}{32}$	150	21	8.60
7540	$\frac{1}{16} \times 1$	7534-5	$1\frac{1}{32}$	100	55	18.00

**Hubbard Conduit Straps**

Hot Galvanized



For attaching standard 2 or 3-inch vertical conduit to wood poles. Nos. 8925 and 8926 are made of  $1\frac{1}{2}$ -inch steel and have holes for  $\frac{3}{8}$ -inch lag screws. Nos. 8927 and 8928 are made of  $1\frac{1}{4}$ -inch steel with  $\frac{1}{16}$ -inch holes.

Cat. No.	Width Inside In.	Nominal Size Conduit, In.	Type	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
8925	$2\frac{1}{2}$	2	Single	10	78	\$13.70
8926	$3\frac{1}{2}$	3	Single	100	100	17.90
8927	$4\frac{3}{4}$	2	Double	10	106	18.70
8928	7	3	Double	10	150	26.70

**Hubbard Copperweld Staples**

The larger size staples are used for attaching ground wire moulding to pole and the smaller size for attaching insulated or bare grounding wires to the pole.

**Rolled Point Staples**

Cat. No.	Per 100	Ht. In.	Width Inside In.	Thick Wire In.	Std. Pkg.	Ship. Wt., Lbs. per 100
7493	\$ .70	$1\frac{1}{4}$	$\frac{1}{4}$	.114	500	1
7494	.85	$1\frac{1}{2}$	$\frac{3}{16}$	.144	500	$1\frac{1}{2}$
7495	.95	$1\frac{3}{4}$	$\frac{3}{8}$	.144	500	2
7496	1.15	2	$\frac{1}{2}$	.162	500	$2\frac{1}{4}$
*7521	1.55	2	$1\frac{1}{16}$	$\frac{3}{16}$	100	4
*7522	3.10	3	$1\frac{1}{16}$	$\frac{1}{4}$	100	8

**Cut Point (Fence) Staples**

Cat. No.	Price per 100 lbs.	Ht. In.	Width Inside In.	Thick Wire In.	Std. Pkg.	Ship. Wt., Lbs. per 100
7651	†\$25.00	$1\frac{3}{8}$	$\frac{1}{2}$	.162	6400	$1\frac{3}{4}$
7652	† 25.00	$1\frac{1}{2}$	$\frac{3}{8}$	.162	5600	2
7653	† 25.00	2	$\frac{1}{4}$	.162	4600	$2\frac{1}{4}$
7654	† 25.00	$1\frac{1}{4}$	$\frac{3}{16}$	.114	12400	$\frac{3}{4}$



## Spaulding Universal Tree Wire Guards



Guard Ready to Wrap Around Wire

Guard Installed on Wire

These guards are made of 2 materials. For the inside of the tube a flexible bakelized fabric is provided, of high dielectric strength, affording perfect electrical protection. This is an inert material which will not oxidize nor deteriorate after long-time exposure.

Several turns of the flexible insulating material enclose the wire. Overlying this inner protection is a tough outside shell of glass-hard finish. This shell is built up of strong, tough fabric, bonded with phenolic varnish for density and resistance to abrasion. Will not abrade or wear through.

Economical in that it is not necessary to cover the wire from one pole to another in order to protect a section of it. Also has the constant gripping action which maintains the tightness of the convolutions and prevents any longitudinal displacement.

### For Insulation and Abrasion For 2600 Volts

Type	Per 100	Size Wire	DIMENSIONS, INCHES		
			Outside Shell	Flex. Sec.	Lgth.
A	\$70.00	No. 6 to No. 2 W. P. 3-Brd.	4½	6	38
		No. 1 to No. 00 Str. Bare .30 to 40-Inch Diam.			
B	83.00	No. 6 to No. 2 W. P. 3-Brd.	5	12	38
		No. 1 to No. 00 Str. Bare .30 to 40-inch Diam.			
C	76.00	No. 8 W.P. 3-Brd.	4	9	38
		No. 8 to No. 2 Sol. Bare .16 to 26-Inch Diam.			
D	96.00	No. 1 to No. 0 W. P. 3-Brd.	7	17	38
		No. 000 to No. 250,000 cir. mil. Str. Bare .50 to .66-Inch Diam.			
E	110.00	No. 00 to No. 0000 W. P. 3-Brd.	9	22	38
		No. 250,000 to No. 500,000 cir. mil. Str. Bare .66 to .80-Inch Diam.			
K	110.00	No. 8 to No. 2 W. B. 3-Brd.	7	22	38
		No. 8 to No. 00 Sol. Bare .13 to .42-Inch Diam.			

### For Abrasion Only

Provides approximately 2 wraps around the wire. Furnished in 1½, 2 and 10-foot lengths.

Type	LENGTH, FEET			Approx. I.D. Inches
	1½	2	10	
Tm	\$17.00	\$20.00	\$90.00	5/16
Tn	20.00	24.00	99.00	1/2
Tp	23.00	28.00	130.00	5/8
Tr	26.00	32.00	150.00	3/4
Ts	29.00	36.00	170.00	1

In ordering, specify type and length required.

Intermediate length guards will be charged at the price for the next higher standard lengths.

### Accessories

Double faced adhesive tape is furnished with each order of tree wire guards to secure guard to wire for easiest installation. A set of installation directions is wrapped with each guard.

### Fibre Installation Tool



A special tool of insulating fibre for installation of Spaulding Tree Wire Guards (Types A to K inclusive). The installation of these guards should not be attempted without the use of this tool.

With the use of this tool, these guards can be completely installed in 5 minutes or less, even in extremely cold weather.

Each..... \$ .60

For installing abrasion guards in 10-foot lengths, a special tool is made for opening the guard and applying it to the wire.

## Hubbard Guy Wire Protectors

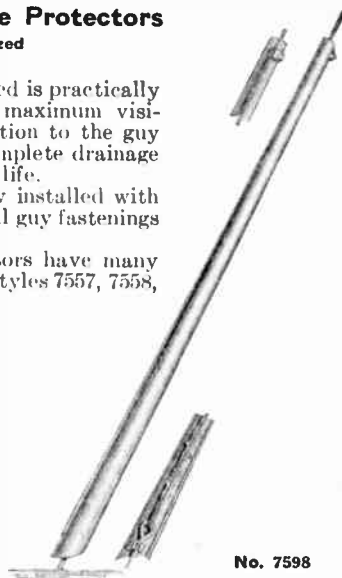
Hot Galvanized

The protector illustrated is practically full-round and provides maximum visibility, safety and protection to the guy wire and the public. Complete drainage and ventilation give long life.

Simply and permanently installed with 2 bolts. Easy access to all guy fastenings at all times.

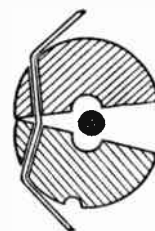
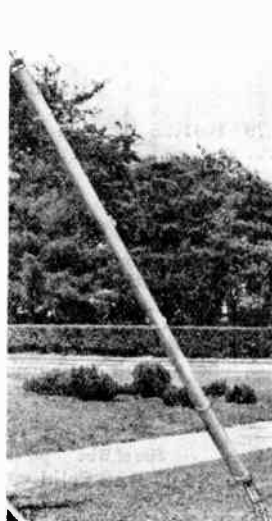
Nos. 7597-7598 protectors have many advantages over former styles 7557, 7558, 7559, included in the listing and which can still be furnished.

Cat. No.	Per 100	Lgth. Ft.	Ship. Wt. Lbs. per 100
7557	\$120.00	7	1100
7558	135.00	8	1250
7559	135.00	8	1360
7597	120.00	7	1000
7598	135.00	8	1100

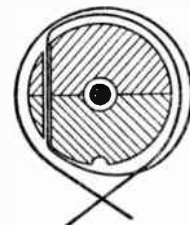


No. 7598

## Rainier Jiffy Guy Wire Guards



Lineman Opens Guard and Slips It Over the Guy Strand. Fastening Wires Act as Hinges



Correct Method to Wrap Fastening Wires. The Twist Will Be at the Safety Groove

These guards assembled are hollow wooden cylinders, reinforced mechanically by the strand itself. The built-up construction adds to natural resilience of the wood. Held firm and compact by double wrapped, copperweld tie wires.

Made from clear, straight grained Douglas Fir.

Covered with aluminum paint which catches the eye and makes them highly visible at night.

Hollow wooden cylinder forms a chimney around the strand. At practically all times there is a natural draft of air which will dry both the strand and the inner wall of the guard.

These guards insulate the strand. There is no metallic contact even with the tie wires. This is of importance where line accidents cross the strand with conductor.

Guards can be included in carloads with crossarms; tie wires will not be affixed but will be sent parcel post.

Packed in standard bundles of 6.

7-Foot Length, Weight, 6½ Pounds.....each .....  
8-Foot Length, Weight, 7½ Pounds.....each .....



**Hubbard Copperweld Ground Rods**



Briefly, the advantages derived from the use of Copperweld Ground Rods are:

Smaller diameter, less earth displaced, easier to drive—a 4-pound hammer, with light blows, will drive the rod.

Long life, protection from rusting, welded copper.

Little time and field labor are required for installing Copperweld Rods and attaching the grounding wire.

These ground rods are listed as standard by the Underwriter's Laboratories.

Cat. No.	Per 100	Diameter Inches	Length Feet	Ship. Wt., Lbs. per 100	Cat. No.	Per 100	Diameter Inches	Length Feet	Ship. Wt., Lbs. per 100
*9415	\$34.62	3/8	5	200	*9446	\$191.94	3/4	6	930
*9416	42.03	3/8	6	240	*9447	222.73	3/4	7	1085
*9425	77.34	1/2	5	340	†9448	252.32	3/4	8	1240
*9426	90.89	1/2	6	410	†9449	283.11	3/4	9	1395
*9427	104.45	1/2	7	480	*9450	312.71	3/4	10	1550
*9428	118.01	1/2	8	550	†9452	374.29	3/4	12	1860
*9429	131.54	1/2	9	615	†9455	465.97	3/4	15	2425
*9430	145.09	1/2	10	685	*9460	617.01	3/4	20	3100
*9435	115.53	5/8	5	535	†9466	333.62	1	6	1650
*9436	136.47	5/8	6	640	†9467	387.82	1	7	1925
*9437	157.43	5/8	7	750	*9468	442.02	1	8	2200
*9438	178.36	5/8	8	855	†9469	496.22	1	9	2475
*9439	199.30	5/8	9	960	†9470	550.43	1	10	2750
*9440	220.26	5/8	10	1070	†9472	658.83	1	12	3300
†9442	262.73	5/8	12	1280	†9474	820.26	1	15	4130
†9444	326.19	5/8	15	1605	†9479	1091.25	1	20	5500
*9445	161.15	3/4	5	775					

Standard package: \*10; †5.

**Hubbard Mechanical Ground Rod Clamps**

For attaching either solid or stranded grounding wires to ground rods, galvanized pipe, or sub-station switching arms. The clamps are made of high grade, corrosion-resisting, non-ferrous metal.

Five wrenches furnished with each 100 clamps; No. 9496, one wrench with each 5 clamps.



Cat. No.	Per 100	Size Rod Inches	Size of Wire	Ship. Wt., Lbs. per 100
†9490	\$23.13	3/8	4-17 B&S Solid	25
†9491	28.95	1/2	4-14 B&S Solid	30
†9492	42.88	5/8	3/8" Strand to	55
†9493	55.38	3/4	8 B&S Solid	75
†9495	62.56	1	4/0 Strand to	90
†9496	100.61	*1 1/4	4 B&S Solid	120

\*I.D. pipe.

Standard package: †100; †50.

**Hubbard Ground Rod Moulds**



Hubbard Ground Rod Moulds are used for making cast solder connections on ground rods. Both solid and stranded grounding wires can be attached to the ground rod by this method.

The moulds are drawn from sheet brass and are tinned for easy soldering. The collar fits snugly to the ground rod and prevents solder leakage.

Cat. No.	Per 100	DIAMETER, INCHES		Std. Pkg.	Wt., Lbs. per 100
		Ground Rod	Top of Mould		
9480	\$5.80	3/8	15/16	25	2.75
9481	6.00	1/2	1 1/16	25	3.00
9482	6.25	5/8	1 3/16	25	3.25
9483	6.45	3/4	1 5/16	25	3.50
9485	6.65	1	1 7/16	25	3.75

**Hubbard Ground Rods**

Without Copper Wire—Hot Galvanized



Made of stiff, high carbon open hearth steel, with long sharp points. Unwired rods are provided with holes through the upper ends for attaching grounding wires. These holes are located one inch from end of rods.

Cat. No.	Diam. Inches	Length Feet	Std. Pkg.	Wt., Lbs. per 100	Price per 100
9555	3/8	5	25	185	\$30.73
9556	3/8	6	25	223	35.70
9565	1/2	5	25	300	48.18
9566	1/2	6	20	360	56.45
9567	1/2	7	20	420	64.72
9576	5/8	6	10	600	82.90
9577	5/8	7	10	700	95.44
9578	5/8	8	10	800	107.98
9598	1	8	3	2133	275.00

With Copper Wire—Hot Galvanized



No. 12 wire soldered to rod; free end, 5 inches long.

Cat. No.	Diam. Inches	Length Feet	Std. Pkg.	Wt., Lbs. per 100	Price per 100
9505	1/2	5	25	332	\$64.28
9506	1/2	6	20	380	72.52
9516	5/8	6	10	600	101.20
9538	1	8	3	2200	314.85

**Hubbard Anchor Rods**

Hot Galvanized



The eyes are drop-forged. Rods, 3/4-inch diameter and under, have 3 1/2 inches of rolled threads. The 1 and 1 1/4-inch rods have 3 1/2 inches of cut threads. Rods with two eyes furnished if desired for special construction. All prices include square nut, but no washers.

Cat. No.	Diameter Inches	Length Feet	SIZE EYE, INCHES	Std. Pkg.	Wt., Lbs. per 100	Price per 100
7405	1/2	5	3/4	1	20	\$64.15
7406	1/2	6	3/4	1	10	375
7407	1/2	7	3/4	1	10	480
7415	5/8	5	1 1/2	2	10	540
7416	5/8	6	1 1/2	2	10	650
7417	5/8	7	1 1/2	2	10	740
7418	5/8	8	1 1/2	2	10	850
7426	3/4	6	1 1/2	2	10	910
7427	3/4	7	1 1/2	2	5	1060
7428	3/4	8	1 1/2	2	5	1220
7429	3/4	9	1 1/2	2	5	1360
7430	3/4	10	1 1/2	2	5	1520
7438	1	8	1 1/2	2	3	2270
7440	1	10	1 1/2	2	3	2730
7442	1	12	1 1/2	2	3	3200
7444	1 1/4	10	1 3/4	2	4500	594.50

**Hubbard Guyeye Anchor Rods**

Hot Galvanized

Eliminates the guy thimble. Combines drop forged oval eye and guy thimble; should be used only with guy strand.

Cat. No.	Diam. In.	Ln. Ft.	Eye In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
8406	1/2	6	1 1/2 x 3/4	10	450	\$79.61
8407	1/2	7	1 1/2 x 3/4	10	500	92.31
8416	5/8	6	1 1/2 x 3/4	10	680	111.05
8418	5/8	8	1 1/2 x 3/4	10	830	135.58
8426	3/4	6	5/8 x 7/8	10	960	143.80
8428	3/4	8	5/8 x 7/8	5	1245	178.90
8429	3/4	9	5/8 x 7/8	5	1350	201.62
8438	1	8	5/8 x 1 1/8	3	2300	316.70
8440	1	10	5/8 x 1 1/8	3	2600	378.45



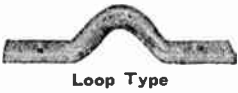
**Tu-Guyeye Anchor Rods**

For tying two wires at the same point.

8529	3/4	9	7/8 x 3/4	5	1460	\$221.50
8538	1	8	1 x 3/4	3	2310	346.35
8540	1	10	1 x 3/4	3	2895	408.10

## Hubbard Wall Straps

Hot Galvanized



Loop Type

Used by telephone, electric railway companies, and central stations for attaching guys to buildings, dead-ending messengers or span wires on buildings or walls.



Guyeye Type

Cat. No.	Type	DIMENSIONS, INCHES				Diam. Holes	Std. Pkg.	Wt., Lbs. per 100	Ship. Price per 100
		Length over All	Width	Thick-ness					
8892	Loop	8	1 1/4	1/4	3/16	150	95	\$33.30	
8895	Guyeye	16 7/8	1 1/2	1/4	3/16	25	240	50.00	
8896	Guyeye	24 3/8	1 1/2	1/4	3/16	25	328	66.60	

## Hubbard Guy Shims

Hot Galvanized



Keeps guy wire strand from cutting into pole.

Six or more are required per pole.

Cat. No.	Per 100	Dimensions Inches	Std. Pkg.	Wt., Lbs. per 100
7570	\$9.50	1 1/32 x 1 1/32 x 8	500	53

## No. 7575 Hubbard Strain Plates

Hot Galvanized

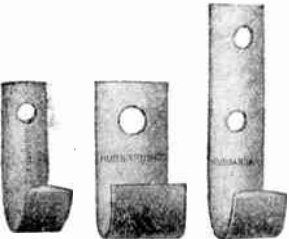


Serves the same purpose as the guy shim but gives better protection and is cheaper to install. From 2 to 4 are required per pole.

Cat. No.	Per 100	Dimen. In.	Std. Pkg.	Wt., Lbs. per 100
7575	\$17.10	4x8x14-Ga. 250	84	

## Hubbard Guy Hooks

Hot Galvanized



The No. 7584 guy hook is the N. E. L. A. and A. T. & T. Company's standard and is in general use, although the 2-bolt type is preferred by some construction men. For lighter work, the 3 1/2-inch hook gives satisfactory results. Made of half oval steel, bent with the flat side to the pole, except No. 7583 1/2 which is formed from flat steel.

Cat. No.	Size Steel Inches	Length Inches	Diameter Holes, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
7583 1/2	1 1/4 x 1 1/4	3 1/4	9/16	450	40	\$8.27
7584	1 3/4 x 3/8	4	11/16	200	89	17.81
7585	1 1/2 x 3/8	3 1/2	9/16	300	60	12.59
7586	1 1/2 x 3/8	6	9/16	175	89	17.81

## Hubbard Pole Reinforcing Material

Hot Galvanized



Band

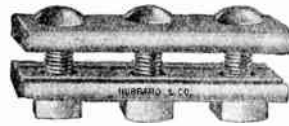
The Hubbard Reinforcement Band makes a strong and reliable method for attaching a stub when the butt of a pole is rotted. This arrangement saves the expense of installing a new pole and provides a reinforcement which adds years of life to the pole.

Bolts and lag screws to complete this construction should be ordered separately.

Pipe Cat. No.	Per 100	Description	Size	Std. Pkg.	Wt., Lbs. per 100
7850	\$44.70	Reinforcement Band	12-Ga. x 2" x 68 1/2"	10	410
7851	56.70	Reinforcement Band	12-Ga. x 2" x 89 1/2"	10	525
7852	36.20	Reinforcement Pipe	2" Ex. Hvy. x 5'	10	220
7855	80.40	Reinforcement Band	10-Ga. x 2" x 99"	10	780
7856	96.20	Reinforcement Band	10-Ga. x 2" x 120"	10	1010

## Hubbard Guy Clamps

Hot Galvanized



No. 7461

Nos. 7447, 7448, 7449 and 7450 for strands 3/16 to 3/8 inch; made of hot rolled steel sections 1 1/8 inches wide by 3/8 inch thick; 1/2 inch bolts.

No. 7450, W. U. Std.

Nos. 7461, 7462 and 7464, heavier types, for strands 5/16 to 3/8 inch, clamp section 1 1/2 inches wide by 3/8 inch thick, have 5/8 inch bolts. No. 7461 is A. T. & T. Co. standard.

No. 7460 for strands 3/8 to 5/8 inch; is a drop-forged steel section 2 1/8 inches wide by 1/2 inch thick; with 5/8 inch bolts. Clamp sections are so punched that all bolts are reversible in assembly.

Cat. No.	Per 100	No. Bolts	Type	Size Strand Inches	Std. Pkg.	Wt. Lbs. per 100
7447	\$21.00	1	Light	3/16 to 3/8	400	63
7448	26.37	2	Light	3/16 to 3/8	175	122
7449	37.40	3	Light	3/16 to 3/8	125	155
7450	45.20	3	Light	3/16 to 3/8	75	226
7461	55.48	3	Heavy	5/16 to 3/8	50	274
7462	37.00	2	Heavy	5/16 to 3/8	100	174
7464	73.79	4	Heavy	3/8 to 5/8	50	365
7460	108.50	3	Extra Heavy	3/8 to 5/8	60	365

## Hubbard Drop-Forged Wire Rope Clips

Hot Galvanized

Designed so that the lay of the strand fits the body of the clip perfectly.

Drop-forged from best quality open hearth steel. With hot galvanized U-bolts and nuts. Legs of U-bolts are so spaced as to give greatest allowable clearance when tightening the nuts with a wrench.



Cat. No.	Per 100	Size Strand Inches	Wt. Lbs. per 100
7480	\$35.00	1/4	30
7481	35.00	3/16	30
7482	40.00	3/8	34
7483	45.00	7/16	70
7484	45.00	1/2	70
7485	55.00	5/8	100
7486	65.00	3/4	150
7487	75.00	7/8	245
7488	85.00	1	260

## Hubbard ServiSleeves

For Guy Strand

Hot Galvanized



For effectively and uniformly serving strand.

ServiSleeves overcome objections of cutting, clipping and crimping and prevent finger pinching. Easily and quickly installed, retain original shape and maintain rigid grip at all times. Just slips on and stays put. No special tools are needed.

Cat. No.	Per 100	Size Strand Inches	Length Inches	Std. Pkg.	Wt., Lbs. per 100
7451	\$4.50	3/16	1 1/4	100	2
7452	4.50	1/4	1 1/4	100	3
7453	4.50	5/16	1 1/2	100	5
7454	5.30	3/8	2	100	7
7455	5.30	7/16	2 1/4	100	10
7456	7.50	1/2	2 1/4	100	13

## Hubbard Pole Markers Solid Copper and Aluminum Alloy



Stamped with raised letters or numerals as ordered. Consecutive numerals are depressed. Nominal die charge for quantities less than 1000 pieces, unless standard dies are used, and in all cases of special dies.

Cat. No.	Per 100	Material	Over All <sup>W</sup>			Std. Pkg.	Wt., Lbs. per 100	Ship. per 100
			Lgth. In.	Head In.	Shank In.			
2000	\$10.40	Copper	2	1	5/16	1000	7	
6000	8.30	Alum. Alloy	2	1	5/16	1000	3.2	

## Hubbard Pole Dating Nails

Hot Galvanized



Used for indicating the year in which poles were set and also the height of poles. Special nails with 2 or 3 numerals, letter or characters, depressed in the head can be furnished. Overall length, 2 1/2 inches.

Standard package, 100. Weight per 100, 4.4 pounds.

Cat. No.	1900	1920	1921	1922	1923	1924	1925	1926
No.	Blank	20	21	22	23	24	25	26
Cat. No.	1927	1928	1929	1930	1935	1940	1945	1955
No.	27	28	29	30	35	40	45	55
Price	per 100 \$1.80							

## Hubbard Steps for Wood Poles

Hot Galvanized



\*Long hook head.

Cat. No.	DIMENSIONS, INCHES		Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Diameter	Length			
7123	9/16	9	300	70	\$13.81
7125	5/8	10	250	96	16.49
*7126	5/8	10	175	115	24.15

## Hubbard Pole Steps for Wood Poles

Button Head—Hot Galvanized



Cat. No.	DIMENSIONS, INCHES		Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Diameter	Length			
7129	5/8	9 1/16	175	105	18.69

## Hubbard Detachable Pole Steps

Hot Galvanized



Lag Screw Type

Lag screw type is installed by slipping the plate over the lag and screwing lag in pole until plate bites into wood.

Step slides down in a groove on each side of head of lag. When step is removed nothing but the head of the lag extends from pole. Prevents mischievous ascents of pole and accidents.

Cat. No.	Per 100	Description	Ext. from Pole, In.	Std. Pkg.	Wt., Lbs. Per 100
7236	26.70	Step	5 1/8	400	50

## Hubbard Drop Forged Guyeye Nuts

Hot Galvanized



Used extensively on the threaded end of machine bolts passed vertically through the cross arm for attaching suspension type insulators. Also useful for dead ending lines. By their use an eye may be added to either end of a double arming bolt or a second eye to an eye bolt.

The guyeye nut is designed exclusively for use with guy strand and eliminates the guy thimble. It is well rounded with a generous radius, so that the strand will not be sharply kinked.

Cat. No.	Diam. Bolt Inches	INSIDE DIMENSIONS EYE, INCHES		Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Width	Length			
7510	5/8	7/8	1 1/2	200	112	\$50.00
7511	3/4	7/8	1 1/2	200	111	50.00
7512	1	1 1/4	1 11/16	100	167	58.30

## Hubbard Drop-Forged Eye Nuts

Hot Galvanized



No. 7502

Drop-forged eye nuts were designed for use on the threaded ends of machine bolts passed vertically through cross arms for attaching suspension type insulators. They are also useful for dead ending lines. By their use a second eye may be added to the eye bolts, which permits the attachment of a back guy to the same bolt that supports the insulators to dead ended wire.

Cat. No.	Diam. Bolt Inches	EYE DIMENSIONS, IN.		Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Width	Length			
7500	1/2	1 1/8	1 1/8	400	53	\$31.40
7501	5/8	1 1/8	1 1/8	400	46	31.40
7502	5/8	1 1/2	1 11/16	300	61	41.40
7503	3/4	1 1/2	1 11/16	300	59	41.40

## Hubbard Drop Forged Bolt Eyes

Hot Galvanized



No. 7514

Used on either head or nut end of a machine bolt. Standard bolt eye may be used for attaching suspension insulators with clevis type cap to cross arm. Long type is for supporting suspension insulators with hook in cap of upper unit.

Cat. No.	Diam. Bolt In.	INSIDE DIMEN. EYE, IN.		Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Width	Length			
*7514	5/8	1 1/8	1 21/32	300	77	\$33.30
7515	5/8	1 3/8	3 3/32	150	114	38.40
7516	3/4	1 5/8	3 3/32	150	112	38.40
7517	5/8	1 5/16	2 13/32	125	90	35.00
7518	3/4	1 5/16	2 13/32	125	87	35.00

\*Has standard eye. All others have long eye.

Nos. 7515 to 7518

## Hubbard Stubbing and Guying Washers

Hot Galvanized



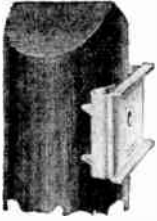
Used effectively in stubbing old poles, both serving to draw together the wires wrapped around the pole and stub or at both ends of the stubbing bolt to draw together the pole and stub.

Cat. No.	Per 100	Washer Size Inches	Bolt Size Inches	Hole Size Inches	Wt. Lbs. per 100	Ship. per 100
7823	...	3 x 3 x 1/4	3/4	7/8	65	
7824	...	3 x 3 x 5/16	1	1 1/8	80	
7825	...	3 1/4 x 3 1/8 x 1/4	5/8	3/4	75	



## Peirce Presteel Pole Gains

Hot Galvanized



For attaching cross arms to poles without the need for gaining the pole. The design provides a saddle for the cross arm, a springy saddle for the pole and four points for holding the gain in a fixed position.

Its construction allows for easy installation and ready adjustment for alignment of the cross arm. It spaces the cross arm away from the pole so drainage and ventilation overcome decay.

Cat. No.	Size Arm Inches	Diam. Hole Inches	Size Steel Gauge	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
5091	3 1/4 x 4 1/4	1 3/16	9	25	268	\$48.30
5092	3 1/2 x 4 1/2	1 3/16	9	25	256	48.30
5093	3 3/4 x 4 3/4	1 3/16	9	10	285	48.30
5094	4 x 5	1 3/16	9	10	285	48.30

## Peirce Cross Arm Reinforcing Plates

Hot Galvanized



Designed to give greater effectiveness than the standard square washer and provide a means for preventing checking and splitting of the cross arm at the point of attachment to the pole.

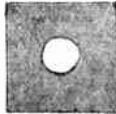
Made from flat steel 3 7/8 inches wide. A 1 1/16-inch rib is pressed vertically on the plate to give greater strength.

Cat. No.	Size Arm Inches	Diam. Hole Inches	Size Steel Gauge	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
5042	3 1/4 x 4 1/4	1 3/16	7	100	117	\$19.60
5043	3 1/2 x 4 1/2	1 3/16	7	100	119	19.80
5044	3 3/4 x 4 3/4	1 3/16	7	100	121	20.20
5045	4 x 5	1 3/16	7	100	130	21.30
5047	6 x 8	1 3/16	7	100	178	29.70

## Hubbard Square Washers

Hot Galvanized

Washers are cleanly cut and are galvanized in such a manner as to insure a heavy, even coat of pure zinc with no large drops to interfere with the fit of the bolt or nut.



Cat. No.	Dimensions Inches	Diam. of Hole, In.	For Bolt Size, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
7812	2 x 2 x 1/8	1 1/16	1/2 or 3/8	1500	14.0	\$2.42
7814	2 1/4 x 2 1/4 x 3/16	1 3/16	5/8 or 3/4	1000	22.7	3.54
7816	3 x 3 x 3/16	1 3/16	5/8 or 3/4	500	45.8	7.42
7817	3 x 3 x 1/4	1 3/16	5/8 or 3/4	350	62.3	9.10
7818	4 x 4 x 3/16	1 3/16	5/8 or 3/4	250	87.5	12.58
7819	4 x 4 x 1/4	1 3/16	3/4 or 7/8	200	115.0	16.13
7820	4 x 4 x 1/2	1 3/16	1	100	220.0	32.62
7826	3 1/2 x 3 1/2 x 3/8	1 3/16	3/4 or 7/8	200	124.	21.50
7827	6 x 6 x 3/8	1 3/16	1	50	370.	57.00

## Hubbard Round Washers

Hot Galvanized



Washers are cleanly cut and are galvanized in such a manner as to insure a heavy, even coat of pure zinc with no large drops to interfere with the fit of the bolt or nut.

Cat. No.	O.D. In.	Size Hole In.	Thickness Inches	FOR BOLT SIZE Inches	Weight Pounds per 100	Std. Pkg.	Price per 100
7801	1	7/16	5/64	3/8	1.6	15000	\$ .60
7802	1 1/4	1 1/2	5/64	3/8	2.6	7000	.81
7803	1 3/8	9/16	7/64	1/2	4.2	5000	1.08
7805	1 3/4	1 1/8	1/8	5/8	8.4	2500	1.83
7806	2	1 3/8	1/8	3/4	11.0	2000	2.52

## Hubbard Guyeye Bolts

Hot Galvanized



### 5/8-Inch—1 1/2 x 3/4-Inch Oblong Eye

Cat. No.	Lgth. In.	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100	Cat. No.	Lgth. In.	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
9060	10	50	140	\$44.88	9065	15	50	190	\$49.73
9062	12	50	160	46.65	9068	18	50	220	52.13

### 3/4-Inch—5/8 x 7/8-Inch Eye

Cat. No.	Lgth. In.	Std. Pkg.	Price per 100	Cat. No.	Lgth. In.	Std. Pkg.	Price per 100
9080	10	50	\$61.45	9085	15	25	\$69.35
9082	12	50	64.30	9088	18	25	72.65

## Hubbard Machine and Crossarm Bolts

Hot Galvanized



Hubbard Machine and Through Bolts, unless otherwise specified, are furnished with rolled threads which insure a perfect nut fit the full length of the thread.

### 3/8-Inch Machine Bolts

Cat. No.	Length Inches	Length Thread Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
9603	2	3	1500	12.6	\$3.71
9603 1/2	3 1/2	3	1250	14.3	4.04
9604	4	3	1000	15.7	4.37
9604 1/2	4 1/2	3	900	17.2	4.66
9605	5	3	800	18.3	5.27
9605 1/2	5 1/2	3	750	19.8	5.56
9606	6	3	650	21.4	5.89

### 1/2-Inch Machine Bolts

Cat. No.	Length Inches	Length Thread Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
9704 1/2	4 1/2	3	550	31.3	\$7.93
9704 3/4	4 3/4	3	500	33.0	8.36
9705	5	3	500	37.8	8.36
9706	6	3	400	41.0	9.22
9707	7	3	400	47.2	10.08
9708	8	4	350	55.1	10.93
9710	10	4	150	69.3	12.63
9712	12	6	150	78.0	14.83
9714	14	6	150	83.3	16.53
9716	16	6	150	96.6	18.25
9718	18	6	100	110.0	19.95
9720	20	6	100	121.0	21.65

### 5/8-Inch Crossarm Bolts

Cat. No.	Length Inches	Length Thread Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
9808	8	4	100	91	\$15.10
9810	10	4	100	103	17.10
9812	12	6	100	115	19.10
9814	14	6	100	129	21.10
9816	16	6	100	143	23.10
9818	18	6	50	164	25.10
9820	20	6	50	178	27.10
9822	22	6	50	192	29.10
9824	24	6	50	206	31.10
9826	26	6	50	220	33.10
9828	28	6	50	234	35.10

### 3/4-Inch Machine Bolts

Cat. No.	Length Inches	Length Thread Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
9908	8	4	50	150	\$23.83
9910	10	4	50	166	24.75
9912	12	6	50	182	27.68
9914	14	6	50	202	30.60
9916	16	6	50	214	33.53
9918	18	6	50	230	36.45
9920	20	6	50	246	39.38
9922	22	6	25	276	42.30
9924	24	6	25	292	45.23
9926	26	6	25	308	48.15
9928	28	6	25	324	51.08



**Hubbard Carriage Bolts**

Hot Galvanized



Carriage bolts are used for attaching the braces to cross-arms on most overhead lines.

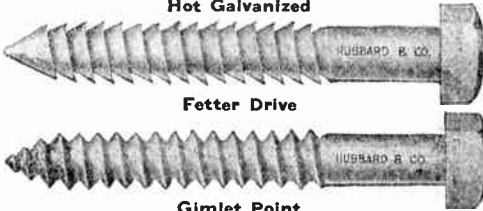
Standard heads, square nuts, rolled threads.

Cat. No.	LENGTH, INCHES		Std. Pkg.	Weight Pounds per 100	Price per 100
	Over All	Thread			
9633	3	1 3/4	1500	13.2	\$3.56
9633 1/2	3 1/2	1 3/4	1250	14.0	3.90
9634	4	1 3/4	1000	15.7	4.23
9634 1/2	4 1/2	1 3/4	900	17.2	4.51
9635	5	1 3/4	800	18.2	5.08
9635 1/2	5 1/2	1 3/4	750	19.5	5.37
9636	6	1 3/4	700	21.6	5.70

Cat. No.	LENGTH, INCHES		Std. Pkg.	Weight Pounds per 100	Price per 100
	Over All	Thread			
9643	3	2 1/2	800	24.3	\$6.28
9643 1/2	3 1/2	3	700	26.6	6.70
9644	4	3	600	29.3	7.13
9644 1/2	4 1/2	3	500	32.1	7.55
9645	5	3	450	35.1	7.98
9645 1/2	5 1/2	3	400	37.5	8.41
9646	6	3	350	40.0	8.84

**Hubbard Lag Screws**

Hot Galvanized



Fetter Drive

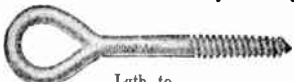
Gimlet Point

Fetter drive lag screws have become practically standard for construction work because of their greater holding power. Threads do not tear the wood. Gimlet point screws will be furnished for 1/4-inch and 5/8-inch, fetter drive screws for 3/8, 1/2 and 5/8-inch.

Cat. No.	Lgth. In.	Std. Pkg.	Wt. Lbs. per 100	Price per 100	Cat. No.	Lgth. In.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
9722	2	6000	2.8	\$2.35	9722 1/2	2 1/2	5000	3.5	\$2.55
9732	2	4500	4.7	\$2.35	9733	3	2500	6.8	\$2.80
9732 1/2	2 1/2	3000	5.6	2.55	9733 1/2	3 1/2	2000	7.8	3.05
9742 1/4	2 1/4	3000	7.8	\$3.10	9744	4	1500	12.3	\$4.00
9742 1/2	2 1/2	2500	8.3	3.10	9744 1/2	4 1/2	1250	13.9	4.30
9743	3	2000	10	3.40	9745	5	1000	15.4	4.65
9743 1/2	3 1/2	1500	11.6	3.70	9746	6	800	17.1	5.35
9752 1/2	2 1/2	1200	16.7	\$4.85	9755	5	600	29.2	\$7.10
9753	3	1100	19	5.30	9755 1/2	5 1/2	550	30.8	7.55
9753 1/2	3 1/2	1000	21.3	5.75	9756	6	500	34.8	8.00
9754	4	800	23.6	6.20	9756 1/2	6 1/2	450	39.3	8.45
9754 1/2	4 1/2	700	25.3	6.65	9757	7	400	42.2	8.90
9764	4	550	37.7	\$8.80	9765 1/2	5 1/2	400	50.2	\$10.75
9764 1/2	4 1/2	500	41.8	9.45	9766	6	350	54.6	11.40
9765	5	450	46.0	10.10					

**Hubbard Drop Forged Screw Eye Bolts**

Hot Galvanized



Has drop forged oval eye and 3 inches of gimlet lag screw thread.

Cat. No.	Lgth. to Ctr. of Eye, In.	Diam. In.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
9930	7	1/2	100	50	\$33.50
9931	7 3/4	5/8	100	75	44.50
9932	7 3/4	3/4	50	95	55.50

**Hubbard Double Arming Bolts**

Hot Galvanized



The double arming bolt, used with four square washers, represents a much more economical means of tying cross arms together than the old method of a wooden block with a hole through it and a long machine bolt.

The points are finished and prices include four square nuts but no washers.

Cat. No.	LENGTH, INCHES		Std. Pkg.	Approx. Shipping Wt., Lbs. per 100	Price per 100
	Over All	Thread			
9842	12	5	100	101	\$17.38
9844	14	6	100	109	18.62
9846	16	6	100	117	19.70
9848	18	8	100	125	21.05
9850	20	8	100	133	22.23
9852	22	8	50	148	23.70
9854	24	8	50	156	24.88
9862	12	5	50	150	\$28.00
9864	14	6	50	166	29.77
9866	16	7	50	182	31.53
9868	18	8	50	198	33.15
9870	20	8	50	214	34.83
9872	22	8	50	230	36.48
9874	24	8	50	246	38.13
9882	12	5	50	234	\$40.30
9884	14	6	50	254	42.78
9886	16	6	50	274	45.18
9888	18	8	25	308	47.95
9890	20	8	25	328	50.40
9892	22	8	25	348	53.60
9894	24	8	25	368	56.05

**Hubbard Drop Forged Eye Bolts**

Hot Galvanized



With drop forged oval eyes. All standard eye bolts are rolled threaded 6 inches except the 6-inch bolt which is rolled threaded 4 inches. The D. A. eye bolts have cut threads up to within 1 1/2 inches of the eye.

Cat. No.	Lgth. to Center of Eye, Inches	Std. Pkg.	Wt. Lbs. per 100	Price per 100	Cat. No.	Lgth. to Center of Eye, Inches	Std. Pkg.	Wt. Lbs. per 100	Price per 100
9936	6	100	47	\$25.73	9944	14	100	95	\$29.35
9938	8	100	59	26.95	9946	16	100	107	30.77
9940	10	100	71	27.00	9948	18	100	119	31.52
9942	12	100	83	28.08	9950	20	100	131	32.63
9956	6	100	103	\$32.30	9964	14	50	158	\$38.78
9958	8	100	115	34.10	9966	16	50	170	41.18
9960	10	100	127	35.13	9968	18	50	182	42.98
9962	12	50	146	36.90	9970	20	50	194	44.85
9976	6	50	154	\$47.00	9984	14	50	218	\$57.90
9978	8	50	170	50.65	9986	16	50	234	61.25
9980	10	50	186	51.70	9988	18	50	250	64.37
9982	12	50	202	54.55	9990	20	50	266	67.23
9796	16	25	284	\$88.29					
9798	18	25	308	91.36					
9800	20	25	330	94.43					

## Hubbard Flat Cross Arm Braces

Hot Galvanized



Made only from new open hearth steel.

### 1 7/32 x 7/32-Inch

Cat. No.	Length Inches	Ship. Wt., Lbs. per 100	Price per 100	Cat. No.	Length Inches	Ship. Wt., Lbs. per 100	Price per 100
8020	20	142	\$16.35	8028	28	198	\$22.02
8022	22	156	17.76	8030	30	212	23.51
8024	24	170	19.18	8032	32	226	24.92
8026	26	184	20.60	.....	.....	.....	.....

### 1 1/4 x 1/4-Inch

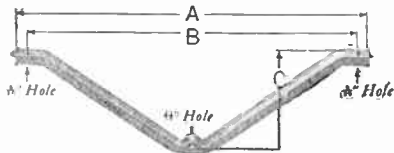
8120	20	167	\$17.73	8128	28	233	\$24.01
8122	22	183	19.29	8130	30	250	25.64
8124	24	200	20.84	8132	32	266	27.19
8126	26	216	22.40	.....	.....	.....	.....

## Hubbard Vertical Braces

Cat. No.	No. of Arms	Length Over All Inches	Spacing Inches	Size Angle Inches	Ship. Wt., Lbs. per 100	Price per 100
7976	2	20	18	1 1/2 x 1 1/2 x 3/16	300	\$53.70
7977	3	38	18	1 1/2 x 1 1/2 x 3/16	520	92.75
7978	4	56	18	1 1/2 x 1 1/2 x 3/16	840	132.80
7986	2	26	24	1 1/2 x 1 1/2 x 3/16	380	69.33
7987	3	50	24	1 1/2 x 1 1/2 x 3/16	700	123.20
7988	4	74	24	1 1/2 x 1 1/2 x 3/16	1040	175.75

## Hubbard Angle Cross Arm Braces

Hot Galvanized



Furnished to specifications. Give dimensions, A, B, C, as indicated on illustration, and state size of angle.

Cat. No.	Size, Angle Inches	DIMENSIONS, IN.			Std. Pkg.	Wt., Lbs. per 100	Price per 100
		A	B	C			
7950	1 1/2 x 1 1/2 x 3/16	40	37	12	5	710	\$114.58
7952	1 1/2 x 1 1/2 x 3/16	51	48	14 3/4	5	890	135.62
7953	1 3/4 x 1 3/4 x 3/16	63	60	18	5	1280	182.80
7954	1 3/4 x 1 3/4 x 3/16	69	66	20	5	1410	201.05
7955	1 3/4 x 1 3/4 x 3/16	75	72	18	5	1490	206.72
7956	2 x 2 x 3/16	75	72	22	5	1780	245.25

### N.E.L.A. Standard

7940	1 1/2 x 1 1/2 x 3/16	45	42	12	5	780	\$123.85
7941	1 1/2 x 1 1/2 x 3/16	51	48	18	5	970	143.90
7942	1 1/2 x 1 1/2 x 3/16	63	60	18	5	1100	159.32
7943	1 3/4 x 1 3/4 x 3/16	75	72	22	5	1560	217.12

## Hubbard Alley Arm Braces

Hot Galvanized



Where it is necessary for lines to be run adjacent to buildings or trees the Hubbard Alley Arm Brace furnishes an exceptionally rigid and economical construction. Angle is bent at each end to 45 degrees. Brace is pierced at each end with 5/16-inch holes in both legs of the angle, permitting installation as desired, underneath or on the side of the crossarm. Each brace is furnished with a sturdy step which is firmly riveted in place at the mid-point.

Stock No.	Description	Length Feet	Std. Pkg.	Approx. Ship. Wt., Lbs. per 100 Pcs.	Price per 100
7996	1 3/4 x 1 3/4 x 3/16	6	5	1560	\$263.30
7998	Steel Angle	8	5	2000	337.50

## Rainier Crossarm Braces

Made Entirely of Wood  
Patent Pending



Provides all advantages of all-wood construction without reducing strength or life of pole structure or increasing its cost. Withstands greater stresses than balance of the pole structure; adequately survives shock and abuse.

Treated with 10 pounds of coal tar creosote per cubic foot of timber. Especially suitable near salt water or under corrosive atmospheric conditions.

The right and left-hand members are identical. The bolt holes fit and only three bolts are required to install a pair. They are interchangeable with double span steel braces.

This brace complies with crossarm freight classifications. Rainier Braces and Crossarms can be shipped in mixed carloads without sacrificing the carload freight rate.

No.	Each	Size Inches	Span Inches	Drop Inches	Wt., Lbs. per Pair
1	.....	1 1/2 x 2 1/4 x 30	38	18	5.50
2	.....	2 x 3 x 32 7/16	42	12 1/2	10
3	.....	2 x 3 x 35 3/4	48	14 1/2	11
4	.....	2 x 3 x 42 5/8	60	18	13
5	.....	2 x 3 x 46 1/16	66	20	14.26
6	.....	2 x 3 x 49 1/2	72	21 1/2	15.28

## Hubbard 2-Piece Wood Crossarm Braces



Made of hickory, 1 1/2 inch square, treated with creosote and fitted with hot galvanized steel fittings. Has high insulating properties. Mounted to crossarm with 1/2-inch bolts and to pole with 5/8-inch machine bolts.

Also supplied in dip-treated fir or creosoted yellow pine. Other types of standard single and hinged braces also available.

Cat. No.	Per 100	DIMENSIONS, IN.		Shipping Weight Pounds per 100
		Between C.A. Mounting Holes	Drop	
5537	\$131.30	37	12	550
5542	135.00	42	12	580
5547	142.50	48	14 3/4	640
5560	150.00	60	18	735
5566	165.00	66	20	785
5572	180.00	72	22	850

## Hubbard Alley Arm Braces

Hot Galvanized

Forged Ends



Cat. No.	Size Angle Inches	Length Feet	Std. Pkg.	Wt., Lbs. per 100 Pcs.	Price per 100
7979	1 3/4 x 1 3/4 x 3/16	5	5	1240	\$215.82
7981	1 1/2 x 1 1/2 x 3/16	5	5	1100	183.98
7982	1 1/2 x 1 1/2 x 3/16	6	5	1300	207.60
7984	1 3/4 x 1 3/4 x 3/16	7	5	1760	267.78
7985	2 x 2 x 1/4	10	5	3800	544.60

## Hubbard Pole Seats Hot Galvanized

The frames and braces of all styles are of 1½-inch channel steel. The wood seats are 1½-inch cypress, boiled in creosote. The bars of the all steel seats are ¾-inch square steel, let



into the frame in such manner as to leave no projecting ends. There is no strain on the riveted joints. The bars are placed with corners up to prevent slipping.

They are shipped completely assembled in bundles of five.

### No. 751

#### With Wood, Creosoted Seat

Cat. No.	Size of Seat Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
751	11x12	5	1240	\$250.00
753	11x20	5	1560	365.00



### No. 755

#### With Steel, Galvanized Seat

Cat. No.	Size of Seat Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
755	12x12 7/8	5	1420	\$315.60
757	12x11	5	1380	301.50

## Hubbard Cable Suspension Clamps Hot Galvanized



These are the standard A. T. & T. Company's Cable suspension clamps, the one-bolt type being used for light cables and on cable arms, and the three-bolt clamp for heavy cables and long spans. The one-bolt clamp is furnished without a bolt, as the 5/8-inch through bolt is used both for attaching the clamp to the pole and tightening the clamp on the stand. The three-bolt clamp is furnished with two 1/2-inch high carbon steel guy clamp bolts.

Cat. No.	Type	Length In.	Size Strand In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
8901	1-Bolt	2 3/8	1/4 to 7/16	250	84	\$16.72
8903	3-Bolt	5 5/8	1/4 to 7/16	75	221	43.28

## Hubbard Reinforcing and Safety Straps

### For Suspension Clamps

Hot Galvanized

No. 8905 is used to support the messenger bolt at points of extreme stress, such as long spans. No. 8906 is a Safety Strap to prevent the cable's falling if the hangers give way. No. 8907 is a combination of Nos. 8905 and 8906.



### Reinforcing Straps

Cat. No.	Size Steel Inches	Wt., Lbs. per 100	Price per 100
8905	1 1/2 x 1/8	36	\$27.20
8906	1 3/4 x 1/8	76	39.13
8907	1 3/4 x 1/8	116	66.33

## Hubbard Telephone Corner Brackets

Hot Galvanized

Used where the lead from the pole comes to the building at an angle.

Mounting and insulator holes on Nos. 9204 and 9205 are 1 1/2 inch. Mounting holes on Nos. 9206 and 9207 are 1 1/2 inch, insulator mounting holes, 1 3/32 inch.

Porcelain knobs and bolts listed below are used on these brackets but are not included in the price.



Cat. No.	Size Steel Inches	Length Legs Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
9204	1 7/32 x 7/32	5 5/8 x 2 1/2	250	60	\$26.60
9205	1 7/32 x 1/32	10 1/8 x 1 3/16	200	87	31.53
9206	1 1/2 x 3/16	4 3/4 x 2 1/2	250	60	17.50
9207	1 1/2 x 1/4	4 3/4 x 4 1/2	200	110	20.50

## Hubbard Porcelain Knobs for Telephone Brackets



No. 9225

These knobs are of dry process white glazed porcelain, and are for use with the telephone brackets listed above.



No. 9226

Cat. No.	Type	DIMEN., INCHES		Ship. Wt., Lbs. per 100	Price per 100
		Bolt Hole	Height		
9225	Two-Groove	3/8	1 1/2	20	\$7.70
9226	Four-Groove	1/2	2 1/4	36	13.20

## Hubbard Bolts for Telephone Brackets

Hot Galvanized

For attaching porcelain knobs to telephone brackets.

Cat. No.	Type	Diam. Inches	Length Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
9232	Stove Bolt	5/16	2	3000	6.0	\$2.48
9603	Machine Bolt	3/8	3	1500	12.6	3.71
9605 1/2	Machine Bolt	3/8	5 1/2	750	19.8	5.56

## Hubbard Telephone Distributing Brackets

Hot Galvanized



No. 9200

Cat. No.	Style Bracket	DIMEN., INCHES		Approx. Ship. Wt., Lbs. per 100	Price per 100
		Size of Steel	Length of Legs		
9202	L Pole	2 x 1/4	3 x 3 3/4	87	\$17.58
9200	L House	1 3/4 x 3 1/16	2 7/8 x 3 1/4	51	12.13

## Hubbard Telephone Knob Screw Insulators

Hot Galvanized



No. 2920 knob and screw. The screw is 3/8-inch in diameter and threaded for 1 1/2 inches.

No. 2927 knob is used with No. 2920 screw. It is made of brown glazed dry process porcelain and is 1 1/2 inches high and 1 3/4 inches in diameter. Wire groove is 1/2-inch wide. Hole, 1/2-inch in diameter, is well rounded on outer edges to prevent cutting insulation of wire.

Cat. No.	Per 100	Standard Package	Wt., Lbs. per 100
2920	\$13.60	500	48
2927	8.40	100	29





## Peirce Telephone Wireholders

### All-Porcelain Type



Combines a wall bracket, insulator and screw all in one. Used as a corner bracket where the lead from the pole comes to the building at an angle and as a standard house bracket for carrying the pairs on a straight run along the building or for dead-ending.

The double groove on the top makes an ideal arrangement for tying in twisted telephone pairs.

No metal is exposed after installation. The wireholder is not affected by atmospheric conditions and will not make rust stains on the house.

Cat. No.	Equipped with	Wire Hole Inches	Std. Wt., Lbs. Pkg. per 100	Price per 100
1622	No. 20x2-In. Galv. Screw	$\frac{9}{16} \times \frac{3}{4}$	50 60	\$15.80
1632	No. 20x2-In. Brass Screw	$\frac{9}{16} \times \frac{3}{4}$	50 60	18.80

## No. 8918 Hubbard Span Clamps

Hot Galvanized



Used when service connections are made at points between poles. Equipped with No. 8901 suspension

clamp and bolt. Insulator spacing,  $5\frac{3}{4}$  inches.

Standard package, 125. Weight per 100. 138 pounds.

Price, No. 8918.....per 100 \$77.50

## No. 9214 Peirce Porcelain Knobs for Telephone Racks



Made of brown glazed dry process porcelain. The wire groove is divided by a fin which keeps the two wires of the twisted pair separated.

Cat. No.	DIMENSIONS, IN.			Bolt Hole	Ship. Wt., Lbs. per 100	Price per 100
	Height	Diameter	Wire Groove			
9214	$1\frac{1}{2}$	$1\frac{3}{4}$	$\frac{3}{4}$	$2\frac{5}{8}$	22.7	\$9.00

## Peirce Distributing Knob Racks

Hot Galvanized

### For Telephone Wires

These racks furnish a secure but inexpensive means for distributing twisted pair telephone wires from cable poles. Nos. 2900, 2901 and 2902 are made with  $1\frac{3}{4}$ -inch channel steel back. The holes take a  $\frac{1}{2}$ -inch lag screw.

Cat. No.	Length Inches	No. of Knobs	Wt., Lbs. per 100	Price per 100
2900	$10\frac{5}{8}$	4	328	\$83.40
2901	$13\frac{3}{4}$	6	440	110.40
2902	$16\frac{7}{8}$	8	805	137.50

The above prices are for racks complete with knobs.



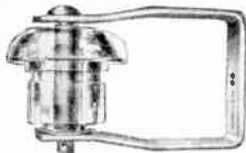
## Hubbard Dead-Ending Shackles

Hot Galvanized

Used for dead-ending or breaking bare signal wires. Shackle clamps around cross arm, which gives it greater holding power than pin construction. A  $\frac{3}{8}$ -inch lag screw is used to prevent displacement by creeping.

A lead washer and sleeve prevent glass insulator from coming into contact with the steel cotter bolt, eliminating breakage of insulator due to expansion and contraction.

Size,  $\frac{3}{16} \times 1\frac{1}{16}$  inches. Shackle is for  $3\frac{1}{4} \times 4\frac{1}{4}$ -inch cross arm.



Cat. No.	Description	Std. Wt., Lbs. Pkg. per 100	Price per 100
9290	Shackle Complete less Insulator	75 241	\$67.10
9291	Glass Insulator	100 175	44.90
9292	Wet Process Porcelain Insulator	50 175	58.30

## Hubbard Drop Forged Turnbuckles

Hot Galvanized



Eye and Eye

Eye and Hook

All Hubbard Turnbuckles including bodies, hooks, eyes and clevises are drop forged steel, insuring reliability and strength.

The sizes listed below are carried in stock. However, special assemblies can be made.

Diam. Bolt In.	Open In.	Closed In.	Length Opening In.	Width Eye In.	Length Eye In.	Opening Hook In.	Opening Clevis In.	Ship. Wt., Lbs. per 100
$\frac{3}{8}$	$16\frac{1}{2}$	$10\frac{1}{2}$	6	$\frac{9}{16}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	85
$\frac{1}{2}$	$17\frac{3}{4}$	$11\frac{3}{4}$	6	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$	160
$\frac{1}{2}$	$23\frac{3}{4}$	$14\frac{3}{4}$	9	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$	185
$\frac{1}{2}$	$29\frac{3}{4}$	$17\frac{3}{4}$	12	$\frac{3}{4}$	1	$\frac{5}{8}$	$\frac{5}{8}$	210
$\frac{5}{8}$	$19\frac{1}{2}$	$13\frac{1}{2}$	6	$1\frac{1}{2}$	2	$\frac{3}{4}$	$\frac{3}{4}$	260
$\frac{5}{8}$	$25\frac{1}{2}$	$15\frac{1}{2}$	9	$1\frac{1}{2}$	2	$\frac{3}{4}$	$\frac{3}{4}$	310
$\frac{5}{8}$	$31\frac{1}{2}$	$19\frac{1}{2}$	12	$1\frac{1}{2}$	2	$\frac{3}{4}$	$\frac{3}{4}$	360
$\frac{3}{4}$	20	14	6	$1\frac{1}{2}$	2	$\frac{7}{8}$	$\frac{3}{4}$	370
$\frac{3}{4}$	26	17	9	$1\frac{1}{2}$	2	$\frac{7}{8}$	$\frac{3}{4}$	430
$\frac{3}{4}$	32	20	12	$1\frac{1}{2}$	2	$\frac{7}{8}$	$\frac{3}{4}$	490

Size, Inches	TYPE OF ASSEMBLY				Hook and Clevis	Clevis and Clevis
	Eye and Eye	Eye and Hook	Eye and Clevis	Hook and Hook		
$\frac{3}{8} \times 6$	8601	8621	8641	8661	8681	8701
$\frac{1}{2} \times 6$	8602	8622	8642	8662	8682	8702
$\frac{1}{2} \times 9$	8603	8623	8643	8663	8683	8703
$\frac{1}{2} \times 12$	8604	8624	8644	8664	8684	8704
$\frac{5}{8} \times 6$	8605	8625	8645	8665	8685	8705
$\frac{5}{8} \times 9$	8606	8626	8646	8666	8686	8706
$\frac{5}{8} \times 12$	8607	8627	8647	8667	8687	8707
$\frac{3}{4} \times 6$	8608	8628	8648	8668	8688	8708
$\frac{3}{4} \times 9$	8609	8629	8649	8669	8689	8709
$\frac{3}{4} \times 12$	8610	8630	8650	8670	8690	8710

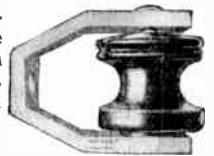
Prices upon application.

## No. 561 Hubbard Insulated Forks

Hot Galvanized

Made of  $1\frac{1}{4} \times \frac{1}{2}$ -inch channel. Equipped with insulator No. 355. Oval hole  $1\frac{1}{16} \times \frac{3}{4}$ -inch in back permits through bolt to be assembled to clevis without removing insulator. Standard package, 50. Weight per 100, 182 pounds.

Price, No. 561.....per 100 \$42.10



## Hubbard Insulated Forks

Hot Galvanized



No. 8820



No. 641

By the addition of a standard  $\frac{5}{8}$ -inch through bolt, lag screw or carriage bolt, the insulated forks illustrated may be converted into fork bolts, which simplifies considerably the keeping of stocks.

Fork No. 8820 is made of  $1\frac{1}{2} \times \frac{1}{4}$ -inch flat steel, formed so that the head of the through bolt keeps it from turning. It is equipped with insulator No. 357, which is attached by a  $\frac{3}{8}$ -inch bolt.

No. 641 is made of  $1\frac{1}{4} \times \frac{1}{2}$ -inch channel steel and is provided with a square bolt hole, into which the square shoulders of a carriage bolt fits, preventing the fork from turning around on the bolt. Insulator No. 357 is also furnished with this fork.

Cat. No.	Type	Kind of Bolt	Std. Wt., Lbs. Pkg. per 100	Approx. Ship. Wt., Lbs. per 100	Price per 100
8820	Flat Steel	$\frac{5}{8}$ -Inch Through Bolt	100	119	\$31.70
641	Channel Steel	$\frac{5}{8}$ -Inch Carriage Bolt	100	115	26.40

**Hubbard Standard Western Union Pins**

Made in accordance with the specifications of the Western Union Telegraph Co., and the Railway Signal Association. The cobs are of the best grade of air dried oak, turned to fit a gauge and boiled in paraffine to exclude all moisture. The pins are made of stiff, high carbon steel with clean threads, square nuts and clipped, round washers, and are for use with standard insulators having 1-inch pin holes.

**Long Shank Pins for Wood Cross Arms**

Cat. No.	Diam. In.	LENGTH, IN.		Std. Pkg.	Wt. Lbs. per 100	PRICE, PER 100	
		Above Shoulder	Below Shoulder			Plain	Galv.
8000	1/2	4 1/4	5	325	73	\$17.37	\$19.67
8005	5/8	4 1/4	5	250	104	21.65	25.45



**Lag Screw Pins for Wood Arms and Poles**

8006	1/2	4 1/4	3	400	56	\$18.50
8007	5/8	4 1/4	3	350	90	27.50

**Hubbard Standard Western Union Pins**

Hot Galvanized

Cobs are of the best grade of air dried oak, turned to fit a gauge and boiled in paraffin to exclude moisture. Pins are of stiff, high carbon steel with clean threads, square nuts and clipped round washers, and are for use with standard insulators having 1-inch pin holes.

**Short Shank Pins**

For Steel Cross Arms, Transposition Brackets and Break Irons

Cat. No.	Diam. In.	LENGTH, INCHES		Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder			
8010	1/2	4 1/4	1	500	48	\$22.12
8015	5/8	4 1/4	1	400	71	27.15
8015A	5/8	4 1/4	1 3/8	400	73	29.35



With Long Cob for Transposition Insulators

8011	1/2	5	1	400	53	\$24.62
8016	5/8	5	1	300	71	29.65

**Hubbard Wood Top Pins**

Hot Galvanized

With Steel Bolts



Wood top pins are composed of seasoned locust tops, thoroughly impregnated with paraffine and stiff steel fin bolts. They are made in a variety of heights with short and long shanks for wood, angle or channel steel arms, and for two sizes of insulator pin holes, 1 and 1 3/8 inches in diameter. Furnished with nut and washer.

Packed in barrels and kegs in quantity desired.

Cat. No.	Diam. Top	SIZE OF WOOD TOP INCHES		Length of Bolt Below Top, In.	Wt. Lbs. per 100	Price per 100
		Diam. Bottom	Length			
8070	1	1 7/8	4 1/2	1 1/2	55	\$21.48
8071	1	2 1/4	5 1/4	1 1/2	71	27.25
8072	1 3/8	2 1/4	4 1/2	5/8	100	33.50
8073	1 3/8	2 1/4	5 1/4	5/8	104	35.75
8074	1	1 7/8	4 1/2	1 1/2	79	24.58
8075	1	2 1/4	5 1/4	1 1/2	92	30.15
8076	1	2 1/4	5 1/4	1 1/2	103	30.53
8077	1 3/8	2 1/4	4 1/2	5/8	134	39.08
8078	1 3/8	2 1/4	4 1/2	5/8	142	40.58
8079	1 3/8	2 1/4	5 1/4	5/8	149	40.58
8080	1 3/8	2 1/4	6 1/2	6	186	45.28
8081	1 3/8	2 1/2	8	5/8	225	54.42
8082	1 3/8	2 3/4	9	5/8	250	60.00

**No. 3825 Peirce Forged Steel Pins**

Hot Galvanized

For Railway Feeders

For use with composition feeder insulators at points of excessive load.

Weight, pounds, per 100, 276. Std. pkg. 50.

Cat. No.	LENGTH, IN.		DIAM., IN.			Price per 100
	Above Shoulder	Below Shoulder	Shank	Shoulder	Thread	
3825	4 1/4	3 7/8	1 1/4	2 1/2	1	\$83.00



**Peirce Long Shank Forged Steel Pins With 1-Inch Spring Thread**

For Wood Cross Arms

Hot Galvanized

Cat. No.	Diam. In.	LENGTH, INCHES			Std. Pkg.	Wt. Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total			
71	1/2	4 3/4	4 3/4	9 1/2	125	108	\$24.70
74	1/2	4 3/4	5 1/2	10 1/4	100	96	29.50
80	5/8	4 3/4	4 3/4	9 1/2	100	125	30.70
81	5/8	4 3/4	5 1/2	10 1/4	100	149	32.50
81A	5/8	4 3/4	6 1/2	11 1/4	100	144	33.30
82	5/8	6	4 3/4	10 3/4	100	137	35.10
84	5/8	6	5 1/2	11 1/2	100	145	36.50
83	5/8	6	6 1/2	12 1/2	100	155	38.40
90A	3/4	4 3/4	5 3/4	10 1/2	75	189	45.60
90	3/4	6	5 3/4	11 3/4	75	200	49.20
91	3/4	6	6 3/4	12 3/4	100	200	52.80



**Peirce Short Shank Forged Steel Pins with 1-Inch Spring Thread**

For Steel Cross Arms and Brackets

Hot Galvanized

For electric light, telephone and telegraph lines, on which insulators with 1-inch pin holes are used, this pin possesses all the advantages of the well known Western Union type of pin.

The method of fastening the spring thread to the pin allows for expansion and contraction of the insulator but does not lock the insulator to the pin.

Cat. No.	Diam. In.	LENGTH, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total			
72	1/2	4 3/4	1 1/4	6	200	81	\$25.80
86	5/8	4 3/4	1 1/4	6	200	100	28.40
87	5/8	6	1 1/4	7 1/4	150	113	30.90
93A	3/4	4 3/4	1 1/2	6 1/2	150	135	32.00
93	3/4	6	1 1/2	7 1/2	125	164	36.20



**Peirce Long Shank Forged Steel Pins**

With Standard 1-Inch Lead Threads for Low Voltage Insulators

For Wood Cross Arms

Hot Galvanized

Cat. No.	Diam. In.	LENGTH, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total			
971	1/2	4 3/4	4 3/4	9 1/2	100	129	\$24.70
974	1/2	4 3/4	5 1/2	10 1/4	100	130	29.50
980	5/8	4 3/4	4 3/4	9 1/2	100	168	30.70
981	5/8	4 3/4	5 1/2	10 1/4	100	175	32.50
981A	5/8	4 3/4	6 1/2	11 1/4	100	149	33.30
982	5/8	6	4 3/4	10 3/4	100	173	35.10
984	5/8	6	5 1/2	11 1/2	100	185	37.50
983	5/8	6	6 1/2	12 1/2	100	189	38.40
990A	3/4	4 3/4	5 3/4	10 1/2	75	208	45.60
990	3/4	6	5 3/4	11 3/4	100	205	49.20
991	3/4	6	6 3/4	12 3/4	100	215	52.80



**Peirce Short Shank Forged Steel Pins**

With Standard 1-Inch Lead Threads for Low Voltage Insulators

Hot Galvanized

For Steel Cross Arms and Brackets

Cat. No.	Diam. In.	LENGTH, INCHES			Std. Pkg.	Approx. Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total			
972	1/2	4 3/4	1 1/4	6	175	108	\$25.80
986	5/8	4 3/4	1 1/4	6	150	121	28.40
987	5/8	6	1 1/4	7 1/4	100	137	30.90
993A	3/4	4 3/4	1 1/2	6 1/2	100	159	32.00
993	3/4	6	1 1/2	7 1/2	100	119	36.20



## Peirce Lag Screw Forged Steel Pins

With Standard 1-Inch Lead Threads for Low Voltage Insulators

Hot Galvanized

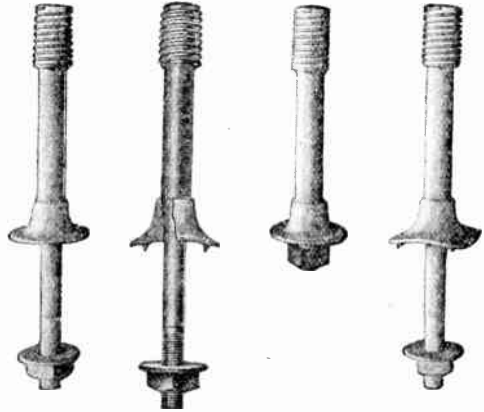
For Pole and Transformer Wiring



Cat. No.	Diam. In.	LENGTH, INCHES			Std. Pkg.	Approx. Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total			
973	1/2	4 3/4	3	7 3/4	100	114	\$24.10
975	1/2	6	3	9	100	116	27.00
988	5/8	4 3/4	3	7 3/4	150	130	27.00
989	5/8	7 1/2	4	11 1/2	100	159	33.00
994	3/4	6	4	10	100	162	38.10

## Hubbard-OB Crossarm Pins

Hot Galvanized



## Peirce Broad Base Forged Steel Pins

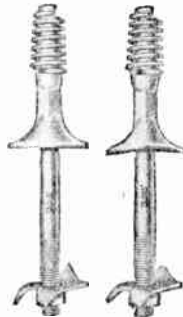
Hot Galvanized

Designed for supporting heavy primary and secondary lines on wood cross arms. Base is 2 1/2 inches wide and made in two styles, for flat top arms and for roofed arms.

Shank, 5/8 inch in diameter, is provided with 2 1/2-inch cut thread.

Spring Thread for 1-In. Pin Hole  
Std. Pkg. No. 1081, 75; No. 1080, 100.

Cat. No.	Base	Above Arm In.	Length Shank In.	Ship. Wt., Lbs. per 100	Price per 100
1080	Curved	4 1/2	5 1/2	178	63.00



Flat Base Curved Base

Cat. No.	Base	Above Arm In.	Length Shank In.	Ship. Wt., Lbs. per 100	Price per 100
1090	Curved	4 1/2	5 1/2	205	63.00

Pins have bases designed to give 100 per cent contact area with the top of the arm, developing the full strength of the wood area involved, and extra strength in the shanks which pass through the cross-arm.

The body portion is made of high grade cold drawn steel. A conical section fits into a corresponding socket in the forged steel base, as illustrated by the cut-away view, the two parts acting as a unit under load. Obtainable with permanent bond lead threads and separable cut steel thimbles.

Complete tabulations covering pins for roofed and flat top arms and flat steel arms sent upon request.

## Peirce Lag Screw Type Forged Steel Transformer Pins

Hot Galvanized



The Peirce Screw Type Pins are in popular use as transformer pins for running leads from the line cross arm to the transformer arm, also for pole work such as running leads from the lighting circuit down the pole to the lighting fixtures.

Spring Thread

Cat. No.	Diam. In.	LENGTH, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total			
73	1/2	4 3/4	3	7 3/4	175	87	\$24.10
75	1/2	6	3	9	150	87	27.00
88	5/8	4 3/4	3	7 3/4	100	88	27.00
89	5/8	7 1/2	4	11 1/2	100	120	33.00
94	3/4	6	4	10	100	145	38.10

## Hubbard Primary Lead Insulators



No. 1650

No. 1660

These insulators have great strength and large leakage distance for high flashover resistance. Ample factor of safety for primary voltages.

Made of high grade wet process porcelain. Wire hole, 1-inch.

Cat. No.	Per 100	Size of Screw	Extension of Wire Inches	Wt. Lbs. per 100
1650	\$69.50	No. 22x2" Brass	3 1/2	200
1660	99.90	1/2"x3" Galv. Lag	5 1/2	230

## No. 125 Peirce Lag Screw Type Forged Steel Transformer Pins

Broad Base

Hot Galvanized



For running leads from the line cross arm to the transformer arm, also for pole work such as running leads from the lighting circuit down the pole to the lighting fixtures.

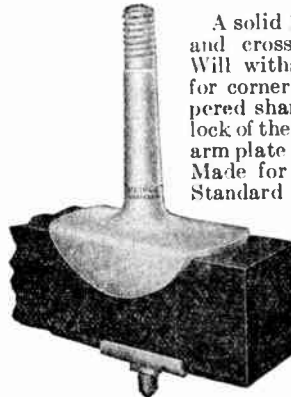
Furnished with No. 22x2-inch wood screw. Diameter pin thread, 1 inch.

Spring Thread

Cat. No.	LENGTH, IN.	Diam. Base In.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
125	Above Shoulder 5 Over All 7	2	175	77	\$28.40

## Peirce Forged Steel Corner Pins

Hot Galvanized



A solid 1-piece forging with 8-inch base and cross arm clamping arrangement. Will withstand 4000 pounds side strain for corner and angle construction. Tapered shank and wings provide a wedge-lock of the pin to cross arm; broad flat cross arm plate assists in reinforcing cross arm. Made for 4x5-inch flat top cross arms. Standard package, 10

Cat. No.	LENGTH SHOULDER INCHES			Wt. Lbs. per 100	Price per 100
	Above	Be- low	Over All		
5428	8	6 1/2	14 1/2	837	\$194.90
5430	9	6 1/2	15 1/2	882	202.80
5432	10	6 1/2	16 1/2	927	211.20
5434	11	6 1/2	17 1/2	959	223.20
5436	12	6 1/2	18 1/2	994	233.20
5064	4x5 Cross Arm Plate	110			14.40



**Peirce Drop Forged Clamp Pins and Corner Plates**  
Hot Galvanized

This pin has all the advantages of the Presteel and channel-type clamp pins and in addition an assembly for angles and corners in the line. The reinforcing plate for corner construction holds the pin rigid against strains of 1200 pounds in any direction. On straight lines the pin is used without the plate and is prevented from shifting by two 1/4-inch lugs.

Made for flat and roofed top arms from 3/4x4 1/4 to 4x5 inches.



Pins					
Cat. No.	Type of Thread	Pin Ht. Above Arm In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
4410	1" Spring	4 3/4	50	148	\$35.40
4420	1" Lead	4 3/4	25	165	35.40

**Reinforcing Plates**

Standard package, 100.



CAT. No.					
Flat Top Arm	Roofed Top Arm	Size Arm In.	Use Strap No.	Wt. Lbs. per 100	Price per 100
5071	5081	3 1/4 x 4 1/4	1001	107	\$16.40
5072	5082	3 1/2 x 4 1/2	1002	111	16.70
5073	5083	3 3/4 x 4 3/4	1003	115	17.40
5074	5084	4 x 5	1004	119	17.50

**Peirce Clamp Pins**

Hot Galvanized

Designed for angle and corner construction and will withstand strains of 2500 pounds without deflection. Each pin is forged from a single piece of new hot rolled open hearth steel and is so constructed that the greatest amount of metal is at the point where the strain is the hardest. Broad base rests evenly on arm, 4 lugs hold pin from turning on the cross arm.



For Flat Top Arm Inches	Pin Ht. Above Arm In.	1-in. Spring Thrd.			1-in. Lead Thrd.			Price per 100
		Cat. No.	Approx. Wt., Lbs. per 100	Std. Pkg.	Cat. No.	Approx. Wt., Lbs. per 100	Std. Pkg.	
3 1/4 x 4 1/4	5 1/2	4310	348	50	4320	368	25	\$55.50
3 1/2 x 4 1/2	5 1/2	4311	348	65	4321	368	50	55.50
3 3/4 x 4 3/4	5 1/2	4312	412	50	4322	432	50	65.70
4 x 5	5 1/2	4313	412	50	4323	432	50	65.70

**Hubbard Cross Arm U-Bolts**

Hot Galvanized

Formed from 3/8-inch round steel.

Cat. No.	DIMEN., INCHES Size Arm	INCHES Diam.	Std. Pkg.	Ship. Price	
				Wt., Lbs. per 100	per 100
1021	3 1/4 x 4 1/4	3/8	300	48	\$9.90
1022	3 1/2 x 4 1/2	3/8	300	54	9.90
1023	3 3/4 x 4 3/4	3/8	300	60	9.90
1024	4 x 5	3/8	250	66	9.90



**Peirce Cross-Arm Straps**

Hot Galvanized

Drop forged from round steel and have a broad flat bearing on the arm, which helps to hold the pins firmly upright. By drop forging from round stock, freedom from flaws is assured, and the threads are always uniform in size.



Light Cross-Arm Straps					
Cat. No.	Size of Arm Inches	SIZE STRAP, INCHES Flat	INCHES Round	Std. Pkg.	Price per 100
1001	3 1/4 x 4 1/4	3/16 x 1 1/8	1/2	100	\$20.10
1002	3 1/2 x 4 1/2	3/16 x 1 1/8	1/2	100	20.90
1003	3 3/4 x 4 3/4	3/16 x 1 1/8	1/2	100	21.90
1004	4 x 5	3/16 x 1 1/8	1/2	100	23.60

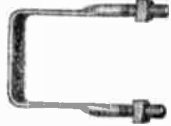
**Heavy Cross-Arm Straps**

2001	3 1/4 x 4 1/4	1/4 x 1 3/8	5/8	75	132	\$25.70
2002	3 1/2 x 4 1/2	1/4 x 1 3/8	5/8	75	138	28.20
2003	3 3/4 x 4 3/4	1/4 x 1 3/8	5/8	75	144	29.40
2004	4 x 5	1/4 x 1 3/8	5/8	75	150	30.90

**Peirce Drop Forged Cross-Arm Straps**

Hot Galvanized

For attaching broad base clamp pins to cross arms, insulated fuse block clamps to cross arms, channel clamp pins to cross arm in a horizontal position, for running vertical leads between the arms.



**Light Cross-Arm Straps**

Cat. No.	Size of Arm Inches	SIZE STRAP, INCHES Flat	INCHES Round	Std. Pkg.	Wt., Lbs. per 100	Price per 100
1871	3 1/4 x 4 1/4	3/16 x 1 1/8	1/2	100	94	\$22.70
1872	3 1/2 x 4 1/2	3/16 x 1 1/8	1/2	100	100	24.60
1873	3 3/4 x 4 3/4	3/16 x 1 1/8	1/2	75	106	27.50
1874	4 x 5	3/16 x 1 1/8	1/2	75	112	29.40

**Heavy Cross-Arm Straps**

1881	3 1/4 x 4 1/4	1/4 x 1 3/8	5/8	75	126	\$23.20
1882	3 1/2 x 4 1/2	1/4 x 1 3/8	5/8	75	133	25.70
1883	3 3/4 x 4 3/4	1/4 x 1 3/8	5/8	75	140	28.20
1884	4 x 5	1/4 x 1 3/8	5/8	75	147	29.90

**Peirce Presteel Cross Arm Saddles**

Hot Galvanized

Used with Peirce Forged Steel Pins on round top cross arms. Pressed from No. 7 gauge sheet steel.



Cat. No.	DIMENS., INCHES		Approx. Shp. Wt., Lbs. per 100 Pieces	Price per 100
	Width Cross Arm	Size Pin Hole		
5001	3 1/4	1 1/8	103	\$11.40
5002	3 1/2	1 1/8	95	13.00
5003	3 3/4	1 1/8	100	14.00
5004	4	1 1/8	103	14.10
5005	5	1 1/8	133	17.50
5011	3 1/4	1 1/16	95	11.40
5012	3 1/2	1 1/16	93	13.00
5013	3 3/4	1 1/16	95	14.00
5014	4	1 1/16	106	14.10
5015	5	1 1/16	112	17.50

**No. 5008 Peirce Malleable Crossarm Saddles**

Hot Galvanized



Solid malleable iron with 1/16-inch pin hole and 4/8-inch radius, adaptable to all sizes of crowned crossarms and provides 100 per cent surface contact.

Grooved for drainage. Holds pin shanks in firm alignment. Fills the void between flat base pins and crossarm crown. Gives pins 35 to 45 per cent more holding strength, proven by actual tests.

Standard package, 100. Weight per 100, 82 pounds.

No. 5008.....per 100 \$13.80

**Hubbard Spring Lock Washers**

Hot Galvanized

Coiled flat from bars of special alloy steel. For use with short shank forged steel pins on steel arms.



Cat. No.	Size Pin Hole, In.	Size of Steel, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
5035	9/16	1 1/4 x 1 1/8	100	1.2	\$1.30
5036	1 1/16	1 3/16 x 5/8	100	2.2	1.70
5037	1 3/16	1/4 x 3/8	100	4.5	2.10

**Lock Washers**

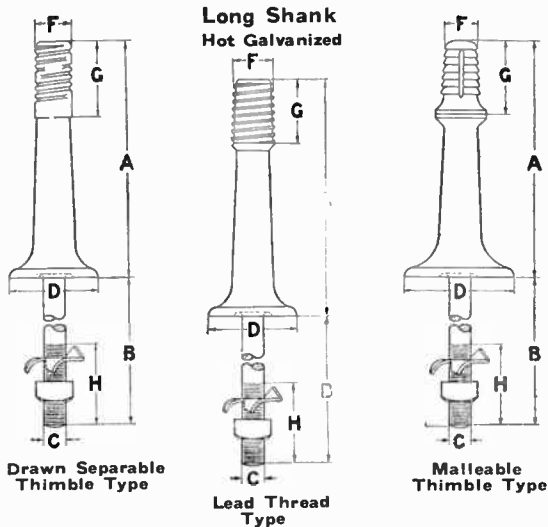
Hot Galvanized

For use on long shank insulator pins to lock nuts on wooden cross arms.



Cat. No.	Size of Pin Hole, In.	Size of Steel, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
5039	9/16	1 1/4 x 1 1/4	500	4.5	\$2.40
5040	1 1/16	1 1/2 x 1 3/4	500	10	4.80
5041	1 3/16	1 1/2 x 1 3/4	500	10	4.80

## Peirce Forged Steel Pins for Wood Arms



The Peirce Pin is a solid forging from a single bar of special treated high carbon steel and has neither welds nor joints. Its strength is uniform in all directions. There are no flanges or webs which must be placed in line with the strain. There are no projections to concentrate electrostatic stresses. The full strength of the pin is carried up to the top of the insulator bore. There is no weakness at the base of the thimble as with malleable pins.

### With Drawn Zinc Separable Thimbles

For Cementing into Insulators with 1-Inch Pin Hole

Cat. No.	DIMENSIONS, INCHES							Std. Pkg.	Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G	H			
5604	4	5 1/2	3/4	2 1/2	27/32	2	1 3/4	125	207	\$54.00
5608	5	5 1/2	3/4	2 1/2	27/32	2	1 3/4	125	221	66.90
5612	6	5 1/2	3/4	2 1/2	27/32	2	1 3/4	100	246	69.00

For Cementing into Insulators with 1 3/8-Inch Pin Hole

Cat. No.	DIMENSIONS, INCHES							Std. Pkg.	Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G	H			
5624	6	6 1/2	3/4	3	17/32	2 1/2	2 3/4	50	404	\$91.70
5626	7	6 1/2	3/4	3	17/32	2 1/2	2 3/4	50	410	94.80
5628	8	7	3/4	3	17/32	2 1/2	2 3/4	50	468	99.20
5630	9	7	3/4	3 1/2	17/32	2 1/2	2 3/4	35	585	114.30
5632	10	7	3/4	3 1/2	17/32	2 1/2	2 3/4	35	645	119.70
5634	11	7	3/4	3 3/4	17/32	2 1/2	2 3/4	30	726	128.40
5636	12	7	3/4	3 3/4	17/32	2 1/2	2 3/4	30	793	135.90
5638	13	7	3/4	3 3/4	17/32	2 1/2	2 3/4	25	848	138.40

### With Lead Threads

For Screwing into Insulators with 1-Inch Pin Hole

Cat. No.	DIMENSIONS, INCHES							Std. Pkg.	Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G	H			
5704	4	5 1/2	3/4	2 1/2	1	1 5/8	1 3/4	125	240	\$65.60
5708	5	5 1/2	3/4	2 1/2	1	1 5/8	1 3/4	125	237	67.60
5712	6	5 1/2	3/4	2 1/2	1	1 5/8	1 3/4	100	266	69.80

For Screwing into Insulators with 1 3/8-Inch Pin Hole

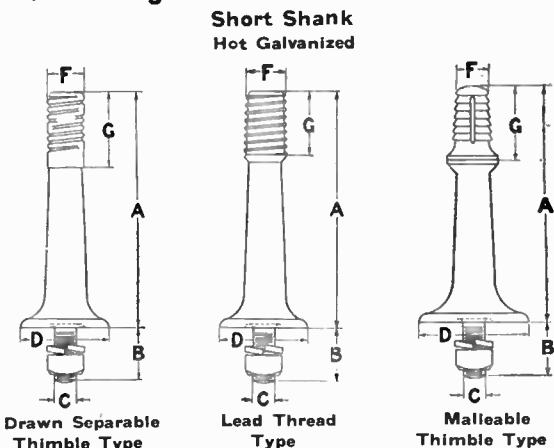
Cat. No.	DIMENSIONS, INCHES							Std. Pkg.	Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G	H			
5724	6	6 1/2	3/4	3	1 3/8	2 1/8	2 3/4	50	460	\$97.80
5726	7	6 1/2	3/4	3	1 3/8	2 1/8	2 3/4	50	480	100.90
5728	8	7	3/4	3	1 3/8	2 1/8	2 3/4	50	516	105.10
5730	9	7	3/4	3 1/2	1 3/8	2 1/8	2 3/4	35	646	119.70
5732	10	7	3/4	3 1/2	1 3/8	2 1/8	2 3/4	35	674	124.90
5734	11	7	3/4	3 3/4	1 3/8	2 1/8	2 3/4	40	840	133.20
5736	12	7	3/4	3 3/4	1 3/8	2 1/8	2 3/4	25	872	140.60
5738	13	7	3/4	3 3/4	1 3/8	2 1/8	2 3/4	25	964	147.90

### With Malleable Thimbles

For Cementing into Insulators with 1 3/8-Inch Pin Hole

Cat. No.	DIMENSIONS, INCHES							Std. Pkg.	Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G	H			
4124	6	6 1/2	3/4	3	1 1/8	2 1/2	2 3/4	50	390	\$100.20
4126	7	6 1/2	3/4	3 3/4	1 1/8	2 1/2	2 3/4	35	450	103.50
4128	8	7	3/4	3 3/4	1 1/8	2 1/2	2 3/4	35	500	107.90
4130	9	7	3/4	3 3/4	1 1/8	2 1/2	2 3/4	25	555	122.90
4132	10	7	3/4	3 3/4	1 1/8	2 1/2	2 3/4	35	610	128.40
4134	11	7	3/4	4 3/4	1 1/8	2 1/2	2 3/4	25	770	137.00
4136	12	7	3/4	4 3/4	1 1/8	2 1/2	2 3/4	25	830	144.50
4138	13	7	3/4	4 3/4	1 1/8	2 1/2	2 3/4	20	989	146.70

## Peirce Forged Steel Pins for Steel Arms



The separable thimble which is a part of the standard pin is drawn from sheet zinc, and the threads are rolled.

The lead thread pin is made the same as the standard, and in addition is notched and so prepared that when the lead thread is cast, it actually becomes a part of the pin.

The malleable thimble pin is also made similar to the standard pin except that the top is threaded with a standard 3/4-inch thread 1 5/8-inch long so that it may be used with any separable malleable thimble. Unless otherwise specified, pin is furnished complete with malleable iron thimbles for cementing into insulators with a 1 3/8-inch hole.

### With Drawn Zinc Separable Thimbles

For Cementing into Insulators with 1-Inch Pin Hole

Stock No.	DIMENSIONS, INCHES						Std. Pkg.	Wt., Lbs. per 100	Approx. Price per 100
	A	B	C	D	F	G			
5603	4	1 3/4	3/4	2 1/2	27/32	2	100	154	\$54.00
5607	5	1 3/4	3/4	2 1/2	27/32	2	100	171	56.10
5611	6	1 3/4	3/4	2 1/2	27/32	2	75	204	58.20

For Cementing into Insulators with 1 3/8-Inch Pin Hole

Stock No.	DIMENSIONS, INCHES						Std. Pkg.	Wt., Lbs. per 100	Approx. Price per 100
	A	B	C	D	F	G			
5623	6	1 3/4	3/4	3	17/32	2 1/2	50	316	\$76.70
5625	7	1 3/4	3/4	3	17/32	2 1/2	50	354	79.80
5627	8	1 3/4	3/4	3	17/32	2 1/2	40	498	84.10
5629	9	1 3/4	3/4	3 1/2	17/32	2 1/2	50	494	99.20
5631	10	1 3/4	3/4	3 1/2	17/32	2 1/2	50	554	104.60
5633	11	1 3/4	3/4	3 3/4	17/32	2 1/2	50	616	113.10
5635	12	1 3/4	3/4	3 3/4	17/32	2 1/2	45	540	120.80
5637	13	1 3/4	3/4	3 3/4	17/32	2 1/2	35	748	123.90

### With Lead Threads

For Screwing into Insulators with 1-Inch Pin Hole

Stock No.	DIMENSIONS, INCHES						Std. Pkg.	Wt., Lbs. per 100	Approx. Price per 100
	A	B	C	D	F	G			
5703	4	1 3/4	3/4	2 1/2	1	1 5/8	100	186	\$55.20
5707	5	1 3/4	3/4	2 1/2	1	1 5/8	100	118	57.30
5711	6	1 3/4	3/4	2 1/2	1	1 5/8	75	212	59.30

For Screwing into Insulators with 1 3/8-Inch Pin Hole

Stock No.	DIMENSIONS, INCHES						Std. Pkg.	Wt., Lbs. per 100	Approx. Price per 100
	A	B	C	D	F	G			
5723	6	1 3/4	3/4	3	1 3/8	2 1/8	75	382	\$83.30
5725	7	1 3/4	3/4	3	1 3/8	2 1/8	45	413	86.40
5727	8	1 3/4	3/4	3	1 3/8	2 1/8	35	414	90.60
5729	9	1 3/4	3/4	3 1/2	1 3/8	2 1/8	50	560	105.10
5731	10	1 3/4	3/4	3 1/2	1 3/8	2 1/8	50	606	110.30
5733	11	1 3/4	3/4	3 3/4	1 3/8	2 1/8	45	703	118.70
5735	12	1 3/4	3/4	3 3/4	1 3/8	2 1/8	40	792	125.90
5737	13	1 3/4	3/4	3 3/4	1 3/8	2 1/8	35	832	133.20

### With Malleable Thimbles

For Cementing into Insulators with 1 3/8-Inch Pin Hole

Stock No.	DIMENSIONS, INCHES						Std. Pkg.	Wt., Lbs. per 100	Approx. Price per 100
	A	B	C	D	F	G			
4123	6	1 3/4	3/4	3	1 1/8	2 1/2	50	320	\$85.20
4125	7	1 3/4	3/4	3 3/4	1 1/8	2 1/2	50	380	88.40
4127	8	1 3/4	3/4	3 3/4	1 1/8	2 1/2	60	422	92.70
4129	9	1 3/4	3/4	3 3/4	1 1/8	2 1/2	35	485	107.90
4131	10	1 3/4	3/4	3 3/4	1 1/8	2 1/2	35	540	113.10
4133	11	1 3/4	3/4	4 3/4	1 1/8	2 1/2	25	700	121.80
4135	12	1 3/4	3/4	4 3/4	1 1/8	2 1/2	25	755	129.40
4137	13	1 3/4	3/4	4 3/4	1 1/8	2 1/2	25	913	132.30

## No. 5018 Peirce Lead Thread Thimbles

### Malleable Thimble Type

This thimble is made by casting lead threads on the No. 5019 thimble adapter and is used with pins having a standard 3/4-inch center bolt or with Peirce No. 4100 series pin.

The lead thread is made to screw directly into an insulator having a 1 3/8-inch pin hole.



Cat. No.	For Insulator Pin Hole In.	Hole in Thimble In.	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
5018	1 3/8	3/4	200	130	\$32.50

## Peirce Lead Thread Separable Thimbles Drawn Thimble Type

While the cementing of thimbles into the insulators is recommended as being the most dependable method, there are cases, for instance, where wood pins are being replaced with forged steel pins, in which the cost and trouble of cementing the thimbles are too great.

For such conditions standard Peirce drawn zinc thimbles are furnished with lead threads cast on them, so that insulators can be screwed on the thimbles mounted on the pins instead of having the thimbles cemented into the insulators and then screwed on the pins. These thimbles may be used on No. 5600 series forged steel pins, high voltage clamp pins, and pole top pins.



Cat. No.	For Insulator Pin Hole, In.	Size of Thimble, In.	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
5020	1	27/32	500	24	\$20.90
5025	1 3/8	1 1/32	250	47	25.00

## No. 5019 Peirce Thimble Adapters

Hot Galvanized

Provides a method for using insulators, in which Peirce Drawn Thimbles are cemented, on old lines equipped with cast iron separable thimbles.



Cat. No.	DIMEN., IN.			Ship. Wt., Lbs. per 100	Price per 100
	Outside Thread	Inside Thread	Height		
5019	1 1/32	3/4	3	56	\$20.90

## Peirce Presteel Centering Washers

Hot Galvanized

Used on the lower end of Peirce Forged Steel Pins to center the pin when used on arms bored for wood pins.

Cat. No.	To Fit Hole Inches	Pin Hole Inches	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
5030	1 1/4	1 3/16	500	28	\$9.30
5031	1 1/4	1 1/16	500	27	9.30
5032	1 1/2	1 3/16	500	31	9.30
5033	1 1/2	1 1/16	500	29	9.30



## Peirce Solid Steel Pole Top Pins

Hot Galvanized



### No. 3120

This type of pole top pin is made of a solid bar of special stiff steel. The two bolt holes at right angles permit the lining up of the wire groove of the insulator.

### Lead Thread

#### For 1 3/8-Inch Insulator Pin Hole

Cat. No.	DIMENSIONS INCHES		Std. Pkg.	Weight Pounds per 100	Price per 100
	Spacing of Through and Eye Bolt	Length Over All			
3120	8	1	20	10	\$93.90
3124	8	1	24	15	110.60
3125	8	1 1/8	24	10	138.60
3131	10	1 1/8	30	10	153.90
3137	10	1 1/8	36	10	183.90

### Separable Zinc Thimble

#### For Cementing Into 1 3/8-Inch Insulator Pin Hole

3220	8	1	20	10	460	\$93.90
3224	8	1	24	10	550	110.60
3225	8	1 1/8	24	10	690	138.60
3231	10	1 1/8	30	10	870	153.90
3237	10	1 1/8	36	10	1050	183.90

### \*Malleable Iron Thimble

#### For Cementing Into 1 3/8-Inch Insulator Pin Hole

3420	8	1	20	10	470	\$98.10
3424	8	1	24	10	560	114.80
3425	8	1 1/8	24	10	700	144.70
3431	10	1 1/8	30	10	880	158.10
3437	10	1 1/8	36	10	1060	188.00

### Eye Bolts



No. 3151



No. 4151

### For 1-Inch Pin

Curved Shoulder Type	Broad Washer Type	Length to Center of Eye Inches		Std. Pkg.	Weight Pounds per 100	Price per 100
		Di- ameter Inches				
3149	4149	10	5/8	50	129	\$28.40
3151	4151	12	5/8	50	145	31.70
3153	4153	14	5/8	50	161	35.40

### For 1 1/8-Inch Pin

3150	4150	10	5/8	50	129	\$28.40
3152	4152	12	5/8	50	149	31.70
3154	4154	14	5/8	50	161	35.40

\*Unless otherwise specified, pins come complete with Thimble No. 5021. Adapter may be used.

## Hubbard Ridge Irons

Hot Galvanized

Fastened to pole by four 1/2-inch lag screws, holes staggered to prevent splitting pole top.

Pins not included in prices.



Cat. No.	Steel In.	DIMENS., INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Ht.	Pole	Pin Hole			
9407	2 1/4 x 1/8	7	6	9/16	10	140	\$42.50
9408	2 3/4 x 3/16	8	7	11/16	5	280	66.80
9409	2 3/4 x 1/4	8 1/4	7	13/16	5	450	81.80
9410	3 x 1/4	18 1/2	7	13/16	5	888	155.85





## Peirce Presteel Pole Top Pins

Hot Galvanized



No. 3048

Peirce Presteel Pins are made from No. 9 gauge sheet steel, which gives the maximum strength for a given weight.

Mounting holes are  $\frac{1}{16}$ -inch.

### Spring Thread Type

Cat. No.	Length Overall Inches	Hole Spacing Inches	Diam. of Thread Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
3040	18	8	1	5	300	\$72.20
3045	24	8	1	5	380	98.40

### Lead Thread Type

3034	18	8	1	50	340	\$72.20
3039	18	8	1 $\frac{3}{8}$	50	402	88.80
3044	24	8	1	7	500	98.40
3049	24	8	1 $\frac{3}{8}$	6	650	115.00

### Separable Zinc Thimble Type

3042	18	8	2 $\frac{7}{32}$	10	275	\$86.70
3043	18	8	1 $\frac{7}{32}$	5	320	86.70
3047	24	8	2 $\frac{7}{32}$	5	360	112.50
3048	24	8	1 $\frac{7}{32}$	10	406	112.50

## Peirce Pipe Pole Top Pins

For  $\frac{1}{8}$ -inch Pin Hole

For the higher voltage lines the extra heavy pipe pins are in general use, because of their strength and light weight.

Mounting holes are  $\frac{1}{16}$ -inch.

### With Separable Zinc Thimble

Cat. No.	Size of Pipe Inches	Length Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
3060	1 $\frac{1}{4}$	18	5	340	\$96.50
3061	1 $\frac{1}{2}$	18	10	340	149.20
3063	1 $\frac{1}{2}$	24	5	700	178.40
3065	1 $\frac{1}{2}$	28	10	655	208.40
3066	2	28	2	1200	255.90
3067	1 $\frac{1}{2}$	32	10	745	220.80
3068	2	32	10	995	294.90
3069	2	36	10	1115	334.10

### Lead Thread

3070	1 $\frac{1}{4}$	18	10	415	\$96.50
3071	1 $\frac{1}{2}$	18	10	457	137.20
3073	1 $\frac{1}{2}$	24	5	520	178.40
3075	1 $\frac{1}{2}$	28	10	710	239.40
3076	2	28	19	929	309.00
3077	1 $\frac{1}{2}$	32	10	800	220.80
3078	2	32	2	1500	325.80
3079	2	36	2	1700	365.00

### \*Malleable Thimble

3080	1 $\frac{1}{4}$	18	10	220	\$104.70
3081	1 $\frac{1}{2}$	18	10	340	157.40
3083	1 $\frac{1}{2}$	24	10	703	186.50
3085	1 $\frac{1}{2}$	28	10	823	216.60
3086	2	28	10	1098	264.30
3087	1 $\frac{1}{2}$	32	10	945	228.90
3088	2	32	10	1265	303.30
3089	2	36	10	1433	342.30

\*Unless otherwise specified, pins come complete with thimble No. 5021. Adapters may be used.

## Hubbard Strain Insulator Clevises

Hewlett Suspension Type

Hot Galvanized

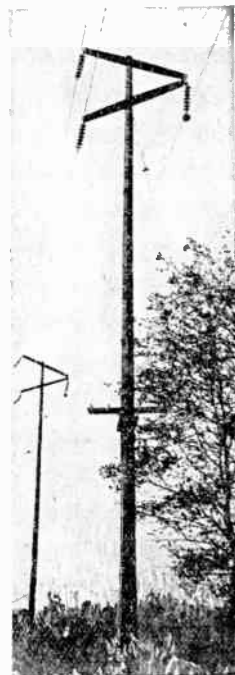
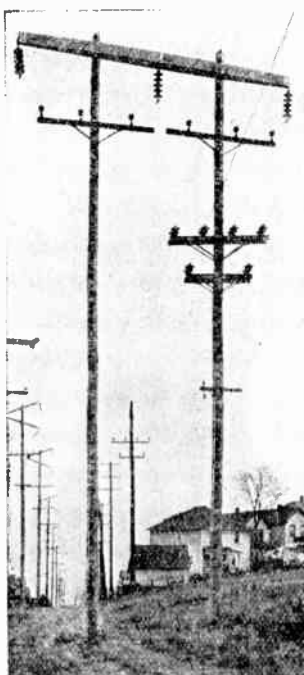


This clevis is made from  $\frac{1}{2}$ -inch round steel with drop-forged eyes that accommodate the  $\frac{3}{8}$ -inch curved clevis bolt.

Fits the 6, 7  $\frac{1}{2}$  and 10-inch Hewlett Insulators. Ultimate strength, 5000 pounds. Should be used only for light strains.

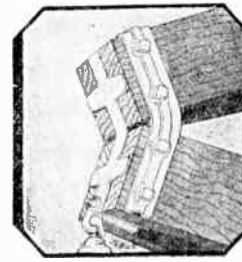
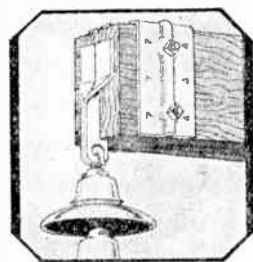
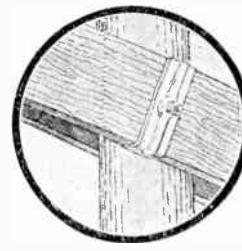
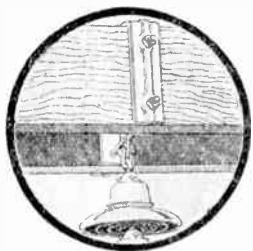
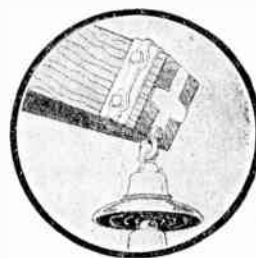
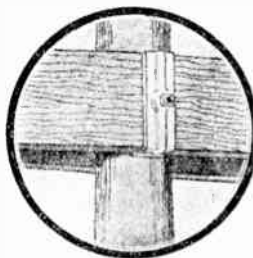
Cat. No.	DIMENSIONS, INCHES				Width Eye	Std. Pkg.	Weight Pounds per 100	Price per 100
	Diam. Clevis	Diam. Bolt	Length Inside	Width Inside				
895	$\frac{1}{2}$	$\frac{3}{8}$	1 $\frac{15}{16}$	3 $\frac{3}{32}$	1 $\frac{1}{8}$	200	68	\$40.00

## Hubbard High Tension Crossarm Hardware Fittings



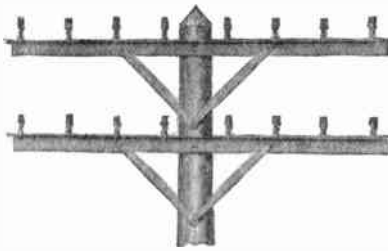
High Tension Crossarm Hardware Fittings for double-plank H-frame and wishbone crossarm construction are obtainable to meet various specifications.

Inquiries and designs for estimates are invited.



**Hubbard Angle Steel Cross Arms**

Hot Galvanized



Steel arms of a given cross section are uniform in strength, and when protected by hot-dip galvanizing, their strength remains uniform throughout the life of the zinc coating, probably thirty years.

Unless otherwise specified, holes will be of the following sizes: for through bolts, 1/16 inch; for brace bolts, 3/16 inch for flat braces and 1/8 inch for angle braces; and for pins, 13/16 inch. Quotations on special arms will be given promptly.

**Telephone Arms**

Cat. No.	No. Pins	Lgth. In.	Punched for Brace No.	PIN SPACING, IN.		Size Angle Inches	Ship. Wt., Lbs. Each	Price Each
				Pole Pins	Side Pins			
7602	2	20	8020	16	..	3 x2 x 3/16	5 1/4	.....
7604	4	40	8020	16	10	3 x2 x 3/16	10 1/4	.....
7606	6	60	8022	16	10	3 x3 x 1/4	24 1/2	.....
7608	8	80	8030	16	10	3 x3 x 1/4	32 3/4	.....
7610	10	100	8032	16	10	3 x3 x 1/4	41	.....

**Electric Light Arms—N. E. L. A. Standard Spacing**

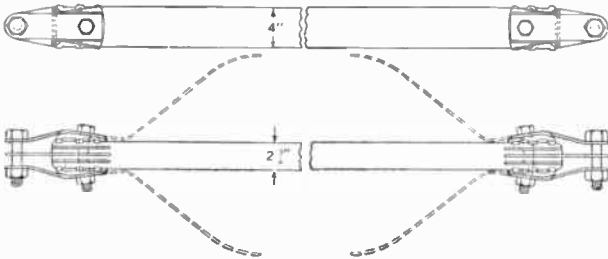
7612	2	36	8120	30	...	3 x3 x 1/4	14 3/4	.....
7614	4	65	8126	30	14 1/2	3 x3 x 1/4	26 1/2	.....
7616	6	94	7940	30	14 1/2	3 1/2 x 3 1/2 x 5/16	56 1/2	.....
7620	8	117 3/4	7941	30	13 5/8	3 1/2 x 3 1/2 x 5/16	70 3/8	.....

**Power Transmission Arms**

7622	2	28	8120	24	..	3 x3 x 1/4	11 3/8	.....
7632	2	40	8120	36	..	3 x3 x 1/4	16 3/8	.....
7642	2	52	8120	48	..	3 x3 x 1/4	21 7/8	.....
7672	2	80	7940	74	..	3 1/2 x 3 1/2 x 5/16	48	.....
7624	4	76	7950	24	24	3 x3 x 1/4	31 2/3	.....
7634	4	116	7942	38	36	3 1/2 x 3 1/2 x 5/16	69 1/2	.....

**Hubbard-OB Wood Strain Insulators**

Metal Parts Hot Galvanized



Wood strain insulators with special yokes, straps, wedge plates, friction plates and arcing horns, provide permanently tight mechanical guys and electrically correct insulators for the structure. Qualifications of Hubbard-OB Wood Strain Insulators are:

The wood fibres are in compression, not in shear with the grain of the wood.

The self-tightening wedge grip automatically maintains the original ultimate strength of the assembly even though the wood shrinks.

The constantly tight connection between end casting and wood surface reduces electrical resistance at point of contact and prevents burning.

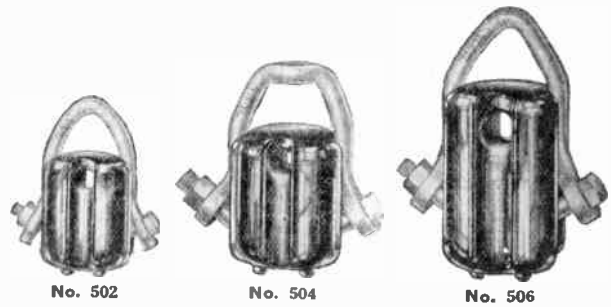
Arcing horns provide a discharge gap for passing of excess voltages without shattering the wood.

Pole band attachments are obtainable for mounting insulators close to the pole and save the use of two clamps and a length of strand.

Cat. No.	6-FOOT LENGTH CLEAR WOOD			9-FOOT LENGTH CLEAR WOOD			Ult. Tension Lbs.
	Per 100	Std. Pkg.	Wt., Lbs. per 100	Per 100	Std. Pkg.	Wt., Lbs. per 100	
30594	.....	..	4700	.....	..	5500	7000
30478	.....	..	5000	.....	..	5800	12000
29647	.....	..	5300	.....	..	6100	24000
30783	.....	..	6900	.....	..	8500	36000

**Peirce Strain Insulators**

Standard Type—Dry Process



The Peirce Standard Type Strain Insulators are made in accordance with the specifications of the National Electric Light Association.

They are produced from the highest grade of dry process porcelain and are designed so that all sharp corners and edges have been eliminated.

An exclusive feature of the Peirce Strain Insulator is the radius of the wire groove, which is so designed that it gives a maximum bearing surface on the clevis bolt and may be used equally as well with guy strand or insulated wire.

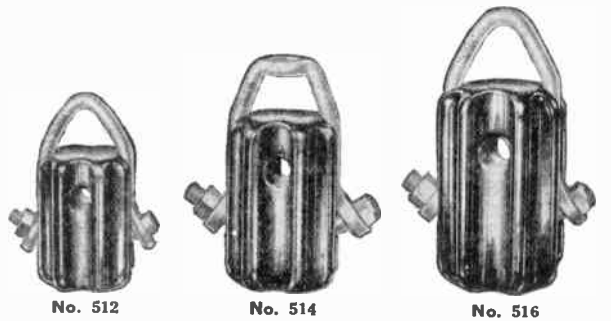
Peirce Dry Process Insulators are ordinarily used for dead-ending secondary circuits and for guying.

No. 502 is used with clevis No. 805, light type, No. 825, heavy type or No. 845, eye type. No. 504 is used with clevis No. 807, light type, No. 827, heavy type or No. 847, eye type. No. 506 is used with No. 811, light type, No. 831, heavy type or No. 851, eye type.

Cat. No.	Hole	DIAMETER, INCHES		Std. Pkg.	Weight Pounds per 100	Price per 100
		Over All	Over Groove			
502	9/16	25/8	17/8	50	101	\$23.40
504	9/16	27/8	2 1/8	50	148	27.50
506	13/16	3 3/8	2 3/8	25	276	55.00

**Peirce Strain Insulators**

Multi-Fin Type—Wet Process



For dead-ending primary circuits and guying of high tension lines Peirce Multi-Fin Strain Insulators possess every feature required for dependable, continuous service.

They are made from thoroughly vitrified wet process porcelain and are designed with rugged fins and well rounded edges, which eliminate the possibility of chipping due to rough handling or abuse after installation.

The radius of the wire groove is so designed that it gives a maximum bearing surface on the clevis bolt and may be used equally as well with guy strand or insulated wire.

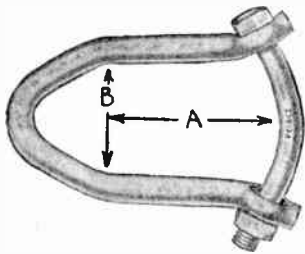
No. 512 is used with clevis No. 805, light type, No. 825, heavy type or No. 845, eye type. No. 514 is used with clevis No. 807, light type, No. 827, heavy type or No. 847, eye type. No. 516 is used with clevis No. 811, light type, No. 831, heavy type or No. 851 eye type.

Cat. No.	Hole	DIAMETER, INCHES		Line Voltage	Std. Pkg.	Weight Pounds per 100	Price per 100
		Over All	Over Groove				
512	5/8	2 11/16	1 7/8	2200	50	152	\$30.00
514	3/4	3 1/16	2 3/8	4400	25	258	61.50
516	7/8	3 3/8	2 3/8	6600	20	504	83.30

## Hubbard Strain Insulator Clevises

Hot Galvanized

Light Type



No. 803

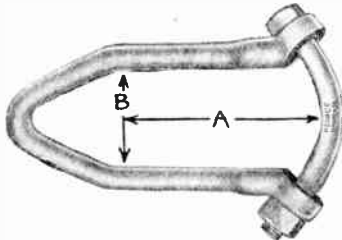
The light type clevis is drop-forged from 7/16-inch diameter open hearth steel. Has an ultimate strength of 8000 pounds and is equipped with a 3/8-inch bolt. An eye 1-inch inside diameter is required to accommodate this clevis.

Cat. No.	DIMEN., IN.	Approx. Ship. Wt., Lbs. per 100	Price per 100
	A B		
801	3 1 1/2	67	\$25.50
802	4 1 1/2	76	27.60
803	3 1 3/4	71	25.80
804	4 1 3/4	86	27.60
805	3 2	74	26.20
806	4 2	93	28.00

Cat. No.	DIMEN., IN.	Approx. Ship. Wt., Lbs. per 100	Price per 100
	A B		
807	3 2 1/4	73	\$25.00
808	4 2 1/4	84	28.60
809	5 2 1/4	109	30.30
810	3 2 1/2	77	27.30
811	4 2 1/2	107	30.80
812	5 2 1/2	93	30.80

Heavy Type

The heavy type clevis is drop-forged from 1/2 inch diameter open hearth steel. Has an ultimate strength of 13000 pounds and is equipped with a 1/2-inch bolt. An eye 1 1/2-inch inside diameter is required to accommodate this clevis.

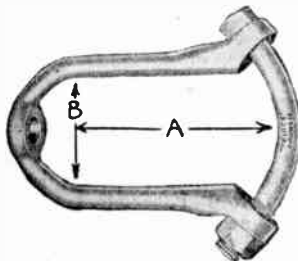


No. 823

Cat. No.	DIMEN., IN.	Approx. Ship. Wt., Lbs. per 100	Price per 100
	A B		
821	3 1 1/2	109	\$32.50
822	4 1 1/2	124	35.10
823	3 1 3/4	117	32.50
824	4 1 3/4	127	43.70
825	3 2	109	33.30
826	4 2	133	35.10
827	3 2 1/4	120	32.50

Cat. No.	DIMEN., IN.	Approx. Ship. Wt., Lbs. per 100	Price per 100
	A B		
828	4 2 1/4	136	\$35.90
828 1/2	4 1/2 2 1/4	126	36.30
829	5 2 1/4	145	36.70
830	3 2 1/2	128	42.50
831	4 2 1/2	138	36.30
831 1/2	4 1/2 2 1/2	131	36.60
832	5 2 1/2	146	37.50

Eye Type



No. 843

The eye type clevis is similar to the heavy type, except that it has a drop-forged eye in the croch of the clevis which is provided with an 1/16-inch hole. This hole permits the clevis to be attached to the head end of a through bolt, nut end of a through bolt, double arming bolt, eye bolt, or double arming eye bolt.

Cat. No.	DIMEN., IN.	Approx. Ship. Wt., Lbs. per 100	Price per 100
	A B		
841	3 1 1/2	124	\$48.30
842	4 1 1/2	139	53.30
843	3 1 3/4	124	49.10
844	4 1 3/4	137	54.00
845	3 2	129	50.00
846	4 2	128	54.90
847	3 2 1/4	132	50.70

Cat. No.	DIMEN., IN.	Approx. Ship. Wt., Lbs. per 100	Price per 100
	A B		
848	4 2 1/4	136	\$51.60
848 1/2	4 1/2 2 1/4	141	60.00
849	5 2 1/4	142	60.60
850	3 2 1/2	128	52.00
851	4 2 1/2	144	50.10
851 1/2	4 1/2 2 1/2	144	61.20
852	5 2 1/2	154	61.90

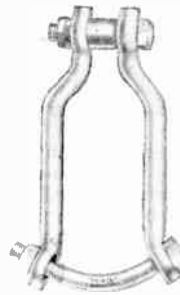
## Hubbard Strain Insulator Clevises

Barmack Drop-Forged Type (Patented)

Hot Galvanized

Designed for dead-ending or anchoring lines.

It is furnished complete with a 3/8x2-inch machine bolt, pipe spacer, lock washer and 3/8-inch curved machine bolt.



Cat. No.	In-side Lgth. In.	In-side Wdth. In.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
861	3	1 1/2	125	94	\$33.50
863	5	1 1/2	100	111	41.70
867	3	2 1/2	125	95	37.20
869	5	2 1/2	100	115	45.40

## Hubbard Strain Insulator Clevises

Drop-Forged Double Type

Hot Galvanized

With this type of clevis two strain insulators can be assembled in a series.

The light type is made from 7/16-inch round steel and equipped with 3/8-inch curved bolts.

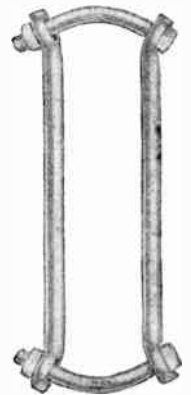
The heavy type is drop-forged from 1/2-inch diameter open hearth steel. It is equipped with 1/2-inch bolt.

Light Type

Cat. No.	Inside Length Inches	Inside Width Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
881	8	1 1/2	100	124	\$41.70
882	8	2	100	126	43.40
883	8	2 1/2	100	128	45.00
884	10	1 1/2	100	141	48.30
885	10	2	85	143	50.70
886	10	2 1/2	75	148	63.30
887	12	1 1/2	50	160	61.90
888	12	2	50	166	63.80
889	12	2 1/2	50	170	66.70

Heavy Type

Cat. No.	Inside Length Inches	Inside Width Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
781	8	1 1/2	100	135	\$58.30
782	8	2	100	144	58.30
783	8	2 1/2	100	153	58.30
784	10	1 1/2	100	153	63.30
785	10	2	100	162	63.30
786	10	2 1/2	100	171	63.30
787	12	1 1/2	100	173	66.60
788	12	2	100	182	66.60
789	12	2 1/2	100	191	66.60



No. 885

## Hubbard Strain Insulator Clevises

Copper Bale Single Type

Hot Galvanized

Has a bale made of soft metal (copper) to equalize the strains over the entire bearing surface of the insulator.

The drop-forged yoke may be used through the eye of a standard 3/4-inch eye bolt, No. 7502 eye nut or No. 7515 Bolt Eye. The head of the copper bale is 3/4-inch diameter. Ultimate strength, 8000 pounds.



Cat. No.	Inside Length Inches	Inside Width Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
1535	5 3/8	2 3/4	150	97	\$80.80



**Hubbard Flexible Bail Strain Insulator Clevises**



This clevis develops the maximum strength of porcelain strain insulators by means of the form-fitting bail which eliminates concentrated stresses. Can be used with eyebolts, machine and double-arming bolts and also interlocked for series combination.

Clevis has galvanized drop-forged universal mounting yoke and 1/8-inch flexible strand bail with 1/2-inch diameter threaded steel studs. Bail is galvanized steel strand or copperweld strand and can be set at 2 1/4 and 3-inch spacing. Inside width of bail loops, 1 3/4 to 2 1/2 inches. Hexagon nuts are trapped in the yoke.

Length Inside Loop Inches	GALVANIZED BAIL		COPPERWELD BAIL		Std. Pkg.	Weight Pounds per 100
	Cat. No.	Per 100	Cat. No.	Per 100		
*4	1552	\$59.10	1562	\$74.10	75	145
*4 3/4	1554	59.10	1564	77.10	75	150
*5 1/2	1556	59.10	1566	81.60	75	155

\*Sizes vary according to insulator used and nut-setting.

**Peirce Thimble Clevises**

Hot Galvanized

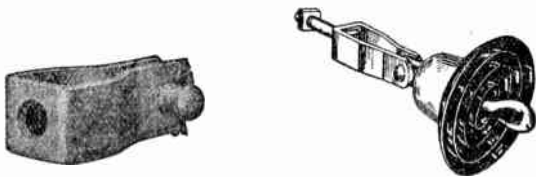


Peirce Thimble Clevises dead-end lines 3/4 inch or under to suspension insulators. Both clevises are developed from the same size of drop-forging and have a minimum radius of 5/8 inch.

Cat. No.	Per 100	Diameter Bolt Inches	Ultimate Strength Pounds	Std. Pkg.	Wt. Lbs. per 100
654	\$22.20	1/2	15000	150	105
655	25.80	5/8	20000	150	111

**Klauber Universal Dead Ending Clevises**

Hot Galvanized



No. 555 Clevis

Eye Connection

This clevis is the only one made that will anchor a metal cap strain insulator with any one of the three types of connections—eye, clevis and hook—on the end of a bolt through the side of a cross arm or building. Where a variety of insulators are used, the universal clevis is a necessity. Forged from flat steel 3/16x1 1/2 in., and fits both 1/2 and 5/8-inch bolts. Weight, 87 pounds per hundred.

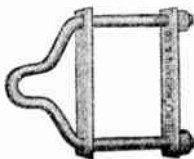
Price, No. 555 Clevises.....per 100 \$25.00

**Peirce Cross Arm Clevises**

Hot Galvanized

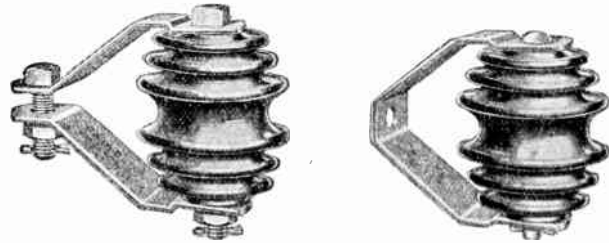
For dead ending wires on wood arms.

Cat. No.	Size Arm Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
549	3 1/4 x 1 1/4	100	160	\$43.40
550	3 1/2 x 1 1/2	100	160	50.10
551	3 3/4 x 1 3/4	100	160	52.20
552	4 x 5	100	160	54.30



**Peirce Corner and Dead End Clevises**

Hot Galvanized



No. 1330, Open Type

No. 1344, Closed Type

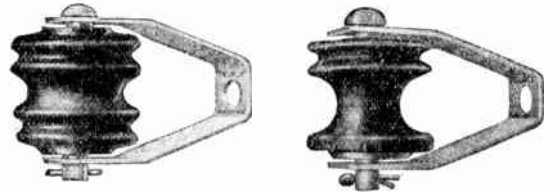
Strong, durable and efficient fixtures for corner attachment and dead-end services on medium voltage lines. Also adaptable to series street lighting circuits. For pole and crossarm installation. The insulator is wet process, having a high flashover rating.

Open type is equipped with 5/8-inch insulator and fastening bolts; closed type has 5/8-inch insulator, bolt and 1/16-inch hole for fastening bolt.

Cat. No.	Per 100	Material Size Steel Inches	Clevis Wet Flashover Volts	Mechanical Strength Lbs.	Std. Pkg.	Wt. Lbs. per 100
1330	\$108.30	1/4 x 1 1/2	10000	5500	30	580
1344	108.30	1/4 x 1 1/2	8000	4500	30	530

**Peirce Insulated Clevises With Wet and Dry Process Insulators**

Hot Galvanized



No. 1340

No. 1342

For primary and secondary lines. Nos. 1339 and 1340 have wet process insulators for use on primary circuits up to 4000 and 6000 volts, respectively. Nos. 1341 and 1342 have dry process insulators for use on secondary lines.

Clevis yokes for all clevises are No. 11 gauge by 1 1/2-inch steel, have 1/16-inch mounting holes; equipped with 5/8-inch cotter bolts and brass cotters.

Cat. No.	Per 100	Style of Insulator	Length to Center of Bolt, In.	Std. Pkg.	Wt. Lbs. per 100
1339	\$38.50	No. 1608	4 3/16	125	132
1340	48.60	No. 1609	4 13/16	25	288
1341	32.10	No. 1606	4 3/16	125	119
1342	42.00	No. 355	4 13/16	25	276

**Peirce Secondary Racks**

Chicago Type

Hot Galvanized

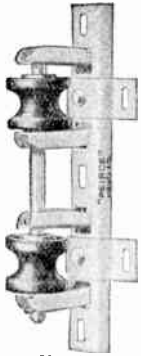


Chicago type racks consist of presteel U-shaped points made of No. 12 gauge steel securely riveted to a 1/4x1 1/4-inch flat steel back. The insulators are attached to the rack with a 5/8-inch button head bolt. Pole mounting holes are 1 1/16x1-inch for use with either 5/8-inch through bolts or lag screws. No. 355 insulators are standard equipment. Nos. 356, 455, 456 and 465 insulators can be used.

Cat. No.	No. of Line Wires	DIMEN., IN. Wire Spacing	Over All Length	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
248	2	8	12 1/2	10	587	\$118.20
344	3	4	12 1/2	10	687	126.60
348	3	8	20 1/2	5	900	178.20
448	4	8	28 1/2	5	1240	238.10
544	5	4	20 1/2	5	1110	194.80

## Peirce Heavy Presteel Secondary Racks

Hot Galvanized



No. 278

Of sufficient weight and strength for general secondary work; however, for long spans and cable construction Standard Pierce Racks are recommended.

Made of a presteel channel back; presteel channel U-shaped points inserted through and riveted to the back, and a 5/8-inch through rod for attaching No. 355 insulators to points.

The Nos. 278, 374, 378 and 478 are furnished with straps so that they may be used on buildings for making heavy service connections. When used on poles, the straps should be hammered flat against the pole, increasing the bearing surface. The Nos. 1278, 1374, 1378 and 1478 may be used in connection with Peirce Rack Bands for attaching the racks to tubular steel poles.

Cat. No.	No. of Line Wires	DIMENSIONS, INCHES		Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
		Wire Spacing	Length Over All			
278	2	8, with Straps	16 1/2	10	660	\$118.40
374	3	4, with Straps	16 1/2	10	654	130.80
378	3	8, with Straps	24 1/2	10	1000	194.20
478	4	8, with Straps	32 1/2	10	1172	256.70
1278	2	8, without Straps	16 1/2	10	600	109.20
1374	3	4, without Straps	16 1/2	10	614	121.70
1378	3	8, without Straps	24 1/2	10	910	181.70
1478	4	8, without Straps	32 1/2	10	1250	232.70

## Peirce Light Presteel Secondary Racks

Hot Galvanized

These racks were designed for light secondary work. They are especially adaptable, on account of their strength and low cost, for running extensions from secondary mains; for lines where future development is limited; and for house service connections.

The light presteel racks have a presteel channel back 1 1/2 x 3/16-inch; No. 12 gauge channel U-shaped points, which are inserted through and riveted to the back, and a 1/2-inch insulator bolt for attaching the No. 1606 insulators to the points.

When 4-inch spacing racks are specified, a shield for attaching over the upper edges of the points, is furnished to prevent injury to the insulation when stringing the wire.



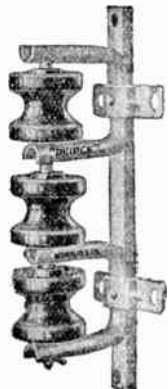
No. 276

Cat. No.	No. of Line Wires	DIMENSIONS, INCHES		Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
		Wire Spacing	Length Over All			
276	2	6, with Straps	13 1/4	10	374	\$83.20
376	3	6, with Straps	19 1/4	10	570	116.70
476	4	6, with Straps	25 1/4	10	740	135.00
1276	2	6, without Straps	13 1/4	10	320	75.00
1376	3	6, without Straps	19 1/4	10	480	108.30
1476	4	6, without Straps	25 1/4	10	594	127.50
2768	2	8, without Straps	16 1/2	10	360	81.70
3768	3	8, without Straps	24 1/2	10	550	116.40

## Peirce Light Presteel House Racks

Hot Galvanized

For use as house brackets. Sometimes used for carrying secondary wires vertically on the poles where the wire is lighter than No. 3 wire. Made with 3/4-inch channel back and presteel points. Mounting slots are 7/16 x 1/2-inch, both in the back and straps. Insulator through bolt is 3/8-inch diameter. Racks assembled with No. 1603 insulator.



Cat. No.	No. of Line Wires	Wire Spacing Inches	Length Over All Inches	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100	
							183
286	2	6	12 3/8	25	324	72.30	
383	3	3	12 3/8	25	388	84.90	
386	3	6	18 3/8	15	473	106.70	
583	5	3	18 3/8	25	460	139.20	
501	Corner Iron				275	43	13.40
1603	Insulator				100	45	7.40

## Peirce Secondary Racks

Hot Galvanized  
Standard Type



No. 358

Strong enough for the heaviest work, with an ample factor of safety. Equipped with No. 355 insulators, although Nos. 356, 455 and 456 insulators can be furnished if desired. The insulators are packed in corrugated paper boxes and the racks are wired in bundles of ten.

The width of the back of the rack is 2 3/4 inches with a slot 3/4 inch wide between the two angles, which allows the use of 5/8-inch through or lag bolts for fastening the rack to the pole.

Cat. No.	No. of Line Wires	DIMEN. IN. Wire Spacing	Length Over All	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
258	2	8	13 1/2	10	588	140.80
350	3	4	13 1/2	10	860	153.30
358	3	8	21 1/2	5	1160	209.20
450	4	4	17 1/2	5	1000	187.80
458	4	8	29 1/2	5	1420	295.80
540	5	4	21 1/2	5	1360	233.30
3058	3	8	13 1/2	5	760	161.70

Extended Back Type

Similar in all respects to the standard rack except that the angles forming the back are extended to accommodate through bolts for attaching the rack. Some construction men like this feature as the insulators can be assembled on the rack in the storeroom and attached to the pole without removing them.

Cat. No.	No. of Line Wires	DIMEN. IN. Wire Spacing	Length Over All	Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
1258	2	8	17 3/16	10	740	140.80
1350	3	4	17 3/16	10	840	153.30
1358	3	8	25 3/16	5	1220	209.20
1450	4	4	21 3/16	5	1060	187.80
1458	4	8	33 3/16	5	1460	295.80
1540	5	4	25 3/16	5	1420	233.30
3158	3	8	17 3/16	5	1300	161.70

## Insulators for Peirce Secondary Racks

Standard Type

No. 355 brown glazed insulator is the most popular secondary rack insulator and is furnished on all heavy type racks unless otherwise specified. For marking the neutral wire of a secondary circuit, some construction men use the No. 355 white glazed insulator.



No. 355

Where high mechanical strength is required, such as for dead-ending heavy lines, the No. 455 is used by many companies.

Cat. No.	Color of Glaze	Kind of Porcelain	Ship Wt., Lbs. per 100	Price per 100
355	Brown or White	Dry Process	100	\$12.60
455	Brown	Wet Process	100	17.40

Double Groove Type

Has 2 grooves, one for tying in the main circuit and the other for the service wires.



No. 356

356	Brown	Dry Process	102	\$18.30
456	Brown	Wet Process	102	20.90

No. 1606 Light Rack Type

Insulators for the light racks are furnished with either brown or white glaze, both of which are made of dry process porcelain. The brown glazed insulator is also used on the No. 1341 clevis, on spreader racks, light racks, and on sister hook and tree fixtures.



No. 1606

1606	Brown	Dry Process	40	\$8.60
1606	White	Dry Process	40	8.60

No. 1603 House Rack Type

Used with house racks. Also used on the No. 2925 swinging knob fixture.



No. 1603

1603	Brown	Dry Process	45	\$7.40
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**Peirce Electroweld Secondary Racks**



**No. 3848  
Extended  
Back**

**Hot Galvanized  
Heavy Service Type**

The heavy service type rack has uniform strength to resist all strains—dead-end, side pull and dead load.

No sharp edges, rivets, no pockets nor lapping joints to hold moisture.

Wide extended or non-extended backs for pole and building.

Equipped with No. 355 insulator.

The back bearing surface is 3 1/8 inches.



**No. 3838  
Non-Extended  
Back**

No. of Spacing Wires	Line In.	Std. Pkg.	Extended Back				Non-Extended Back			
			Cat. No.	Per 100	Over All Lgth. In.	Wt. Lbs. per 100	Cat. No.	Per 100	Over All Lgth. In.	Wt. Lbs. per 100
2	4	10	2844	\$95.00	13 1/4	542	2834	\$95.00	9 3/4	492
2	6	10	2846	118.20	15 1/4	713	2836	118.20	11 3/4	663
2	8	10	2848	140.80	17 1/4	764	2838	140.80	13 3/4	714
3	4	10	3844	153.30	17 1/4	896	3834	153.30	13 3/4	846
3	6	5	3846	202.50	21 1/4	1019	3836	202.50	17 3/4	999
3	8	5	3848	209.20	25 1/4	1154	3838	209.20	21 3/4	1104
4	4	5	4844	187.80	21 1/4	1156	4834	187.80	17 3/4	1106
4	6	5	4846	286.50	27 1/4	1448	4836	286.50	23 3/4	1398
4	8	5	4848	295.80	33 1/4	1543	4838	295.80	29 3/4	1447

**Medium Service Type**

The same spacing of the mounting holes permits installing of the medium and heavy service type racks back to back. Equipped with No. 355 insulator. Back bearing surface, 2 3/4 inches.

2	4	5	2644	\$84.30	13 1/4	525	2634	\$73.50	9 3/4	485
2	6	5	2646	125.40	15 1/4	593	2636	114.60	11 3/4	553
2	8	5	2648	118.40	17 1/4	526	2638	107.40	13 3/4	486
3	4	5	3644	130.80	17 1/4	654	3634	119.90	13 3/4	614
3	6	5	3646	186.50	21 1/4	791	3636	177.30	17 3/4	751
3	8	5	3648	194.20	25 1/4	879	3638	183.30	21 3/4	839
4	4	5	4644	168.60	21 1/4	925	4634	157.80	17 3/4	885
4	6	5	4646	247.50	27 1/4	1037	4636	239.10	23 3/4	997
4	8	5	4648	256.70	33 1/4	1172	4638	245.60	29 3/4	1132

**Light Service Type**

Especially adapted for running extensions from secondary mains, for lines where future development is limited and for house service connections.

Made in extended back type only.

The mounting holes on these racks are exactly the same spacing as the heavy service type. This feature permits installing a light service and heavy service rack back to back on a pole using the same through bolt. Equipped with No. 1606 insulators. Back bearing surface, 2 3/4 inches.



**No. 3746**

Cat. No.	Per 100	No. Line Wires	Wire Spacing In.	Over All Lgth. In.	Std. Pkg.	Wt. Lbs. per 100
2744	\$75.00	2	4	13 1/4	10	322
2746	83.20	2	6	15 1/4	10	362
2748	88.40	2	8	17 1/4	10	394
3744	111.50	3	4	17 1/4	10	479
3746	116.70	3	6	21 1/4	10	598
3748	126.30	3	8	25 1/4	5	616
4744	148.00	4	4	21 1/4	5	621
4746	135.00	4	6	27 1/4	5	708
4748	164.30	4	8	33 1/4	5	742

Prices shown include insulators.

**Hubbard Insulated Lamp Hanging Attachments**

**Hot Galvanized  
Suspension Insulator Type**

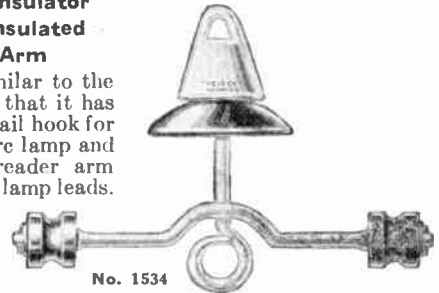


No. 1504 is a metal cap suspension insulator and has a safety hook for an arc lamp. The No. 1514 is similar to No. 1504, except that it has a metal cap tapped for 3/4-inch pipe thread for screwing to the mast arm stud and a pig tail hook for supporting the arc lamp. The No. 1524 is similar to the No. 1514 except that it has a 3/4-inch pipe thread stud instead of a pig tail hook for fastening the arc lamp.

Cat. No.	Overall Length Inches	Working Voltage	Std. Pkg.	Weight Pounds per 100	Price per 100
1504	6 3/4	6600	50	330	\$520.00
1514	7 5/8	6600	50	330	520.00
1524	5 1/16	6600	50	295	520.00

**Suspension Insulator Type with Insulated Spreader Arm**

No. 1534 is similar to the No. 1504, except that it has an extended pig tail hook for supporting the arc lamp and an insulated spreader arm for attaching the lamp leads.



Cat. No.	Wire Spacing Inches	Working Voltage	Std. Pkg.	Weight Pounds per 100	Price per 100
1534	12	6600	25	525	\$720.00

**Insulated Lamp Hanger Type**



The No. 1591 consists of a special 6600 volt pin type insulator, a cap for attaching to the mast arm and a stud for attaching the lamp. Both stud and cap are threaded with standard 3/4-inch pipe threads. No. 1592 is similar to No. 1591 except that the pig tail hook is cemented into insulator instead of stud.

1591	6 1/2	6600	50	324	\$300.00
1592	8 3/4	6600	50	336	300.00

**Peirce Spreader Brackets**

**Hot Galvanized**

Used where great strength is needed.

These brackets are pressed to shape from No. 9 gauge open hearth steel and are equipped with Peirce 1-inch spring threads which prevent insulator breakage.

Standard package, 10.



**No. 217**

Cat. No.	Wiring Spacing Inches	Wt., Lbs. per 100	Price per 100
217	13	300	\$105.00
317	6 1/2	350	147.60



**No. 317**

**Peirce Dead-Ending Straps For Secondary Racks**

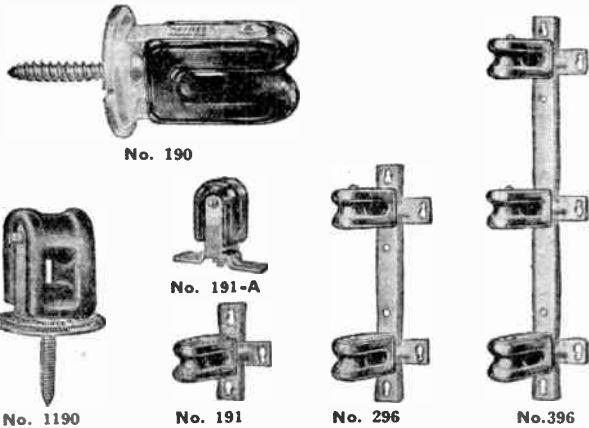
**Hot Galvanized**

Used to temporarily dead-end a line. Provided with a 1/8-inch hole for 1/2-inch lag screw.

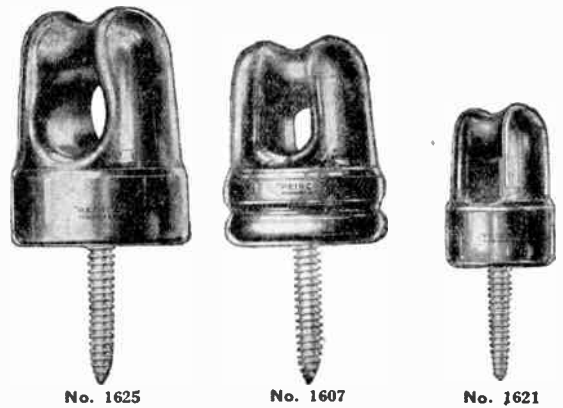
Cat. No.	Type	Pole Mounting Hole, In.	Size of Steel, In.	Ship. Wt., Lbs. per 100	Price per 100
999	Light	3/16	14-ga. x 1 1/4	39	\$14.20
1000	Heavy	3/16	1/2 x 1 1/4	100	15.90



## Peirce Wireholders Standard Type Hot Galvanized



## Peirce Wireholders All-Porcelain Type



The standard type of wireholders have been designed on scientific principles, namely, metal parts in tension and porcelain in compression each developing its greatest strength. The No. 1602 insulator used on these wireholders is designed with well rounded edges almost entirely eliminating chipping or breakage and it is secured to the bracket by a complete band of metal.

This wireholder is not affected by temperature changes or by the difference in the coefficient of expansion of its various parts.

The No. 190 wireholder is in use for making house service connections and when in use the brass cotter pin interlocks the insulator with the metal portion of the wireholder eliminating falling wire hazard should the insulator become broken.

Peirce wireholders are also made in multi-point types. They are provided with ample mounting holes spaced away from the insulator eliminating the possibility of breaking the insulator when driving the screw.

The corner iron No. 501 is used for attaching multi-point wireholders to the corner of a building when occasion demands this type of construction.

The screw type All-Porcelain Wireholder combines a wall bracket, insulator and screw all in one. A jab and a few turns is all that is necessary to install it. This type of wireholder has been designed so that no metal is exposed after installation.

The insulator is small and fits the hand. The wire hole grooves are well rounded so that they will not injure the insulation of the line wire. The insulators have an ample factor of safety for all secondary voltages.

The special wood screw which is a part of this wireholder has a clean cut thread and a point which starts into the wood under very little pressure. The cement used in attaching the screws is non-porous; weather does not affect it.

No. 31 expansion shields are used for mounting the screw type wireholders into brick, stone or concrete buildings.

Nos. 1607, 1614, 1621 and 1625 are equipped with galvanized screw; Nos. 1617, 1624, 1631 and 1635 with brass screw; Nos. 1627, 1634, 1641 and 1645 with toggle bolt; Nos. 1637, 1644, 1651 and 1655 with carriage bolt.

Cat. No.	No. of Wires	Wire Spacing Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
190	1	0	50	65	\$18.70
191	1	0	45	118	22.80
191-A	1	0	50	86	20.40
296	2	6	25	190	50.10
299	2	9	25	228	52.70
394	3	4 1/2	25	270	71.40
396	3	6	25	300	75.00
494	4	4 1/2	25	404	83.40
1190	1	0	125	135	27.40
1602	*	*	100	35	8.80
1604	**	**	100	59	13.80
501	Corner Iron		275	43	13.40

\*Insulator with 1/2 x 1 1/16-inch wire hole. \*\*With 3/4 x 7/8-inch hole.

Cat. No.	Size of Screw or Bolt Inches	Size of Wire Holes Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
1607	No. 22x2	1 1/16 x 1 3/16	50	95	\$18.70
1617	No. 22x2	1 1/16 x 1 3/16	50	95	22.60
1627	1/4 x 4 1/2	1 1/16 x 1 3/16	50	100	39.10
1637	3/8 x 5	1 1/16 x 1 3/16	50	125	29.60
1614	No. 20x2	1 1/16 x 3/4	50	90	17.00
1624	No. 20x2	1 1/16 x 3/4	50	90	19.30
1634	1/4 x 4 1/2	1 1/16 x 3/4	50	105	37.40
1644	3/8 x 5	1 1/16 x 3/4	50	105	28.00
1621	No. 20x2	7/16 x 3/4	50	65	15.30
1631	No. 20x2	7/16 x 3/4	50	65	18.00
1641	1/4 x 4 1/2	7/16 x 3/4	50	80	30.80
1651	3/8 x 5	7/16 x 3/4	50	80	27.80
1625	No. 22x2 1/4	29/32	50	125	27.40
1635	No. 22x2 1/4	29/32	50	125	30.20
1645	1/4 x 4 1/2	29/32	50	150	44.70
1655	3/8 x 5	29/32	50	140	35.30

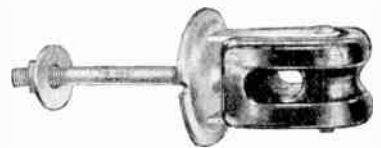
## Peirce Wireholders All-Porcelain Multi-Point Type Hot Galvanized

Equipped with No. 1654 All Porcelain Insulators which have a 3/8-inch bolt and cork washer. Insulators can be installed after back has been mounted to building and can be easily removed or installed to make various spacing wireholders. Base is No. 12 gauge presteel channel 2 3/8 inches wide with 1/2-inch flanges. Mounting slots are 5/16 x 1 1/2-inch with 7/16-inch center punch. Cork washer prevents breakage of insulators when assembling.

Cat. No.	No. of Wires	Wire Spacing Inches	Std. Pkg.	Weight Pounds per 100	Price per 100
3296	2	6	25	250	\$51.30
3299	2	9	25	275	54.00
3394	3	4 1/2	25	360	70.80
3396	3	6	25	375	78.00
1654	Insulator		50	90	17.00

## Peirce Dead-End Brackets For Railway Signal Circuits Hot Galvanized

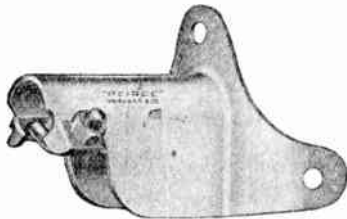
Equipped with a 3/8 x 4 1/2-inch carriage bolt with sufficient thread to make it suitable for use on cross arms 3/4 x 1/4 to 4 x 5 inches.



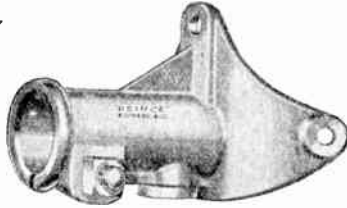
An important feature of this type bracket is the method of attaching insulator, which places the porcelain in compression, developing its full strength. In the case of a broken insulator it holds the wire in its original position eliminating possibility of a false signal due to a short.

Cat. No.	DIMENSIONS, INCHES Size of Bolt Hole	Std. Pkg.	Weight Pounds per 100	Price per 100
195	3/8 x 4 1/2 1/2 x 1 1/16	50	112	\$31.00

**Hubbard Pole Plates for Pipe Attachments**  
One-Piece Presteel and Malleable Types



No. 3901



No. 4752

For mounting pipe mast arms, but may be put to a variety of uses for attaching pipe fixtures to poles. Top mounting holes are 1 1/16 inch diameter, side holes are 3/8 inch diameter.

No. 3701 is used with 3/4-inch pipe and goose-neck brackets.

No. 3900 Series are one-piece presteel, used with 1 1/4-inch pipe and mast arms; furnished either plain or insulated for internal wiring and with pulleys for internal or external chain operation.

Nos. 4752 and 4755 certified malleable plates with special gripping arrangement for 1 1/4 and 2-inch pipe, respectively, are insulated for internal wiring when used with mast arms.

Pipe used with them must be swaged with an indentation deep enough and properly placed to assure free passage of clamp bolts to fasten pipe.

Cat. No.	Per 100	Style	Pipe Size	DIMENSIONS, INCHES			Wt. Lbs. per 100
				Vert. Pole Space	Horiz. Pole Space	Exten. from Pole	
3701	\$140.00	Plain	3/4	6	4	4	195
3901	250.00	Plain	1 1/4	6	9 1/2	6 1/4	460
3903	250.00	Int. Chain	1 1/4	6	9 1/2	6 1/4	545
3905	250.00	Ext. Chain	1 1/4	6	9 1/2	6 1/4	545
3907	250.00	Int. Wiring	1 1/4	6	9 1/2	6 1/4	530
4752	250.00	Int. Wiring	1 1/4	6 5/8	10	5 1/2	750
4755	275.00	Int. Wiring	2	7	10	6 1/2	850

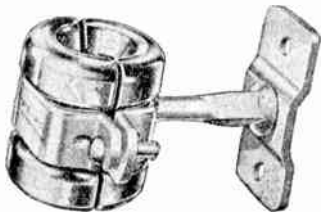
**Hubbard Lamp Lead Brackets**

Closed and Split Types

Hot Galvanized



No. 173



No. 164



No. 1660

Used for supporting vertical leads of duplex cable or twisted single wires between the cross-arm and the lighting fixture.

Split type facilitates installation, repair and replacement of lamp lead cables. All split type parts secured against accidental dropping. Metal brackets provide 5-inch extensions

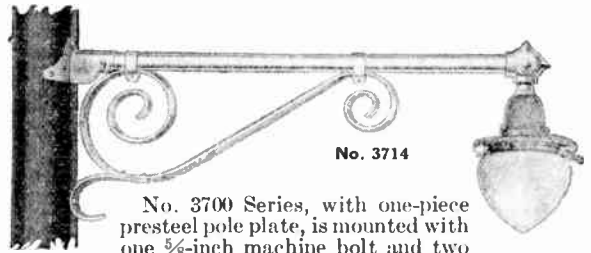
and are furnished with base plates having 1/16-inch mounting holes or with lag screw threads and machine threads for use with Peirce Adjustable Pole Bands and as mast arm attachments. No. 1660, with pin cemented into insulator, has a 1-inch wire hole and provides 5 7/16-inch extension.

Cat. No.	Per 100	Size Screw Inches	Wire Hole Inches	Std. Pkg.	Wt. Lbs. per 100
163	\$124.90	1/2x3 Lag	5/16 to 7/8x1 1/8	25	255
163-A	124.90	5/8x 3/4 Bolt	5/16 to 7/8x1 1/8	25	255
163-B	124.90	1/2x2 1/2 Bolt	5/16 to 7/8x1 1/8	25	260
164	131.40	Base Plate	5/16 to 7/8x1 1/8	25	300
173	59.70	1/2x3 Lag	1 1/8x1 1/8	20	230
173-A	59.70	5/8x 3/4 Bolt	1 1/8x1 1/8	25	230
173-B	59.70	1/2x2 1/2 Bolt	1 1/8x1 1/8	25	235
174	66.20	Base Plate	1 1/8x1 1/8	25	240
1660	99.90	1/2x3 Lag	1" Diameter	25	230

**Hubbard Street Hood Brackets**

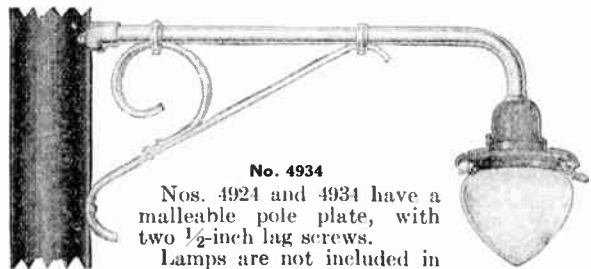
Hot Galvanized

These brackets are made of 1 1/4-inch pipe and are obtainable in straight and bent styles for either internal or external wiring. Standard lamp attachment threads are 1 1/4-inch, but lamps tapped for 3/4-inch fittings can be attached by using Hubbard reducing bushing No. 3381, specified separately.



No. 3714

No. 3700 Series, with one-piece presteel pole plate, is mounted with one 5/8-inch machine bolt and two 1/2-inch lag screws.



No. 4934

Nos. 4924 and 4934 have a malleable pole plate, with two 1/2-inch lag screws.

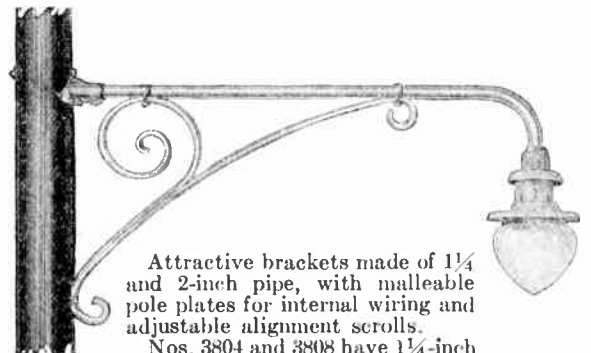
Lamps are not included in prices.

**For External Wiring**

Cat. No.	Each	Description	Extension Inches	Vert. Pole Space Inches	Std. Pkg.	Weight Pounds Each
3714	\$10.55	Straight Arm	48	21	..	23 1/2
3734	9.80	Bent Arm	48	21	..	23 3/4
4924	10.55	Straight Arm	48	23 3/8	..	24
4934	9.80	Bent Arm	48	23 3/8	..	23

**With Bushings for Internal Wiring**

3716	\$10.55	Straight Arm	48	21	..	24
3736	9.80	Bent Arm	48	21	..	24 1/2



Attractive brackets made of 1 1/4 and 2-inch pipe, with malleable pole plates for internal wiring and adjustable alignment scrolls.

Nos. 3804 and 3808 have 1 1/4-inch thread for lamp attachment; Nos. 3824 and 3828 have 2-inch thread.

Scroll is made of 1 1/4x1 1/2x1/8-inch channel steel punched for 1/2-inch lag screw. Pole plate is mounted with one 5/8-inch machine bolt and two 1/2-inch lag screws.

Vertical Pole Space Inches	1 1/4-INCH PIPE				2-INCH PIPE			
	Cat. No.	Each	Lgth. Ft.	Wt. Lbs.	Cat. No.	Each	Lgth. Ft.	Wt. Lbs.
38	3804	\$13.35	4	28	3824	\$16.00	4	53
50 1/2	3808	18.75	8	44	3828	23.00	8	67

## Hubbard Presteel Trolley Mast Arms Rod Type Hot Galvanized



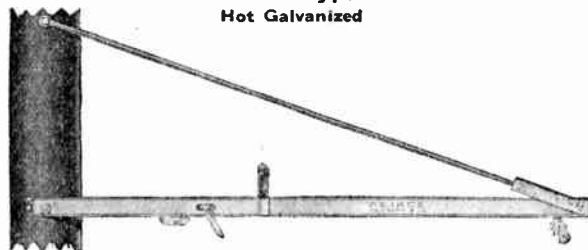
A safe, simple trolley arm. Long swinging loops of wire are eliminated. Lamp is out of reach of children, and cannot fall to street. Lamp trimmer climbs pole, pulls lamp in by rod attached to lamp hanger and pushes it back to place by the same rod.

Has 1/2-inch round eye rod, channel steel back brace, channel spreader arm, and operating rod with a trolley which has 3/4-inch pipe-threaded connection for lamps.

Size of section, 1 1/16 x 2 5/16 inches. Standard package, 2.

Cat. No.	Each	Length Feet	Wt. Lbs.	Cat. No.	Each	Length Feet	Wt. Lbs.
3406	\$15.60	6	38	3412	\$21.80	12	62
3408	17.90	8	45	3414	25.20	14	72
3410	19.10	10	54	3416	28.90	16	79

## Hubbard Presteel Trolley Mast Arms Chain Type Hot Galvanized



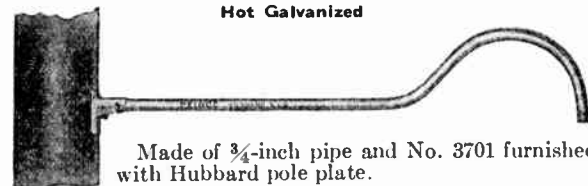
The latest development for street lighting. Carriage is operated by a continuous chain which is completely protected. All movable parts are equipped with brass bushings, permitting free, easy movement. Idler and sprocket are non-rusting alloy. Chain mechanism cannot join.

The arm is safe and simple; long swinging loops of wire are eliminated. Lamp trimmer climbs pole, unlocks handle and by revolving it pulls lamp toward him. Handle locking device will not freeze nor hinder quick operation.

Size of section, 1 1/16 x 2 5/16 inches. Standard package, 2.

Cat. No.	Each	Length Feet	Wt. Lbs.	Cat. No.	Each	Length Feet	Wt. Lbs.
3606	\$18.10	6	38	3612	\$24.90	12	59
3608	20.00	8	45	3614	27.30	14	66
3610	22.50	10	52	3616	30.50	16	73

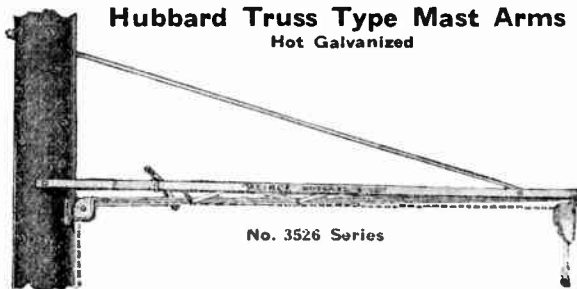
## Hubbard Street Hood Brackets Goose Neck Type Hot Galvanized



Made of 3/4-inch pipe and No. 3701 furnished with Hubbard pole plate.

Cat. No.	Each	Length Inches	Size Pipe Inches	Std. Pkg.	Wt., Lbs. per 100
3745	\$4.10	40	3/4	2	750
3764	4.50	48	3/4	2	700

## Hubbard Truss Type Mast Arms Hot Galvanized



No. 3526 Series

Arms are made of 1 1/2 x 3/4 x 1/8-inch channel steel, trussed with 1 x 3/8-inch flat steel strips. Reliable, strong, sturdy reinforced structures supported by 1/2-inch rods. Braced against sway and uplift. Obtainable in four practical, efficient styles, in flexible and rigid studs and for chain operation. Chain ordered separately.

No. 3506 Series, with two standard No. 1520 sleet-proof pulleys and one spreader arm, operates with chain.

No. 3526 Series, with No. 1520 sleet-proof pole pulley, No. 1525 sleet-proof end pulley and one spreader, operates with chain.

No. 3546 Series, with flexible stud and two spreaders, provides a fixed semi-rigid installation.

No. 3566 Series, with rigid stud and two spreader arms provides a fixed rigid installation.

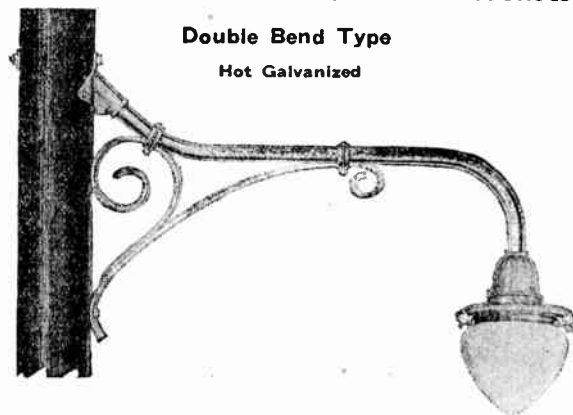
Length Feet	Standard Type				Sleet-Proof Pulley Type			
	Cat. No.	Each	Std. Pkg.	Wt. Lbs.	Cat. No.	Each	Std. Pkg.	Wt. Lbs.
6	3506	\$13.20	5	35	3526	\$15.20	4	38
8	3508	15.90	5	41	3528	17.90	4	44
10	3510	18.60	5	48	3530	20.60	4	51
12	3512	21.50	5	56	3532	23.50	4	59
14	3514	22.60	5	65	3534	24.60	4	68
16	3516	25.80	5	75	3536	27.80	4	78

Length Feet	Flexible Stud Type				Rigid Stud Type			
	Cat. No.	Each	Std. Pkg.	Wt. Lbs.	Cat. No.	Each	Std. Pkg.	Wt. Lbs.
6	3546	\$12.20	4	30	3566	\$12.20	4	31
8	3548	14.90	4	36	3568	14.90	4	37
10	3550	17.60	4	43	3570	17.60	4	44
12	3552	20.50	4	51	3572	20.50	4	52
14	3554	21.60	4	60	3574	21.60	4	61
16	3556	24.80	4	70	3576	24.80	4	71

No. 1520 Sleet-Proof Pulley; Std. Pkg. 10; Weight 330 Pounds per 100.....each \$2.10  
 No. 1525 Sleet-Proof Pulley with Clamp Knob; Weight 690 Pounds per 100.....each 3.90  
 No. 1530 Galv. Mast Arm Chain (Specify Length).....

## No. 3790 Hubbard Street Hood Brackets



Double Bend Type  
Hot Galvanized

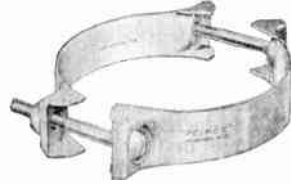
Standard 1 1/4-inch pipe is formed to a double curve supported by an attractive scroll. Attached to pole by certified malleable iron pole plate No. 4759, threaded to receive pipe. Mounting holes are for a 5/8-inch through bolt at top and 1/2-inch lag screws at sides. A porcelain insulator bushing is provided for internal wiring. The scroll support is attached to pole by means of a 1/2-inch lag screw and to pipe by positive clamping arrangement.

Extension, 48 inches. Vertical pole space, 34 inches.  
 No. 3790, Weight Each, 32 Pounds.....each \$11.65

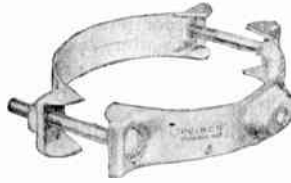


**Hubbard Adjustable Pole Bands**  
Hot Galvanized

The Hubbard Cup, a feature of this new band, is pressed to a shape which provides maximum strength to resist strains applied from any direction. Shoulders are formed for absolute rigidity and provide a maximum gripping surface on the pole. Tightening of bolts to the utmost cannot deform the band. Standard 5/8-inch bolt heads fit inside the cup and cannot turn. Special 1/2-inch bolt No. 8390 fitted with an oversize head can be had for 1/2-inch fittings. Hole is 1/16-inch diameter. Band is 12-gauge by 2-inch pressed steel.



Plain Style



Single Cup



Double Cup

Plain Style			
Cat. No.	Per \$100	Std. Pkg.	Wt., Lbs. per 100
8333	\$39.20	50	113
8334	43.20	50	122
8335	45.00	45	130
8336	49.00	35	147
8338	52.00	60	173
8340	60.80	45	207
8342	72.50	35	249
Single Cup			
Cat. No.	Per \$100	Std. Pkg.	Wt., Lbs. per 100
8353	\$41.10	50	117
8354	45.00	50	125
8355	47.10	45	133
8356	51.90	55	150
8358	54.90	50	176
8360	62.70	40	210
8362	74.40	30	252
Double Cup			
Cat. No.	Per \$100	Std. Pkg.	Wt., Lbs. per 100
8373	\$43.20	50	120
8374	47.10	45	128
8375	48.90	45	136
8376	54.90	50	153
8378	57.80	45	179
8380	64.60	40	213
8382	76.50	30	215

Table for Determining Pole Band and Carriage Bolt Sizes for Various Outside Pole Diameters

Plain	8333	8334	8335	8336	8338	8340	8342	*Carriage Bolts Cat. No.
Single	8353	8354	8355	8356	8358	8360	8362	8382
Double	8373	8374	8375	8376	8378	8380	8382	

OUTSIDE POLE DIAMETERS, INCHES								
3 1/2	4	4 1/2	5 1/2	7	9	11 1/2	9642	
3 3/4	4 1/4	4 3/4	5 3/4	7 1/4	9 1/4	11 3/4	9642 1/2	
4	4 1/2	5	6	7 1/2	9 1/2	12	9643	
		5 1/4	6 1/4	7 3/4	9 3/4	12 1/4	9643	
		5 1/2	6 1/2	8	10	12 1/2	9643 1/2	
			6 3/4	8 1/4	10 1/4	12 3/4	9644	
			7	8 1/2	10 1/2	13	9644 1/2	
				8 3/4	10 3/4	13 1/4	9645	
				9	11	13 1/2	9645 1/2	
					11 1/4	13 3/4	9646	
					11 1/2	14	9646	
						14 1/4	9646 1/4	
						14 1/2	9647	

Note: For any selected pole diameter the three styles of bands to fit are listed at top of column with corresponding carriage bolts at extreme right.

\*Carriage bolts must be ordered separately.

**Peirce Swinging Knob Fixtures**

Hot Galvanized



These fixtures are used for making house service connections. The sister hook arrangement permits the removal of the insulator, for driving the screw, without the use of tools.

The No. 2928 is equipped with a Peirce No. 1606 insulator. The No. 2929 with a Peirce No. 355 insulator.

Price, No. 2928, Wt. 141 Lbs. per 100.....per 100 \$40.10  
Price, No. 2929 Wt. 262 Lbs. per 100.....per 100 66.60

**Extra Double Galvanized Telephone and Telegraph Wire**



Extra Best Best (E. B. B.) is highest in electrical conductivity, having a range of electrical resistance of 4700 to 5000 mile ohms.

Best Best (B. B.). Slightly higher in resistance than E.B.B. but combines conductivity with tensile strength to make a popular grade, having a maximum electrical resistance of 5600 mile ohms.

Steel is designed for short-line service, where electrical conductivity can be sacrificed for tensile strength. Maximum resistance 6500 mile ohms.

All grades galvanized under the same improved process.

Size B.W.G.	Diam. In.	Wt., Lbs. per Mile	Miles Wire in Bundle	APPROX. BREAKING STRAIN, LBS.		
				E. B. B.	B. B.	Steel
4	.238	811	1/4	2028	2271	2433
6	.203	590	1/8	1475	1652	1770
8	.165	390	1/2	975	1092	1170
9	.148	314	1/2	785	879	942
10	.134	258	1/2	645	722	774
11	.120	206	1/2	515	577	618
12	.109	170	1/2	425	476	510
14	.083	99	1/2	247	277	297

**Crapo Galvanized Steel Strand Guy Wire**  
7 Wires Twisted Into a Single Strand



Diameter Inches	Weight Pounds per 1000 Feet	Standard Single and Double Galvanized		Siemens-Martin Double Galvanized	
		Per 100 Ft.	Strength Pounds	Per 100 Ft.	Strength Pounds
5/8	813	\$8.50	11600	\$8.25	19100
1/2	517	5.50	7400	5.25	12100
7/16	399	4.50	5700	4.30	9350
3/8	296	3.50	4250	3.25	6950
5/16	205	2.50	3200	2.50	5350
1/4	121	1.75	1900	2.05	4250
3/16	72.9	1.25	1150	1.70	3150
5/32	51.3	1.15	870	1.35	1900

Diameter Inches	Weight Pounds per 1000 Feet	High Strength Strand		Extra High Strength Strand	
		Double Galvanized Per 100 Ft.	Strength Pounds	Double Galvanized Per 100 Ft.	Strength Pounds
5/8	813	\$12.00	29600	\$14.60	42400
1/2	517	7.25	18800	8.80	26900
7/16	399	6.00	24500	7.20	20800
3/8	296	4.40	10800	5.25	15400
5/16	205	3.20	8000	4.25	11200
1/4	121	2.25	4750	2.85	6650
3/16	72.9	1.80	2850	2.40	3990

**Oshkosh Diggers**



The blades are made of special alloy steel. Welding is used for attaching the blades instead of riveting, making a durable joint. The fulcrum members are of heavily constructed, channel-shaped, steel forgings.

There are two pivot points for the blades, one on each side. This gives much stronger leverage and greater durability.

Made in two types, with split handles or with two solid handles. The handles are made of straight grained hard wood, 8 feet long.

Measurement marks are placed on the handles so that the workman can easily determine the exact depth of the hole. The diameter of the circle circumscribed by the digger blades is 6 inches.

No. 2051 Two Solid Handle Type, Wt., 14 1/2 Lbs. each 7.66  
No. 2050, Split Handle Type, Wt., 13 Lbs. each \$7.66

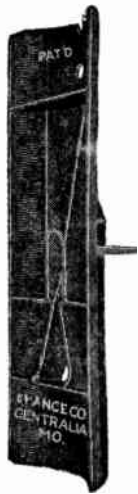
## Never-Creep Anchors

The Never-Creep Anchor consists of a 1-piece rod and 1-piece malleable iron plate that pulls against the solid undisturbed earth.

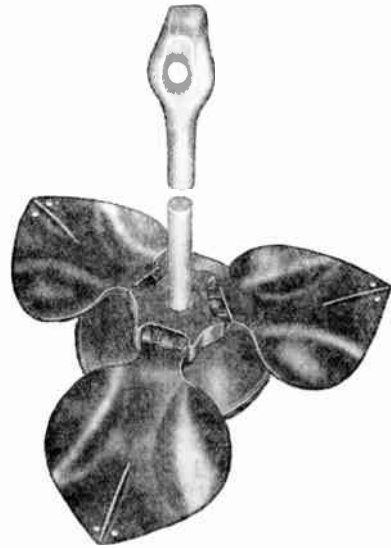
It possesses all the merits of the dead-man hut eliminates the necessity of digging a pit and cutting a channel.

To install, simply bore the hole, drive the rod and hang on the plate.

Cat. No.	Per 100	Size Plate In.	Wt. Lbs. per 100
510	\$2.10	5x10	376
615	3.00	6x15	690
620	4.20	6x20	925
820	6.30	8x20	1240
825	8.00	8x25	1960
830	9.00	8x30	2670
835	10.00	8x35	3095
1040	14.00	10x40	4775



## Wej-Lock Expanding Anchors



The Wej-Lock Balanced Anchor may be used as an expanding anchor, a cone anchor or as a dead man. When spread or partially spread, it is cone shaped, developing equalized strain which is responsible for its exceptional holding power. It is the only malleable iron expanding anchor with a nut retainer.

Cat. No.	Each	Size Anchor	Size Rod	Wt., Lbs. per 100
836	\$3.40	8"-3 Way	3/4"	1350
8310	4.20	8"-3 Way	3/4"	1548
8412	4.60	8"-4 Way	3/4"	1690
1044	8.00	10"-4 Way	1"	3000

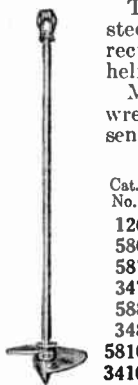
## Twineye Rods

Cat. No.	Per 100	Size	Wt. Per 100
360	\$153.55	3/4" x 6'	970
370	170.15	3/4" x 7'	1130
380	188.65	3/4" x 8'	1255
170	291.58	1" x 7'	2160
180	346.35	1" x 8'	2310



## Thimbleye Rods

Cat. No.	Per 100	Size	Wt. per 100
25	\$71.73	1/2" x 5'	390
26	79.61	1/2" x 6'	400
56	111.05	5/8" x 6'	680
57	123.74	5/8" x 7'	755
58	135.58	5/8" x 8'	830
36	143.80	3/4" x 6'	960
37	160.40	3/4" x 7'	1120
38	178.90	3/4" x 8'	1245
17	285.83	1" x 7'	2150
18	316.70	1" x 8'	2300

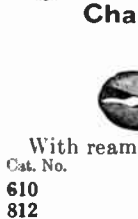


## Chance Screw Anchors

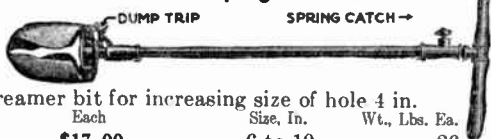
This socket type screw anchor is made of semi-steel. Improvements include a wide spiral correctly pitched for ease of installation, a wide helix and sharp blades.

May be installed with a standard screw anchor wrench with adapter attachment which will be sent on request.

Cat. No.	Each	Size In.	Size Rod In.	Wt. Lbs. per 100
126	\$3.10	6	1/2	988
586	3.50	6	5/8	1120
587	4.10	7	5/8	1323
347	4.60	7	3/4	1650
588	5.40	8	5/8	1680
348	6.00	8	3/4	1980
5810	6.60	10	5/8	2170
3410	7.40	10	3/4	2455



## Chance Heavy Telegraph Augers With Telescoping Handle



With reamer bit for increasing size of hole 4 in.

Cat. No.	Each	Size, In.	Wt., Lbs. Ea.
610	\$17.00	6 to 10	26
812	17.00	8 to 12	28

## Chance New Improved Expanding Anchors

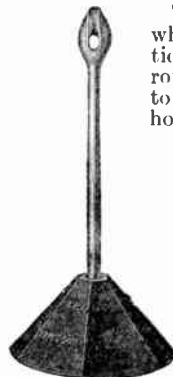
Has both housing and base for supporting plates; expanding arms hinged to cross head by 1-piece spider; interlocking plates; expanding arms hinged to plates by clinched loops; wide deep ribbed expanding arms; drop-forged expanding head; marginal guideways for guiding plates and holding anchor together.



Cat. No.	Each	Size Anchor	Max. Size Rod	Wt. Lbs. per 100
62	\$2.10	6"-2 Way	5/8"	485
64	2.60	6"-4 Way	3/4"	735
824	3.00	8"-2 Way	3/4"	935
82	3.40	8"-2 Way	3/4"	1015
8410	4.20	8"-4 Way	3/4"	1445
84	4.60	8"-4 Way	3/4"	1598
104	8.00	10"-4 Way	1"	2550
124	13.00	12"-4 Way	1 1/4"	4175

## Chance Pyramid Cone Anchors

This improved cone anchor has 6 flat faces which in conjunction with the wedging portions act as a flat wedge without danger of rotation. The flaring base gives a final grip to the wedge thus greatly increasing the holding power.



Cat. No.	Each	Size In.	Max. Size Rod In.	Wt. Lbs. per 100
6	\$1.04	6	5/8"	320
8	1.42	8	3/4"	668
10	2.10	10	3/4"	1015
12	2.90	12	1	1690
16	5.80	16	1	2830
19	9.20	19	1 1/4"	4760
23	10.96	23	1 3/4"	6550

**Hubbard Steelwing Anchors**

Hot Galvanized



Having large bearing surfaces with sharp screw edges, these anchors are easily installed and provide efficient and substantial anchorage against undisturbed earth; will not creep. No digging required; no adjustments under ground necessary.

Cat. No.	Per 100	DIAMETER INCHES		Overall Length Rod Feet	Std. Pkg.	Ship. Wt., Lbs. per 100
		Wing	Rod			
7524-A	\$124.90	4	3/4	4 1/2	10	738
7526-A	249.80	6	3/4	5 1/2	10	1040
7527-A	391.70	7	1	5 1/2	10	1750
7528-A	458.00	8	1	5 1/2	10	1860
7530-A	641.10	10	1 1/4	5 1/2	10	2900
7550-A	699.40	10	1 1/4	8	5	3690

To obtain anchor with thimbleye, drop A from catalog number.

**Everstick Expanding Anchors**

Ease of installation, ease of expansion, maximum power and long life are the result of years of experience and improvements in these anchors.

The exclusive Everstick guides hold the plates in perfect alignment during expansion of the anchor.

Anchors are made of certified malleable iron.



Expanded

**2-Way Anchors**

This anchor can be depended upon to give outstanding service in comparison to any anchor of like size and capacity.

For many uses in pole line construction.

**Hubbard Steelwing Swamp Anchors**

Hot Galvanized



These anchors have enormous holding power when embedded the proper depth in swampy soil.

Anchor unit consists of solid steelwing, short solid steel shaft threaded to take 1 1/4-inch pipe coupling and 1 1/4-inch pipe cap with forged eye to screw onto pipe extension shaft. Pipe is cut to meet anchor requirements but is not furnished as part of anchor.

Over all length, length of pipe used plus 10 inches. Size strand, 1/2 inch or under.

Cat. No.	Per 100	Diam. Wing In.	Diam. Shank	Std. Pkg.	*Ship. Wt., Lbs. per 100
7548	\$352.60	8	Std. 1 1/4"	3	920
7549	.....	10	O.D. 1.66"	2	1370

\*Not including pipe and coupling.

No.	Each	Anchor and Hole In.	Size Rod Inches	Area Expanded Sq. In.	Anchor Wt. Lbs.	HOLDING POWER POUNDS	
						Ordinary Soil	Firm Soil
52	\$1.60	5	5/8	30	4	2000	3000
62	2.10	6	5/8	60	7	3000	6000
82	3.40	8	3/4	100	10	7000	14000

**3-Way Anchors**

An ideal guy anchor for all around use. Built to hold strains 100 per cent greater than rated holding power for ordinary soils.

A 6 and 10-inch anchor can be furnished proportionately designed for minimum and maximum strain requirements.



Expanded

**No. 7546 Hubbard Rock Guy Bolts**

Hot Galvanized



Used where solid rock extends to surface or in stone or concrete walls. Of 1" round steel, 18" long, with drop forged eye (1 1/2 x 2" inside). Std. pkg., 20. Ship. wt., 600 lbs. per 100.

Price, No. 7546 ..... per 100 \$95.00

No.	Each	Anchor and Hole In.	Size Rod Inches	Area Expanded Sq. In.	Anchor Wt. Lbs.	HOLDING POWER POUNDS	
						Ordinary Soil	Firm Soil
633	\$2.60	6	5/8	65	6 1/2	3000	6000
833	3.00	8	5/8	75	7 1/2	3000	6000
834	3.00	8	5/8	90	9	4000	8000
836	3.40	8	3/4	110	11	8000	16000
8310	4.20	8	3/4	125	13	10000	20000
8312	4.60	8	1	130	14	12000	24000
10316	8.00	10	1	190	25	20000	40000

**No. 7547 Hubbard Rock Guy Bolts**

With Wedge—Hot Galvanized

Has wedge and split end which spreads bolt as wedge is driven against bottom of hole. Of 1-inch round steel, 18" long. Std. pkg., 20. Ship. wt., 600 pounds per 100.

Price, No. 7547 ..... per 100 \$104.00



**4-Way Anchors**

Recommended for heavy duty anchorage and long service under the most severe conditions.

Ease of expansion and great holding power are features of this anchor.



Expanded

**Hubbard Guy Thimbles**

Hot Galvanized

Cat. No.	Size Strand Inches	Size Guy Rod Inches	Std. Pkg.	Wt. Lbs. per 100	Price per 100
7594	1/2	5/8 and 3/4	500	21	9.75
7595	3/4	1	250	42	13.75



No. 7593

No.	Each	Anchor and Hole In.	Size Rod Inches	Area Expanded Sq. In.	Anchor Wt. Lbs.	HOLDING POWER POUNDS	
						Ordinary Soil	Firm Soil
64	\$2.60	6	3/4	75	9	4000	8000
84	4.20	8	3/4	125	15	10000	20000
84	4.60	8	1	132	15 1/2	12000	24000
104	8.00	10	1	210	28	20000	40000
124	13.00	12	1 1/4	320	54	32000	64000



## No. 9 Hemingray Glass Insulators Pony

Over all: height, 3 $\frac{3}{4}$ "; diameter, 2 $\frac{1}{4}$ ".  
 Diameter Groove.....inches  $\frac{3}{8}$   
 Weight, Each.....pounds  $\frac{9}{16}$   
 Quantity per Box..... 250  
 Weight per Box.....pounds 162  
 No. 9.....per 1000 \$94.70

## No. 10 Hemingray Glass Insulators Exchange Line

Over all: height, 3 $\frac{1}{4}$ "; diameter, 2 $\frac{1}{2}$ ".  
 Diameter Groove.....inches  $\frac{7}{16}$   
 Quantity per Box..... 250  
 Weight per Box.....pounds 176  
 No. 10.....per 1000 \$94.60

## No. 12 Hemingray Glass Insulators Double Groove, Pony

Over all: height, 3 $\frac{5}{8}$ "; diameter, 2 $\frac{3}{8}$ ".  
 Diameter Top Groove.....inches  $\frac{3}{8}$   
 Weight, Each.....pounds  $\frac{5}{8}$   
 Quantity per Box..... 250  
 Weight per Box.....pounds 188  
 No. 12.....per 1000 \$94.60

## No. 14 Hemingray Glass Insulators Deep Groove, Double Petticoat, Pony

Over all: height, 3 $\frac{3}{8}$ "; diameter, 2 $\frac{7}{8}$ ".  
 Diameter Groove.....inches  $\frac{3}{8}$   
 Weight, Each.....pounds  $\frac{3}{4}$   
 Quantity per Box..... 200  
 Weight per Box.....pounds 160  
 No. 14.....per 1000 \$120.40

## No. 16 Hemingray Glass Insulators Long Distance

Over all: height, 4", diameter, 2 $\frac{5}{8}$ ".  
 Diameter Groove.....inches  $\frac{3}{8}$   
 Weight, Each.....ounces 15 $\frac{1}{2}$   
 Quantity per Box..... 175  
 Weight per Box.....pounds 185  
 No. 16.....per 1000 \$141.00

## No. 19 Hemingray Glass Insulators Deep Groove, Double Petticoat

Over all: height, 3 $\frac{7}{8}$ "; diameter, 3 $\frac{1}{4}$ ".  
 Diameter Groove.....inches  $\frac{1}{2}$   
 Weight, Each.....ounces 18  
 Quantity per Box..... 150  
 Weight per Box.....pounds 186  
 Leakage Distance.....inches 4 $\frac{3}{8}$   
 Wet Arcing Distance.....inches 1  
 No. 19.....per 1000 \$168.30

## No. 20 Hemingray Glass Insulators Street Railway

Over all: height, 4"; diameter, 3 $\frac{1}{4}$ ".  
 Diameter Groove.....inches  $\frac{3}{4}$   
 Weight, Each.....ounces 18  
 Quantity per Box..... 150  
 Weight per Box.....pounds 186  
 Leakage Distance.....inches 4 $\frac{3}{8}$   
 Wet Arcing Distance.....inches 1  
 No. 20.....per 1000 \$168.30

## No. 42 Hemingray Glass Insulators Double Petticoat

Over all: height, 4 $\frac{1}{8}$ "; diameter, 3 $\frac{3}{4}$ ".  
 Diameter Groove.....inches  $\frac{5}{16}$   
 Weight, Each.....ounces 24  
 Quantity per Box..... 100  
 Weight per Box.....pounds 169  
 Leakage Distance.....inches 6 $\frac{1}{2}$   
 Wet Arcing Distance.....inches 1 $\frac{1}{4}$   
 No. 42.....per 1000 \$196.00

## No. 43 Hemingray Glass Insulators Top Groove, Western Union

Over all: height, 4 $\frac{1}{4}$ "; diameter, 3 $\frac{5}{8}$ ".  
 Diameter Groove.....inches  $\frac{3}{16}$   
 Weight, Each.....ounces 25  
 Quantity per Box..... 100  
 Weight per Box.....pounds 199  
 No. 43.....per 1000 \$225.00

## No. 53 Hemingray Glass Insulators One-Piece Transposition

Over all: height, 4 $\frac{1}{2}$ "; diam., 4".  
 Diameter Groove.....inches  $\frac{3}{8}$   
 Weight, Each.....ounces 28 $\frac{1}{2}$   
 Quantity per Box..... 50  
 Weight per Box.....pounds 110  
 No. 53.....per 1000 \$291.20

## Hemingray Glass Cable Insulators Primary Power Distribution Circuit No. 60

Line Voltage 6600

Over all: height, 5"; diam., 3 $\frac{1}{4}$ ".  
 Diameter Groove.....inches 1 & 1 $\frac{1}{2}$   
 Weight, Each.....ounces 30  
 Quantity per Box..... 50  
 Weight per Box.....pounds 115  
 No. 60.....per 1000 \$258.70

No. 61

Line Voltage 6600

Over all: height, 3 $\frac{3}{4}$ "; diam., 3 $\frac{1}{4}$ ".  
 Diameter Groove.....inches 1  
 Weight, Each.....ounces 18  
 Quantity per Box..... 150  
 Weight per Box.....pounds 189  
 No. 61.....per 1000 \$226.40

No. D-62

Voltage Rating 6600

Over all: height, 4"; diam., 3 $\frac{5}{8}$ ".  
 Diameter Groove.....inches 1 $\frac{1}{4}$   
 Weight, Each.....ounces 25 $\frac{1}{2}$   
 Quantity per Box..... 100  
 Weight per Box.....pounds 172  
 Leakage Distance.....inches 5 $\frac{3}{8}$   
 Wet Arcing Distance.....inches 1 $\frac{1}{2}$   
 No. 62.....per 1000 \$258.70

## No. D-71 Hemingray Glass Insulators High Voltage

Line Voltage 10000

Height, 3 $\frac{3}{4}$ "; diam., 4 $\frac{3}{4}$ ".  
 Diameter Groove.....inches  $\frac{5}{8}$   
 Weight, Each.....ounces 32  
 Quantity per Box..... 50  
 Weight per Box.....lbs. 122  
 Leakage Distance.....in. 7  
 Wet Arcing Distance.....in. 1 $\frac{3}{4}$   
 No. D-71.....per 1000 \$232.90

## No. D-72 Hemingray Glass Insulators High Voltage

Line Voltage 10000

Height, 4"; diam., 4 $\frac{3}{4}$ ".  
 Diameter Groove.....inches 1 $\frac{1}{2}$   
 Weight, Each.....ounces 37  
 Quantity per Box..... 50  
 Weight per Box.....pounds 137  
 Leakage Distance.....inches 8 $\frac{3}{4}$   
 Wet Arcing Distance.....inches 1 $\frac{3}{4}$   
 No. D-72.....per 1000 \$232.90

## No. 103 Hemingray Insulating or Break Knobs

Old No. 3.

Height over all, 2 inches; diameter, 2 inches; groove,  $\frac{5}{8}$  inch; hole,  $\frac{3}{8}$  inch.

Cat. No.	Std. Pkg.	Wt., Lbs. Per Box	Price per 1000
103	500	220	\$90.70



**No. D-990 Hemingray Glass Insulators**  
Secondary Power Circuit



Over all: height, 2 1/2"; diameter, 3".  
Diameter Groove . . . . . inches 3/4  
Weight, Each . . . . . ounces 12  
Quantity per Carton . . . . . 50  
Weight per Carton . . . . . pounds 47  
No. D-990 . . . . . per 1000 . . . . .

**No. D-510 Hemingray Glass Insulators**  
Primary Power Distribution Circuit  
Voltage Rating 6600



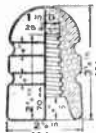
Over all: height, 3 1/2"; diameter, 3 5/8".  
Diameter Groove . . . . . inches 7/8  
Weight, Each . . . . . ounces 20  
Quantity per Carton . . . . . 50  
Weight per Carton . . . . . pounds 64  
No. D-510 . . . . . per 1000 . . . . .

**No. D-512 Hemingray Glass Insulators**  
Primary Power Distribution Circuit  
Voltage Rating 6600



Over all: height, 3 1/4"; diameter, 4".  
Diameter Groove . . . in. 3/4  
Weight, Each . . . . . oz. 24  
Quantity per Carton . . . . . 50  
Weight per Carton . lbs. 79  
No. D-512 . . . . . per 1000 . . . . .

**Thomas Porcelain One Part Telephone Insulators**



No. 1011

Brown glaze.

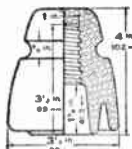
Cat. No. . . . .	1011	*1012
Nominal Rating . . . . . volts	1200	1200
Leakage Distance . . . . . inches	2	2 3/4
Mechanical Strength . . . . . pounds	2500	2500
No. in Barrel . . . . .	400	500
Gross Weight per 100 pounds . . . . .	84	66

\*No. 1012 has 1 groove.

**No. 1094 Thomas Porcelain One Part Pin Type Insulators**

Brown glaze.

Electrical values given are based on tests conducted in accordance with A.I.E.E. Specification No. 41.

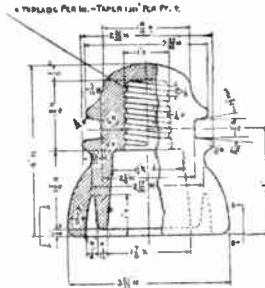


Nominal Rating . . . . . volts	5000
Dry Flash-Over Voltage . . . . .	50000
Wet Flash-Over Voltage . . . . .	26000
Leakage Distance . . . . . inches	6 3/4
Wet Arcing Distance . . . . . inches	13 1/4
Mechanical Strength . . . . . pounds	5000
Minimum Pin Height Recommended . . . . . inches	5 1/4
No. in Barrel . . . . .	125
Gross Weight per 100 . . . . . pounds	205

**Whitall Tatum Transparent Glass Insulators**

**No. 1, Double Petticoat**

(Similar to Hemingray-42)  
Western Union and Postal Standard

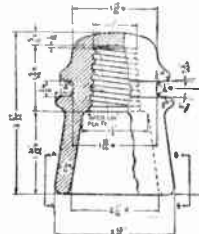


For use on toll circuits of greater length than 100 miles and on shorter lines where insulation conditions are very severe.

Weight, Each . . . . . oz. 24 1/4  
No. in Carton . . . . . 40  
Ship. Wt., Carton . . . . . lbs. 65  
Weight, per 1000 . . . . . lbs. 1625

**No. 2, Toll Line**

(Similar to Hemingray-16)

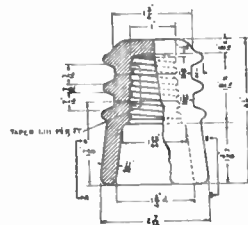


Standard on toll circuits less than 100 miles long.

Weight, Each . . . . . oz. 14 3/4  
No. in Carton . . . . . 50  
Ship. Wt., Carton . . . . . lbs. 50  
Weight, per 1000 . . . . . lbs. 1000

**No. 3, Exchange Line**

(Similar to Hemingray-10 and 12)

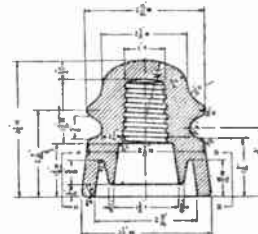


Used on local circuits in exchange areas. Upper wire groove is adapted for tying in line wire, and lower groove is employed for deadending under certain conditions.

Weight, Each . . . . . oz. 10 3/8  
No. in Carton . . . . . 50  
Ship. Wt., Carton . . . . . lbs. 35  
Weight, per 1000 . . . . . lbs. 700

**No. 4, Deep Groove Double Petticoat**

(Similar to Hemingray-14 and 19)



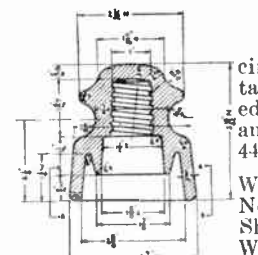
Used for electric light wiring on local lighting circuits.

Recommended for 4400-volt distribution.

Weight, Each . . . . . oz. 17  
No. in Carton . . . . . 50  
Ship. Wt., Carton . . . . . lbs. 55  
Weight, per 1000 . . . . . lbs. 1100

**No. 5, Extra Deep Groove Double Petticoat**

(Similar to Hemingray-20)

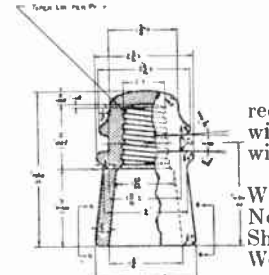


Used on electric light and power circuits. Diameter groove, 3/4 inch; takes care of standard rubber-covered or weatherproof electric light and power wire. Has a capacity of 4400-volt distribution.

Weight, Each . . . . . oz. 16 1/2  
No. in Carton . . . . . 50  
Ship. Wt., Carton . . . . . lbs. 54  
Weight, per 1000 . . . . . lbs. 1080

**No. 9, Pony**

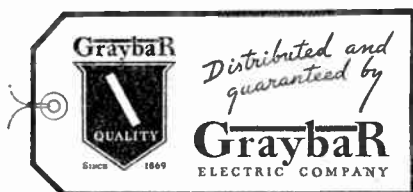
(Similar to Hemingray-9)



A telephone line insulator with rectangular side groove, preventing wire from slipping even though tie wires become loosened.

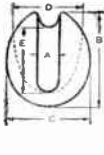
Weight, Each . . . . . oz. 9 3/8  
No. in Carton . . . . . 50  
Ship. Wt., Carton . . . . . lbs. 31  
Weight, per 1000 . . . . . lbs. 620

Prices upon Application




## Thomas Porcelain Guy Strain Insulators

Dry process porcelain; brown glaze.

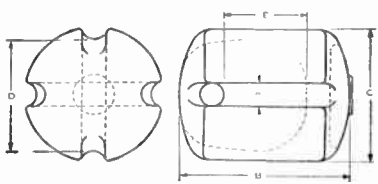


Cat. No.	361	362
Height.....inches	3	4 <sup>7</sup> / <sub>16</sub>
Diameter.....inches	2 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>
Groove.....inches	1 <sup>1</sup> / <sub>16</sub>	7 <sup>7</sup> / <sub>8</sub>
Mechanical Strength.....pounds	19000	25000
No. in Barrel.....	500	182
Gross Weight per 100.....pounds	78	215



Cat. No.	365	366
Height.....inches	2 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>
Diameter.....inches	2 <sup>3</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>8</sub>
Groove.....inches	1 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>8</sub>
Mechanical Strength.....pounds	6500	15500
No. in Barrel.....	625	350
Gross Weight per 100.....pounds	70	120

## Thomas Standard Porcelain Guy Strain Insulators



No. 500-6

Dry or wet process porcelain; brown glaze.

All these insulators are packed in convenient wire-bound wood boxes.

### 500 Series (Dry Process)

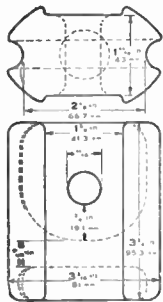
Cat. No.	500	502	504	506
Height.....inches	2 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>5</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>
Diameter.....inches	1 <sup>9</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
Groove.....inches	3 <sup>3</sup> / <sub>8</sub>	9 <sup>9</sup> / <sub>16</sub>	9 <sup>9</sup> / <sub>16</sub>	1 <sup>13</sup> / <sub>16</sub>
Mechanical Strength.....pounds	4000	14000	19000	45000
No. in Box.....	200	72	72	30
Gross Weight per 100.....pounds	25	139	171	333

### 602 Series (Wet Process)

Cat. No.	602	604	606	610
Height.....inches	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>
Diameter.....inches	2 <sup>5</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
Groove.....inches	9 <sup>9</sup> / <sub>16</sub>	9 <sup>9</sup> / <sub>16</sub>	1 <sup>13</sup> / <sub>16</sub>	1
Dry Flash-Over Voltage.....	23000	25000	31000	31000
Wet Flash-Over Voltage.....	14000	15000	20000	20000
Mechanical Strength.....pounds	11000	19000	45000	45000
No. in Box.....	72	72	30	30
Gross Weight per 100.....pounds	139	171	260	243

## No. 508 Thomas Porcelain Break Strain Insulators

Dry process porcelain; brown glaze.

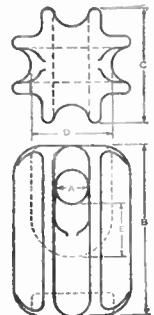


Cat. No.	508
Height.....inches	3 <sup>3</sup> / <sub>4</sub>
Diameter.....inches	3 <sup>3</sup> / <sub>16</sub>
Groove.....inches	1 <sup>1</sup> / <sub>16</sub>
Mechanical Strength.....pounds	19000
No. in Barrel.....	300
Gross Weight per 100.....pounds	165

## Thomas Porcelain Break Strain Insulators

Wet process porcelain; brown glaze.

A guy strain insulator also used for dead-ending.



Cat. No.	510	511	512	513	514
Height.....in.	3 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	10	7
Diam.....in.	2 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>
Groove.....in.	5 <sup>5</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1

Dry Flash-Over Voltage...	30000	35000	40000	55000	45000
Wet Flash-Over Voltage...	15000	20000	25000	30000	25000
Mechanical Strength...lbs.	10000	15000	20000	45000	20000
No. in Box.....	72	30	25	25	25
Gross Wt. per 100.....lbs.	114	360	360	1085	470

## Thomas Porcelain Assembled Strain Insulators

Wet process porcelain; bronze glaze.

A high grade type of assembled strain insulator. Used for dead-ending.

The insulator units used in these assemblies are taken from the 510 Series. The connecting links are similar in design to those used in the Thomas Link-Type Hewlett Insulator, and are made of soft copper, a material which readily shapes itself to the exact contour of the cableway under tension. Terminal fittings are steel forgings, hot dip galvanized.

While this type of insulator is most commonly used in single unit assemblies (Type 1) there are occasions when higher potentials or severe service make multi-unit assemblies desirable. Type 2 (2 unit strings) and 3 unit assemblies (Type 3) can also be furnished.

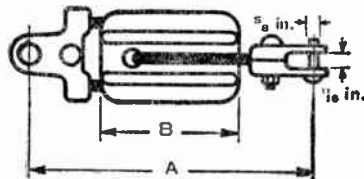
Special assemblies using strain hooks, strain eyes or standard cable-thimble can be made up promptly.

Insulators are shipped completely assembled.

The mechanical strength of any assembly is 8000 pounds.

### Porcelain Units Used

Assembly No.	Insulator No.	Assembly No.	Insulator No.	Assembly No.	Insulator No.
11049	511	11051	511	11053	511
11050	512	11052	512	11054	512

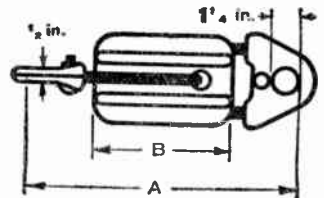


Cat. Nos. 11049-50, Type 1

Using Clevis Top and Bottom

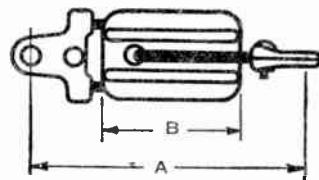
Cat. No.	Type No.	DIMENSIONS, IN.		FLASH-OVER VOLTAGE		Std. Pkg.	Gross Wt., Lbs. per 100
		A	B	Dry	Wet		
11049	1	10 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	35000	20000	50	860
11049	2	18 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>8</sub>	65000	38000	25	1420
11049	3	26	5 <sup>3</sup> / <sub>8</sub>	90000	56000	12	2140
11050	1	11 <sup>7</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	40000	22000	50	980
11050	2	21	6 <sup>3</sup> / <sub>4</sub>	75000	42000	25	1680
11050	3	30 <sup>1</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	105000	62000	12	3320

Using Eye Top and Bottom



Cat. Nos. 11051-2, Type 1

11051	1	11	5 <sup>3</sup> / <sub>8</sub>	35000	20000	50	700
11051	2	18 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>8</sub>	65000	38000	25	1270
11051	3	26 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	90000	56000	12	1980
11052	1	12 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	40000	22000	50	830
11052	2	21 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>	75000	42000	25	1520
11052	3	30 <sup>5</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	105000	62000	12	2360



Cat. Nos. 11053-54, Type 1

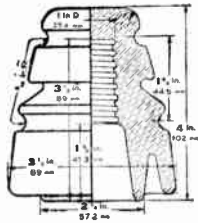
Using Clevis Top and Eye Bottom

11053	1	10 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>8</sub>	35000	20000	50	780
11053	2	18 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	65000	38000	25	1350
11053	3	26 <sup>1</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>8</sub>	90000	56000	12	2060
11054	1	12 <sup>1</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	40000	22000	50	910
11054	2	21 <sup>1</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>4</sub>	75000	42000	25	1600
11054	3	30 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	105000	62000	12	2440



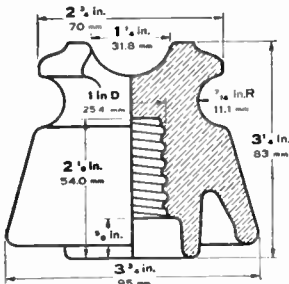
Thomas Porcelain One-Part Pin Type Insulators

No. 1185



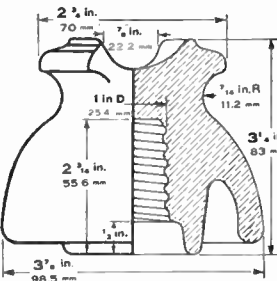
Transposition type insulator also commonly used for arc-light service.  
 Nominal Rating.....volts 5000  
 Dry Flash-Over Voltage..... \*40000  
 Wet Flash-Over Voltage..... \*25000  
 Leakage Distance.....in. \*5 1/4  
 Mechanical Strength.....lbs. 2500  
 No. in Barrel..... 100  
 Gross Weight per 100....lbs. 190  
 \*Measured between lower groove and pin. Dry flash-over between grooves is 23000 volts; wet flash-over, 13000 volts; leakage distance, 1 3/4 inches.

No. 1205



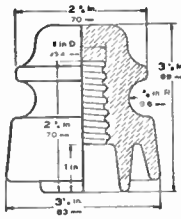
Nominal Rating.....volts 6600  
 Dry Flash-Over Voltage..... 55000  
 Wet Flash-Over Voltage..... 25000  
 Leakage Distance.....in. 5 5/8  
 Dry Arcing Distance.....in. 3 5/8  
 Mechanical Strength.....lbs. 3000  
 Min. Pin Ht. Recommended in. 4  
 No. in Box..... 50  
 Gross Weight per 100....lbs. 140

No. 1009



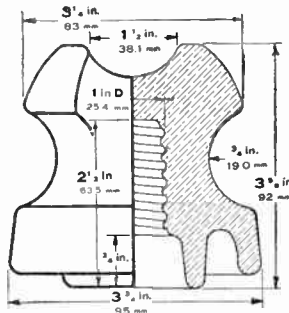
Nominal Rating.....volts 8000  
 Dry Flash-Over Voltage..... 55000  
 Wet Flash-Over Voltage..... 25000  
 Leakage Distance.....in. 5 3/4  
 Dry Arcing Distance.....in. 3 3/4  
 Mechanical Strength.....lbs. 3000  
 Min. Pin Ht. Recommended in. 4  
 No. in Box..... 50  
 Gross Weight per 100....lbs. 164

Brown Glaze  
 No. 1111



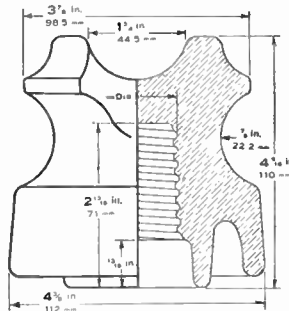
N. E. I. A. standard.  
 This insulator is packed in convenient wire-bound wood boxes.  
 Nominal Rating.....volts 5000  
 Dry Flash-Over Voltage..... 40000  
 Wet Flash-Over Voltage..... 20000  
 Leakage Distance.....in. 5 1/8  
 Dry Arcing Distance.....in. 3  
 Mechanical Strength.....lbs. 6000  
 Minimum Pin Height Recommended.....in. 4 1/4  
 No. in Box..... 50  
 Gross Weight per 100....lbs. 122

No. 1108



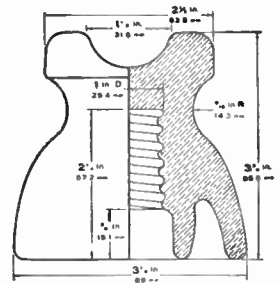
Nominal Rating.....volts 6600  
 Dry Flash-Over Voltage..... 55000  
 Wet Flash-Over Voltage..... 30000  
 Leakage Distance.....in. 5 1/8  
 Dry Arcing Distance.....in. 3 1/4  
 Mechanical Strength.....lbs. 4000  
 Min. Pin Ht. Recommended in. 4  
 No. in Barrel..... 100  
 Gross Weight per 100....lbs. 154

No. 1022 - 1 3/8-Inch Pin Hole  
 No. 1198 - 1-Inch Pin Hole



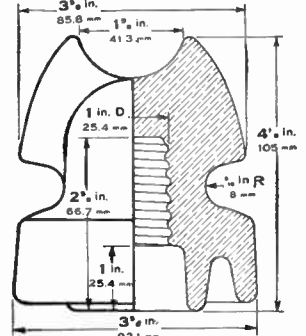
Nominal Rating.....volts 11000  
 Dry Flash-Over Voltage..... 60000  
 Wet Flash-Over Voltage..... 30000  
 Leakage Distance.....in. 6 1/4  
 Dry Arcing Distance.....in. 4 1/8  
 Mechanical Strength.....lbs. 5000  
 Min. Pin Ht. Recommended in. 5  
 No. per Barrel..... 60  
 Gross Weight per 100....lbs. 400

No. 1049



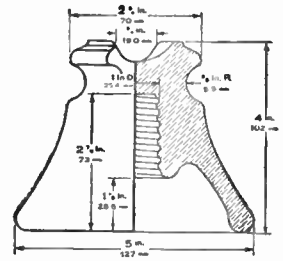
Nominal Rating.....volts 5000  
 Dry Flash-Over Voltage..... 50000  
 Wet Flash-Over Voltage..... 23000  
 Leakage Distance.....in. 5 1/4  
 Dry Arcing Distance.....in. 3 5/8  
 Mechanical Strength.....lbs. 3000  
 Minimum Pin Height Recommended.....in. 4  
 No. in Box..... 50  
 Gross Weight per 100....lbs. 132

No. 1084



Nominal Rating.....volts 7500  
 Dry Flash-Over Voltage..... 50000  
 Wet Flash-Over Voltage..... 23000  
 Leakage Distance.....in. 5  
 Dry Arcing Distance.....in. 3 1/4  
 Mechanical Strength.....lbs. 4000  
 Min. Pin Ht. Recommended in. 4 5/8  
 No. in Barrel..... 125  
 Gross Weight per 100....lbs. 190

No. 1164



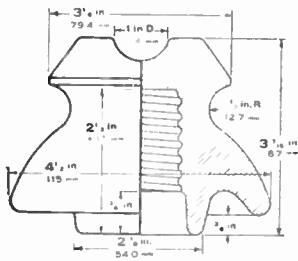
Nominal Rating.....volts 11000  
 Dry Flash-Over Voltage..... 57000  
 Wet Flash-Over Voltage..... 40000  
 Leakage Distance.....in. 6 1/4  
 Dry Arcing Distance.....in. 5 1/2  
 Mechanical Strength.....lbs. 4000  
 Min. Pin Ht. Recommended in. 5  
 No. per Barrel..... 100  
 Gross Weight per 100....lbs. 225

Electrical values given here are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.

## Thomas Porcelain One-Part Pin Type Insulators

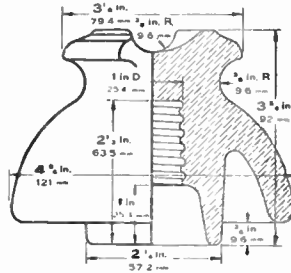
Brown Glaze

**No. 1067—1 3/8-Inch Pin Hole**  
**No. 1197—1-Inch Pin Hole**



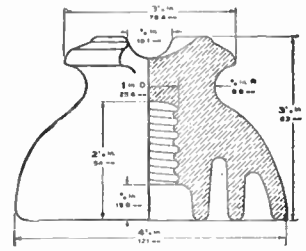
Nominal Rating	volts	11000
Dry Flash-Over Voltage		58000
Wet Flash-Over Voltage		30000
Leakage Distance	in.	5 1/4
Dry Arcing Distance	in.	3 3/8
Mechanical Strength	lbs.	4000
Min. Pin Ht. Recommended	in.	4 1/2
No. in Box		50
Gross Weight per 100	lbs.	225

**No. 1177—1-Inch Pin Hole**  
**No. 1196—1 3/8-Inch Pin Hole**



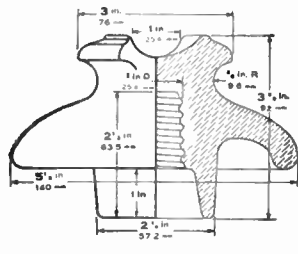
Nominal Rating	volts	13500
Dry Flash-Over Voltage		70000
Wet Flash-Over Voltage		42000
Leakage Distance	in.	7 5/8
Dry Arcing Distance	in.	4 1/2
Mechanical Strength	lbs.	3000
Min. Pin Ht. Recommended	in.	4 3/4
No. per Barrel		100
Gross Weight per 100	lbs.	245

**No. 1153**



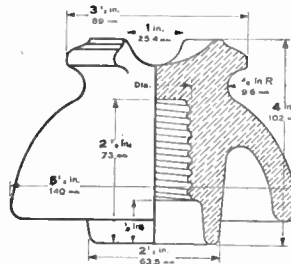
Nominal Rating	volts	13500
Dry Flash-Over Voltage		68000
Wet Flash-Over Voltage		40000
Leakage Distance	in.	8 3/4
Dry Arcing Distance	in.	4 1/2
Mechanical Strength	lbs.	3000
Min. Pin Ht. Recommended	in.	4 1/2
No. per Barrel		100
Gross Weight per 100	lbs.	260

**No. 1188—1-Inch Pin Hole**  
**No. 1190—1 3/8-Inch Pin Hole**



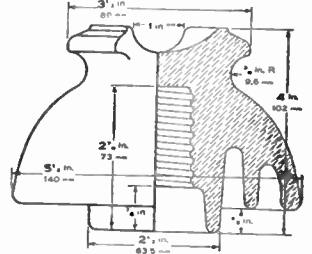
Nominal Rating	volts	15000
Dry Flash-Over Voltage		70000
Wet Flash-Over Voltage		45000
Leakage Distance	in.	7
Dry Arcing Distance	in.	4 7/8
Mechanical Strength	lbs.	4000
Min. Pin Ht. Recommended	in.	5
No. per Barrel		75
Gross Weight per 100	lbs.	220

**No. 1216—1-Inch Pin Hole**  
**No. 1217—1 3/8-Inch Pin Hole**



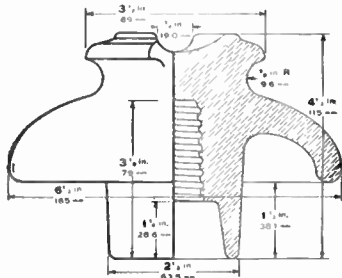
Nominal Rating	volts	17500
Dry Flash-Over Voltage		75000
Wet Flash-Over Voltage		45000
Leakage Distance	in.	8 1/4
Dry Arcing Distance	in.	5 1/4
Mechanical Strength	lbs.	4000
Min. Pin Ht. Recommended	in.	5
No. per Barrel		65
Gross Weight per 100	lbs.	340

**No. 1151—1 3/8-Inch Pin Hole**  
**No. 1152—1-Inch Pin Hole**



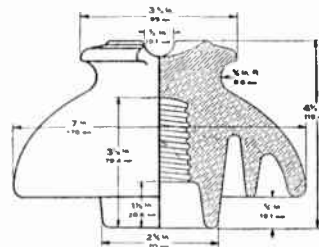
Nominal Rating	volts	17500
Dry Flash-Over Voltage		75000
Wet Flash-Over Voltage		45000
Leakage Distance	in.	9 1/2
Dry Arcing Distance	in.	5 1/4
Mechanical Strength	lbs.	4000
Min. Pin Ht. Recommended	in.	5
No. per Barrel		65
Gross Weight per 100	lbs.	400

**No. 1178—1-Inch Pin Hole**  
**No. 1179—1 3/8-Inch Pin Hole**



Nominal Rating	volts	20000
Dry Flash-Over Voltage		85000
Wet Flash-Over Voltage		50000
Leakage Distance	inches	9
Dry Arcing Distance	inches	6
Mechanical Strength	pounds	4000
Minimum Pin Height Recommended	inches	5
No. per Barrel		50
Gross Weight per 100	pounds	410

**No. 1157—1-Inch Pin Hole**  
**No. 1158—1 3/8-Inch Pin Hole**

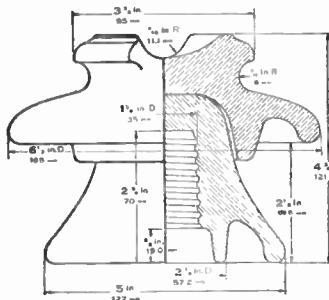


Nominal Rating	volts	23000
Dry Flash-Over Voltage		88000
Wet Flash-Over Voltage		50000
Leakage Distance	inches	11 3/4
Dry Arcing Distance	inches	6 1/2
Mechanical Strength	pounds	4000
Minimum Pin Height Recommended	inches	6
No. per Barrel		40
Gross Weight per 100	pounds	615

Electrical values given here are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.

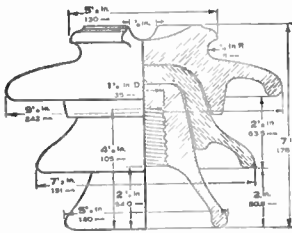
Thomas Porcelain 2 and 3-Part Insulators  
Brown Glaze

No. 2120



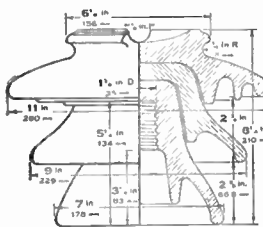
Threaded Pin Hole.....No.	2120
Nominal Rating.....kv.	23
Dry Flash-Over Voltage...kv.	87
Wet Flash-Over Voltage...kv.	55
Leakage Distance.....in.	10 1/2
Dry Arcing Distance.....in.	6
Mechanical Strength.....lbs.	3000
Min. Pin Ht. Recommended.in.	5 1/4
No. in Barrel.....	30
Gross Weight per 100.....lbs.	630

No. 3064



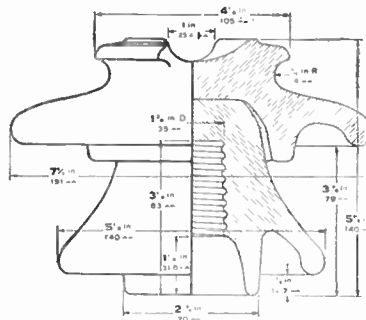
Threaded Pin Hole.....No.	3064
Metal Shell Thimble.....No.	3064-M
Sanded Pin Hole.....No.	3064-S
Nominal Rating.....kv.	40
Dry Flash-Over Voltage kv.	130
Wet Flash-Over Voltage kv.	85
Leakage Distance.....in.	19 3/4
Dry Arcing Distance.....in.	10 1/4
Mechanical Strength.....lbs.	3000
Min. Pin Ht. Recommended.....in.	7 1/2
No. in Crate.....	6
Gross Weight per 100.....lbs.	1475

No. 3055



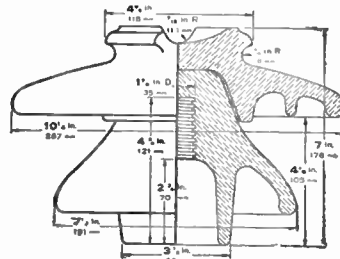
Threaded Pin Hole.....No.	3055
Metal Shell Thimble.....No.	3055-M
Sanded Pin Hole.....No.	3055-S
Nominal Rating.....kv.	50
Dry Flash-Over Voltage kv.	150
Wet Flash-Over Voltage kv.	100
Leakage Distance.....in.	25 1/4
Dry Arcing Distance.....in.	12 1/4
Mechanical Strength.....lbs.	3500
Min. Pin Ht. Recommended.....in.	9
No. in Crate.....	3
Gross Weight per 100.....lbs.	2670

No. 2117



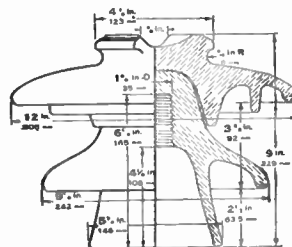
Threaded Pin Hole.....No.	2117
Metal Shell Thimble.....No.	2117-M
Sanded Pin Hole.....No.	2117-S
Nominal Rating.....kv.	27
Dry Flash-Over Voltage...kv.	95
Wet Flash-Over Voltage...kv.	65
Leakage Distance.....in.	12 1/2
Dry Arcing Distance.....in.	7 3/4
Mechanical Strength.....lbs.	3000
Min. Pin Ht. Recommended.in.	5 3/4
No. in Barrel.....	25
Gross Weight per 100.....lbs.	800

No. 2124



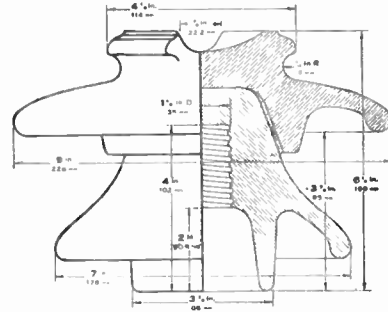
Threaded Pin Hole.....No.	2124
Metal Shell Thimble.....No.	2124-M
Sanded Pin Hole.....No.	2124-S
Nominal Rating.....kv.	45
Dry Flash-Over Voltage...kv.	140
Wet Flash-Over Voltage...kv.	90
Leakage Distance.....in.	21 1/4
Dry Arcing Distance.....in.	11
Mechanical Strength.....lbs.	3000
Min. Pin Ht. Recommended.in.	8
No. in Crate.....	6
Gross Weight per 100.....lbs.	1670

No. 2126



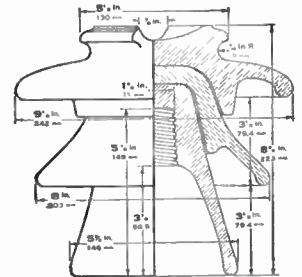
Threaded Pin Hole.....No.	2126
Metal Shell Thimble.....No.	2126-M
Sanded Pin Hole.....No.	2126-S
Nominal Rating.....kv.	55
Dry Flash-Over Voltage...kv.	150
Wet Flash-Over Voltage...kv.	105
Leakage Distance.....in.	27 1/2
Dry Arcing Distance.....in.	14
Mechanical Strength.....lbs.	3500
Min. Pin Ht. Recommended.in.	10
No. in Crate.....	3
Gross Weight per 100.....lbs.	2670

No. 2125



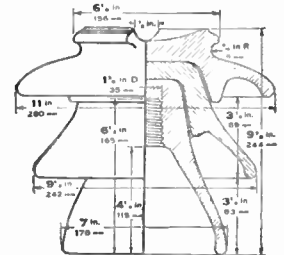
Threaded Pin Hole.....No.	2125
Metal Shell Thimble.....No.	2125-M
Sanded Pin Hole.....No.	2125-S
Nominal Rating.....kv.	35
Dry Flash-Over Voltage kv.	115
Wet Flash-Over Voltage kv.	75
Leakage Distance.....in.	16 1/2
Dry Arcing Distance.....in.	9
Mechanical Strength.....lbs.	3000
Min. Pin Ht. Recommended .in.	7
No. in Crate.....	12
Gross Weight per 100.....lbs.	1200

No. 3067



Threaded Pin Hole.....No.	3067
Metal Shell Thimble.....No.	3067-M
Sanded Pin Hole.....No.	3067-S
Nominal Rating.....kv.	45
Dry Flash-Over Voltage kv.	145
Wet Flash-Over Voltage kv.	95
Leakage Distance.....in.	22 1/4
Dry Arcing Distance.....in.	12
Mechanical Strength.....lbs.	3000
Min. Pin Ht. Recommended...in.	9 1/2
No. in Crate.....	6
Gross Weight per 100.....lbs.	2080

No. 3066



Threaded Pin Hole.....No.	3066
Metal Shell Thimble.....No.	3066-M
Sanded Pin Hole.....No.	3066-S
Nominal Rating.....kv.	55
Dry Flash-Over Voltage kv.	155
Wet Flash-Over Voltage kv.	110
Leakage Distance.....in.	26
Dry Arcing Distance.....in.	13 3/8
Mechanical Strength.....lbs.	3500
Min. Pin Ht. Recommended...in.	11
No. in Crate.....	3
Gross Weight per 100.....lbs.	2450

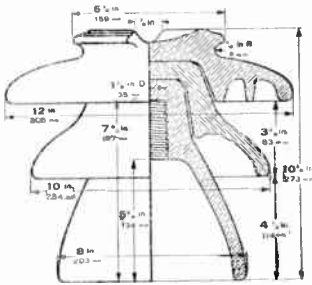
Electrical values given are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.



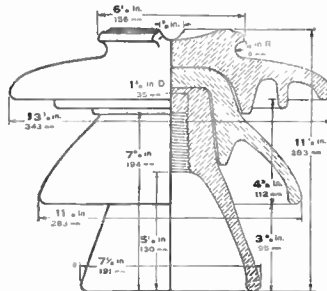
## Thomas Porcelain 3 and 4-Part Insulators

Brown Glaze

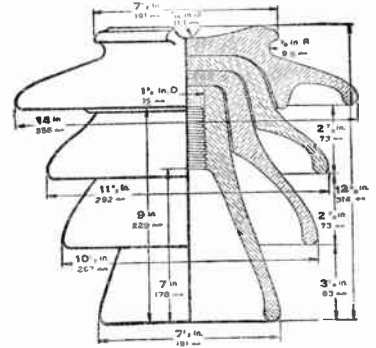
No. 3065



No. 3060



No. 4038

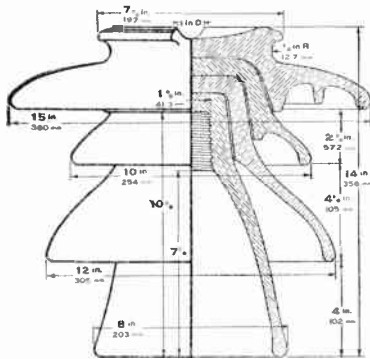


Threaded Pin Hole.....	No.	<b>3065</b>
Metal Shell Thimble.....	No.	<b>3065M</b>
Sanded Pin Hole.....	No.	<b>3065S</b>
Nominal Rating.....	kv.	60
Dry Flash-Over Voltage.....	kv.	175
Wet Flash-Over Voltage.....	kv.	120
Leakage Distance.....	in.	30 1/4
Dry Arcing Distance.....	in.	15 1/2
Mechanical Strength.....	lbs.	3500
Minimum Pin Height Recommended.....	in.	12
No. in Crate.....		3
Gross Weight per 100.....	lbs.	3210

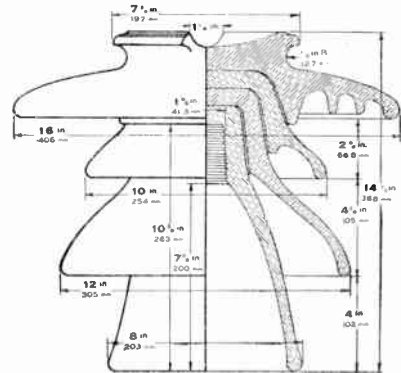
Threaded Pin Hole.....	No.	<b>3060</b>
Metal Shell Thimble.....	No.	<b>3060M</b>
Sanded Pin Hole.....	No.	<b>3060S</b>
Nominal Rating.....	kv.	66
Dry Flash-Over Voltage.....	kv.	185
Wet Flash-Over Voltage.....	kv.	135
Leakage Distance.....	in.	34
Dry Arcing Distance.....	in.	16 1/2
Mechanical Strength.....	lbs.	3500
Minimum Pin Height Recommended.....	in.	12
No. in Crate.....		3
Gross Weight per 100.....	lbs.	3865

Threaded Pin Hole.....	No.	<b>4038</b>
Metal Shell Thimble.....	No.	<b>4038M</b>
Sanded Pin Hole.....	No.	<b>4038S</b>
Nominal Rating.....	kv.	70
Dry Flash-Over Voltage.....	kv.	195
Wet Flash-Over Voltage.....	kv.	140
Leakage Distance.....	in.	41 1/4
Dry Arcing Distance.....	in.	17 1/4
Mechanical Strength.....	lbs.	4000
Minimum Pin Height Recommended.....	in.	13 1/2
No. in Crate.....		3
Gross Weight per 100.....	lbs.	5150

No. 4039



No. 4040



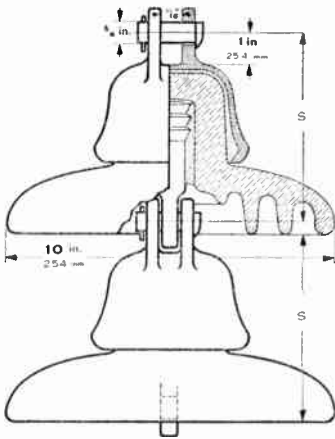
Threaded Pin Hole.....	No.	<b>4039</b>
Metal Shell Thimble.....	No.	<b>4039M</b>
Sanded Pin Hole.....	No.	<b>4039S</b>
Nominal Rating.....	kv.	80
Dry Flash-Over Voltage.....	kv.	200
Wet Flash-Over Voltage.....	kv.	150
Leakage Distance.....	in.	47
Dry Arcing Distance.....	in.	19 1/2
Mechanical Strength.....	lbs.	4000
Minimum Pin Height Recommended.....	in.	15
No. in Crate.....		2
Gross Weight per 100.....	lbs.	5410

Threaded Pin Hole.....	No.	<b>4040</b>
Metal Shell Thimble.....	No.	<b>4040M</b>
Sanded Pin Hole.....	No.	<b>4040S</b>
Nominal Rating.....	kv.	88
Dry Flash-Over Voltage.....	kv.	210
Wet Flash-Over Voltage.....	kv.	160
Leakage Distance.....	in.	48 1/2
Dry Arcing Distance.....	in.	20 1/2
Mechanical Strength.....	lbs.	4000
Minimum Pin Height Recommended.....	in.	15 1/2
No. in Crate.....		2
Gross Weight per 100.....	lbs.	6030

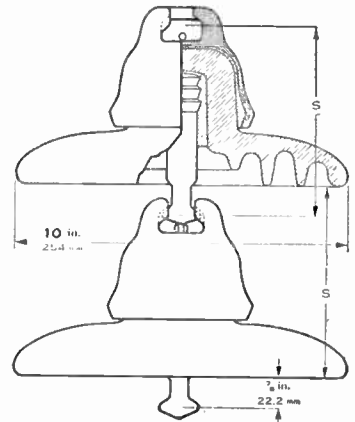
Electrical values given here are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.

## Thomas Porcelain Suspension Strain Insulators

Brown Glaze



**2-Unit Assembly**  
25000-Lb. Rating  
Clevis Type



**2-Unit Assembly**  
15000-Lb. Rating  
Ball-Socket Type

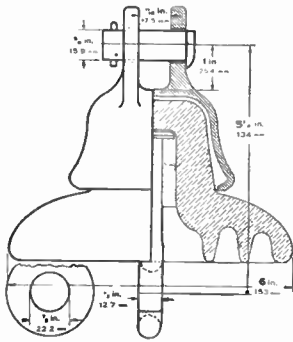
Cat. No.	Diam. In.	Spacing In. (S)	Type	Avg. M & E Lbs.	Leakage Dist. In.	Dry Arc. Dist. In.	Approx. Gross Wt. Lbs. Each
1209	12	7	Clevis	40000	10 3/4	7	23
1210	10	7	Clevis	36000	11 7/8	7 1/4	19
1165A	10	6	Clevis	33000	11 7/8	7 1/4	18
1192A	10	6	Ball-Socket	33000	11 7/8	7 1/4	18
1166A	10	5 3/4	Clevis	25000	13	7 3/4	14 1/2
1191A	10	5 3/4	Ball-Socket	25000	13	7 3/4	14 1/2
1236	10	5 1/2	Ball-Socket	25000	13	7 3/4	14
1187A	10	5 3/8	Ball-Socket	25000	13	7 3/4	14
1238A	10	5 3/8	Clevis	15000	12	7 3/4	12 1/2
1243A	10	5 3/4	Ball-Socket	15000	12	7 3/4	12 1/2
1242A	10	5 1/2	Ball-Socket	15000	12	7 3/4	12 1/2
13209A	10	5 1/2	Clevis	15000	12	7 3/4	12 1/2
1237A	10	5 3/8	Clevis	15000	12	7 3/4	12 1/2
1241A	10	5 3/8	Ball-Socket	15000	12	7 3/4	12 1/2
1240A	10	5 1/8	Ball-Socket	15000	12	7 3/4	12 1/2
1239A	10	5	Ball-Socket	15000	12	7 3/4	12 1/2
1242A	10	4 3/4	Ball-Socket	15000	12	7 3/4	12 1/2

Weights are based on standard packing of 6 per crate; however, will pack to suit customer.

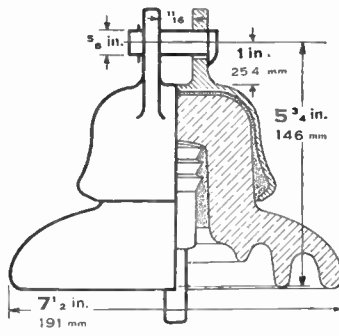
No. of Units	Dry Flash-Over, KV. (10-Inch Diameter Units)											
	1	2	3	4	5	6	7	8	9	10	11	12
7-Inch Spacing (S)	75	145	210	...	...	...	...	...	...	...	...	...
6-Inch Spacing (S)	80	145	205	255	305	355	405	455	505	555	605	655
5 3/4-Inch Spacing (S)	85	148	204	255	303	351	400	448	496	545	593	641
5 1/2-Inch Spacing (S)	85	145	200	250	295	345	395	440	485	530	575	620
5 3/8-Inch Spacing (S)	85	144	196	245	290	335	380	425	470	515	560	605
5 1/8-Inch Spacing (S)	85	140	190	235	280	325	370	410	455	495	540	580
5-Inch Spacing (S)	85	138	188	235	280	320	360	405	445	490	530	570
4 3/4-Inch Spacing (S)	85	135	185	230	270	310	350	390	430	470	510	550

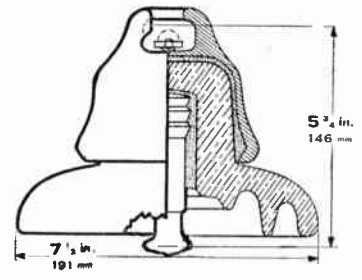
No. of Units	Wet Flash-Over, KV. (10-Inch Diameter Units)											
	1	2	3	4	5	6	7	8	9	10	11	12
7-Inch Spacing (S)	40	85	130	...	...	...	...	...	...	...	...	...
6-Inch Spacing (S)	45	88	130	172	215	255	297	340	380	423	465	505
5 3/4-Inch Spacing (S)	50	90	130	170	210	250	290	330	370	410	450	490
5 1/2-Inch Spacing (S)	50	90	130	170	205	245	280	320	360	400	440	475
5 3/8-Inch Spacing (S)	50	88	130	165	203	242	280	318	356	395	434	472
5 1/8-Inch Spacing (S)	50	85	130	165	200	235	265	300	335	370	410	445
5-Inch Spacing (S)	50	85	125	160	195	230	260	295	330	365	400	435
4 3/4-Inch Spacing (S)	50	85	120	155	190	220	255	285	320	355	390	420



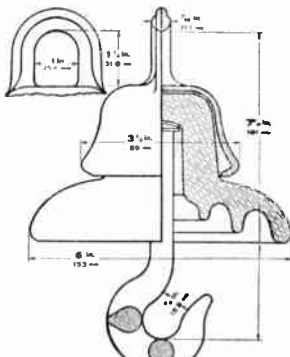
No. 1204A



No. 1199B



No. 1213A



No. 1207A

Cat. No.	Diameter Inches	Spacing Inches	Type	Average M & E Pounds	Leakage Distance Inches	Dry Arc. Distance Inches	Gross Wt., Lbs. Each
1199B	7 1/2	5 3/4	Clevis	15000	8 1/4	5	11
1213A	7 1/2	5 3/4	Ball-Socket	15000	8 1/4	5	11
1204A	6	5 1/4	Clevis-Eye	10000	6 1/2	4 3/8	6
1207A	6	7 1/2	Loop-Hook	10000	6 1/4	4 1/4	6

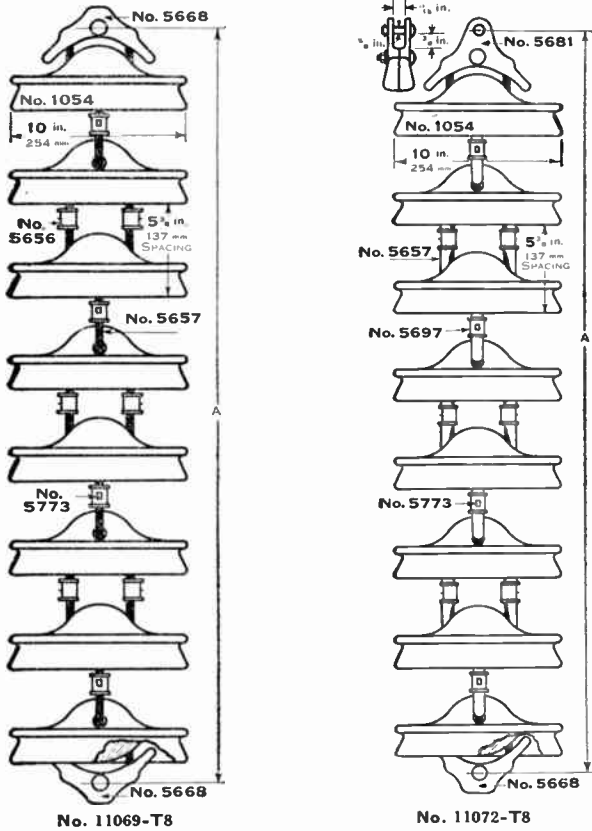
Cat. No.	Dry Flash-Over, KV. No. of Units			Wet Flash-Over, KV. No. of Units		
	1	2	3	1	2	3
1199B	70	120	165	40	70	110
1213A	70	120	165	40	70	110
1204A	60	100	135	30	60	85
1207A	60	100	135	30	60	85

Electrical and mechanical values given here are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.

## Thomas Link Type Hewlett Insulators

### 10-Inch Standard Units

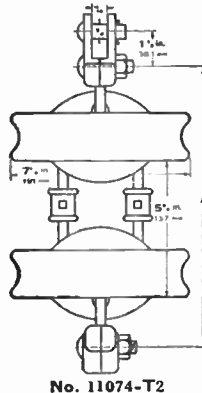
Brown Glaze Average M & E 10000 Pounds



## Thomas Link Type Hewlett Insulators

### 7 1/2-Inch Units

Brown Glaze Average M & E 8000 Pounds



Cat. No. 11073 Assembly has a blind adapter at both terminal ends.

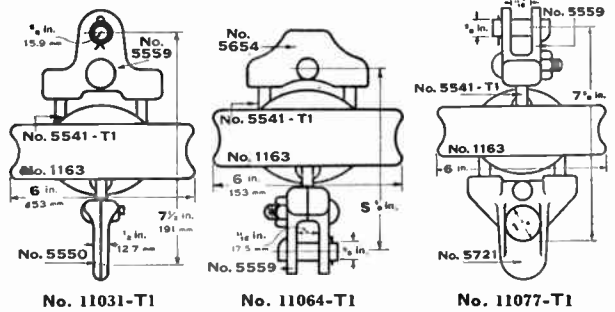
Cat. No. 11074 Assembly has a clevis at one end and a blind adapter at the other terminal.

Cat. No. 11075 Assembly has a clevis adapter at both terminal ends.

Type	DIMENSION A, IN.			FLASH-OVER, Kv.		Gross Wt., Lbs.
	11073	11074	11075	Dry	Wet	
Type 1	5 3/4	7 1/4	8 3/4	75	45	13 1/4
Type 2	11 1/8	12 5/8	14 1/8	130	90	26 3/4
Type 3	16 1/2	18	19 1/2	185	135	38 1/2

### 6-Inch Units

Brown Glaze—Average M & E 6000 Pounds



Cat. No. 11026 Assembly has large eye (5550) at both terminal ends.

Cat. No. 11031 Assembly has a large eye (5550) at one end and a clevis (5559) at the other terminal.

Cat. No. 11032 Assembly has a clevis (5559) at both terminal ends.

Cat. No. 11062 Assembly has a blind adapter (5654) at both terminal ends.

Cat. No. 11063 Assembly has a blind adapter (5654) at one end and a large eye (5550) at the other terminal.

Cat. No. 11064 Assembly has a clevis (5559) at one end and a blind adapter (5654) at the other terminal.

Cat. No. 11077 Assembly has a clevis (5559) at one end and thimble adapter (5721) at the other terminal.

Cat. No. 11078 Assembly has a large eye (5550) at one end and thimble adapter (5721) at the other terminal.

Cat. No. 11079 Assembly has a blind adapter (5654) at one end and thimble adapter (5721) at the other terminal.

Cat. No. 11080 Assembly has a thimble adapter (5721) at both terminal ends.

Any number of units (1054) may be assembled on a 5/8-inch spacing by means of soft drawn copper links (5657), cast bronze couplers (5656 or 5697), phosphor bronze spring clips (5773); the end terminals or adapters are of forged steel, either blind (5668) or clevis (5681) type.

Cat. No. 11069 Assembly has a blind adapter at top and bottom.

Cat. No. 11070 Assembly has a clevis adapter at the top and blind adapter at the bottom.

Cat. No. 11071 Assembly is similar to Cat. No. 11069 except has wing couplers (5697).

Cat. No. 11072 Assembly is similar to Cat. No. 11070 except has wing couplers.

No. Units	DIMENSION A, IN.		FLASH-OVER, Kv.		GROSS WT., LBS.	
	11059	11070	Dry	Wet	11069	11071
Type 1	5 7/8	7 1/2	75	45	19 1/2	19 1/2
Type 2	11 1/4	12 7/8	145	90	32 1/2	33
Type 3	16 5/8	18 3/4	205	135	50	51
Type 4	22	23 5/8	250	170	65	66 1/2
Type 5	27 3/8	29	300	205	80	82
Type 6	32 3/4	34 3/8	350	240	95	97 1/2
Type 7	38 1/8	39 3/4	390	275	110	113
Type 8	43 1/2	45 1/8	430	310	125	128 1/2
Type 9	48 7/8	50 1/2	470	345	140	144
Type 10	54 1/4	55 7/8	510	375	155	159 1/2
Type 11	58 5/8	61 1/4	550	410	170	175
Type 12	65	66 5/8	590	445	190	195 1/2

Electrical and mechanical values are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.

**Bulletins and Complete Information on Hardware for High Voltage Insulators Furnished on Application**

Cat. No.	STRING, INCHES		FLASH-OVER, Kv.				GROSS WT., LBS.	
	1-UNIT	2-UNITS	1-UNIT		2-UNITS		1-UNIT	2-UNITS
11026	7 13/16	12 3/16	Dry	Wet	Dry	Wet	7 1/2	13 1/4
11031	7 1/2	11 7/8	70	40	120	75	7 1/2	13 1/4
11032	7 3/16	11 9/16	70	40	120	75	7 1/2	13 1/4
11062	4 9/16	8 15/16	70	40	120	75	7 1/2	13 1/4
11063	6 3/16	10 9/16	70	40	120	75	7 1/2	13 1/4
11064	5 7/8	10 1/4	70	40	120	75	7 1/2	13 1/4
11077	7 5/8	12	70	40	120	75	7 1/2	13 1/4
11078	7 15/16	12 5/16	70	40	120	75	7 1/2	13 1/4
11079	6 5/16	10 11/16	70	40	120	75	7 1/2	13 1/4
11080	8 3/4	12 5/8	70	40	120	75	7 1/2	13 1/4

Electrical and mechanical values are based on tests conducted in accordance with A. I. E. E. Specifications No. 41.



## Kiley Truck Bodies

## Type GU General Utility Bodies

For Mounting on Any 1/2-Ton Commercial Chassis

A new design in light, duty line, meter installation, trouble shooter or general utility body. Made of special pressed steel construction, which insures strength and light weight, this unit has replaced, in some instances, 1 1/2-ton units with satisfactory operation.

The body complete weighs less than 500 pounds.

The unit consists of:

Two side cabinets, 9x28x60 inches, with full size metal doors opening to outside of body.

The right cabinet is regularly equipped with two adjustable partition trays and eight permanent compartments, while the rear section contains complete set of tool holders for all standard line tools.

Left side cabinet contains no standard equipment; may be arranged for electric meter trays, test meters, etc.

The center loading space, 28x60 inches, can be readily used in emergency work for carrying reels, transformers, or in general use for carrying electric refrigerators, etc.

The floor of this body is about 26 inches above ground.

Tailgate—all steel construction—slam type.

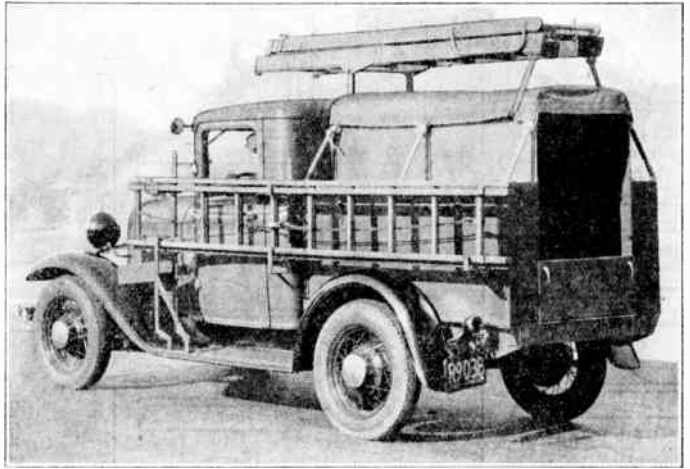
Tarpaulin—heavy waterproof cover with spring steel tarpaulin bows securely fastened in same.

Ladder irons conform to latest approved method for carrying ladders. The ladder rests on the lower rail and is steadied by bracket under top rail. A spring clamp is provided to hold ladder securely yet it is readily dismounted.

A special line construction body which is light and durable. The cabinets, compartments, and equipment have been modified for power company use. The bodies can be supplied of all metal construction if desired.

Standard body consists of:

Oak floor platform, protected by steel plates bolted securely to pressed steel bearers.



The lower section of ladder brackets provides space for sectional tree trimmers, lamp pickers, or ground rods. Write for details.

## Standard Line Construction Bodies

Rear-I-Beam so arranged that winch and derrick equipment could be added in future if necessity demanded it. Information regarding equipment necessary for use with winch and derrick furnished upon application.

Heavy rear fenders.

Rear steps.

Upper side boxes on right and left with full set of tool holders and material compartments. The material bins for small goods are made adjustable to meet variable requirements. Covers have continuous steel hinges with 1/4-inch steel pin.

Lower side boxes on right and left.

Thru cant hook box with doors on each side of body.

Weatherproof rubber goods cabinet with doors on each side of body.

Digging bar box.

Overhead structure complete with racks for ladder, pike poles, material chains, snatch block rail, straps, etc.

Top bows and bow carrier.

Formed 3-piece tarpaulin with stationary bellows type section between cab and body.

Tarpaulin carrier.

Standard body sizes, 8'6", 10 and 12 feet.



## Type LI Standard Installation Bodies

For maintenance and troubleman's service.

Body, size 60x46x28 inches, consists of:

Front compartment, size 46x25 1/2 x 28 inches, has large door opening on right side and one horizontal and one vertical partition.

Rear compartment, size 46x34 1/2 x 28 inches, has double rear door opening.

Right section rear has two stationary shelves and five sliding trays.

Left section rear has one horizontal and one vertical partition.

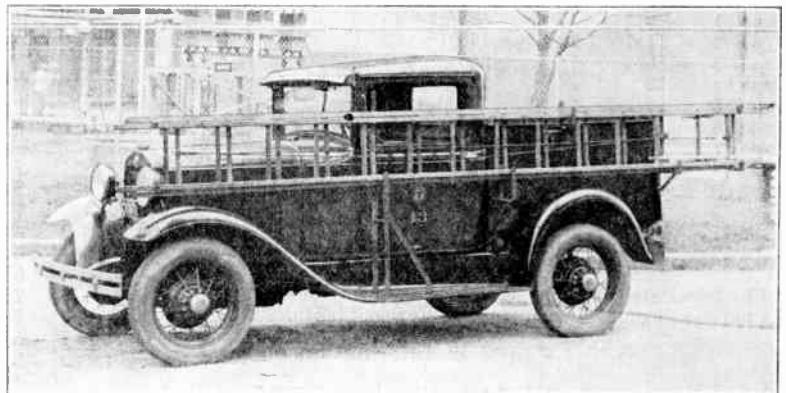
Rear doors contain racks for tools and insulator tubes.

This unit has an all steel under body.

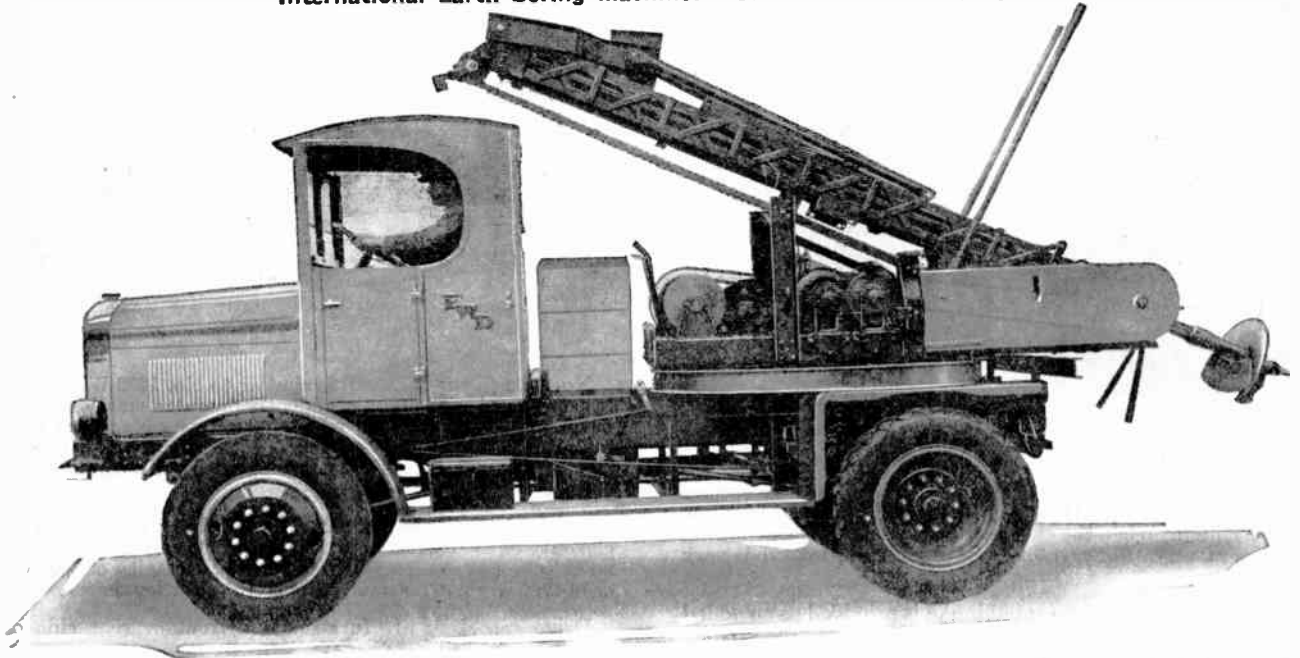
A complete set of ladder irons, including ladder clamp and rack, is mounted on left side.

Can be mounted on any 1/2-ton commercial chassis.

It can be modified and equipped for almost any special service.



## Graybar Earth Boring Equipment International Earth Boring Machines Mounted on FWD Trucks



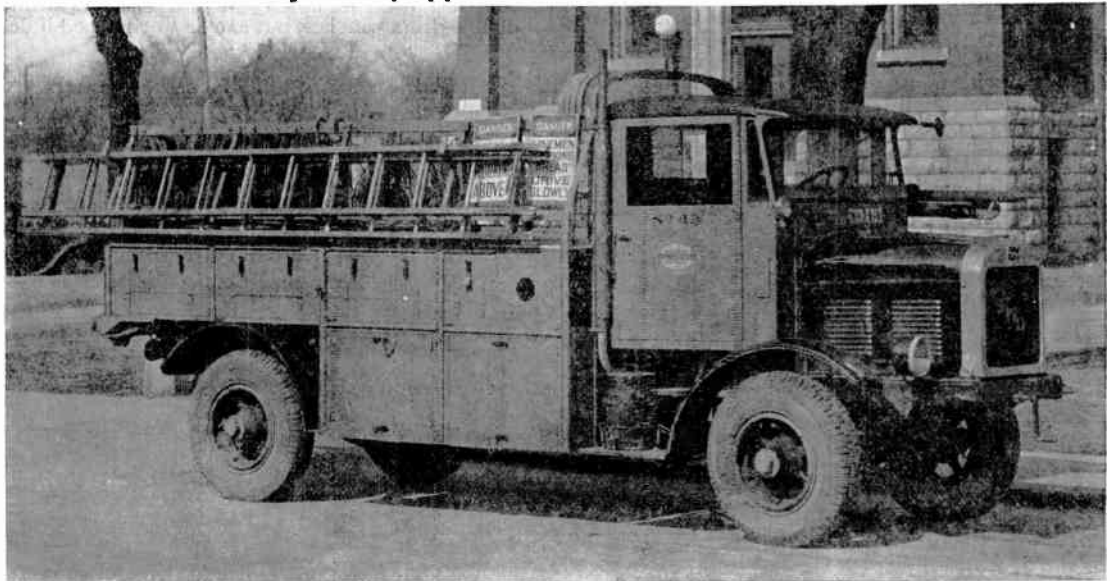
The truck used to haul the International Earth Boring Machine is a 3½-ton FWD. This truck is powered on all four wheels. Superior traction enables it to reach places which would otherwise be inaccessible.

Under favorable conditions, the boring machine will bore a 24-inch hole 7 feet in 2 minutes. Under average conditions holes can be bored and poles set in them at an average of 60 per 8-hour day. Machine is mounted on a turntable.

The Central Station Type Machine is equipped with one 24-inch and one 30-inch auger and a 9-foot tower. It bores holes 10 feet deep on absolutely level ground. Sets poles up to 65 feet in length. Total weight, 15,000 pounds.

Telephone Type Machine is equipped with 6-foot tower and will bore 7-foot holes on absolutely level ground. Sets poles up to 35 feet in length. Augers furnished are one 20-inch and one 24-inch. Total weight, 14,300 pounds.

## Graybar Equipped Line Construction Trucks



The Enclosed Gear Boring Machine is mounted on the FWD Line Construction Truck, which has a wide range of speeds, 7 forward and 2 in reverse. The boring machine is readily detachable from the truck body.

This machine will bore any pole hole and set the pole in any location where hand digging is possible and where it is at all practicable to place a truck. Power is delivered to the boring machine by a special transmission counter shaft which permits full engine torque and the use of any desired

speed of the truck transmission for every phase of boring machine operation.

The earth auger with its standard 13-foot rack will dig a 6-foot hole anywhere and on strictly level ground a 7-foot hole. One 20-inch and one 24-inch auger are supplied as standard equipment.

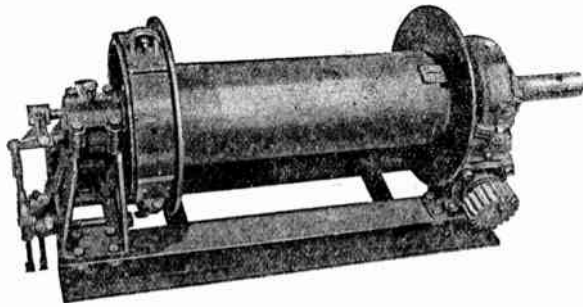
There are two models of Enclosed Gear Boring Machines: the Model C for the usual light work, and the Model HC, which is used for heavy work.

Ask for Bulletin Giving Complete Information



No. 1233 Graybar Single Drum Winches

10,000-Pound Capacity



This standard Graybar Single Drum Winch is an exceptionally flexible unit. It is equipped with a positive 3-jaw type clutch. When the clutch is disengaged, the winch drum rotates freely. For certain kinds of work this feature is very valuable.

A heavy manually operated brake is provided as an added safety. However, inasmuch as the winch is irreversible, the brake is seldom used.

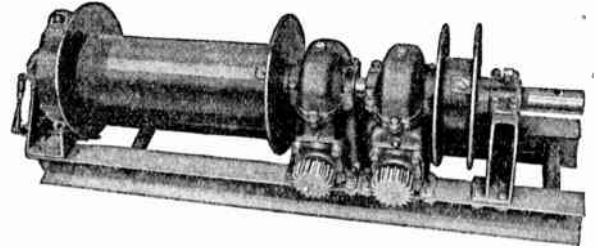
This winch is furnished with a 23-inch drum which has a capacity of 1400 feet of 3/16-inch rope. The pulling capacity is 10,000 pounds.

The arrangement of the driving sprockets is provided to suit the user's needs. They are furnished on right or left hand sides, front or rear.

Intermittent Capacity, Single Line.....	pounds	10,000
Continuance Capacity, Single Line.....	pounds	5,000
Diameter of Drum.....	inches	8
Diameter of Flange.....	inches	16
Length of Drum, Inside.....	inches	23
Approximate Space Required Back of Cab.....	inches	20
Weight, Winch Only.....	pounds	530
Approximate Weight, with SAE Power Take-Off.....	pounds	675
Approximate Weight, with Propeller Shaft Power Take-Off.....	pounds	825

Nos. 1292 and 1355 Graybar Double Drum Winches

10,000-Pound Capacity



No. 1292 (Type WD-300) is similar to No. 1233 Winch but it is equipped with an independently operated smaller winch drum. The 23-inch drum, which has a rope capacity of 1400 feet of 3/16-inch cable, is equipped with a clutch and brake. This drum will rotate as a free spool by disengaging the clutch.

The small independent drum is 4 inches wide and has a capacity of 240 feet of 3/16-inch cable. This smaller drum has no clutch or brake. A 6-inch drum with capacity of 360 feet of 3/16-inch cable is furnished at a slight additional cost.

Drive sprockets are furnished on front or rear side of winch, as desired.

The No. 1355 Winch (Type WD-235) is identical in construction to No. 1292, except the smaller drum is 6 inches wide and has a rope capacity of 360 feet of 3/16-inch cable. Also the worm housing and drive sprocket of the 23-inch drum is located on the left hand side rather than on the right hand side of the winch. Drive sprockets are furnished on front or rear side of winch, as desired.

The shaft extending beyond the bearing supports on the right usually carries a nigger-head or collapsible wire reel. Additional nigger-heads are not usually furnished with double-drum winches, but can be so equipped if desired.

Intermittent Capacity, Single Line.....	pounds	10,000
Continuance Capacity, Single Line.....	pounds	5,000
Diameter of Drums.....	inches	8
Diameter of Flange.....	inches	16
Approximate Space Required Back of Cab.....	inches	20
Weight, Winch Only, with 4-Inch Drum.....	pounds	800
Approximate Weight, with Propeller Shaft Power Take-Off.....	pounds	1200

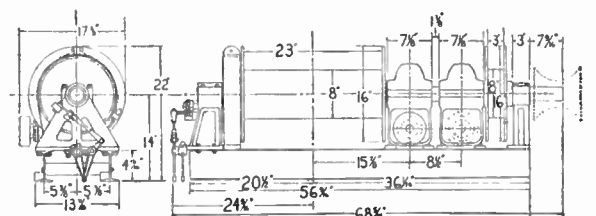
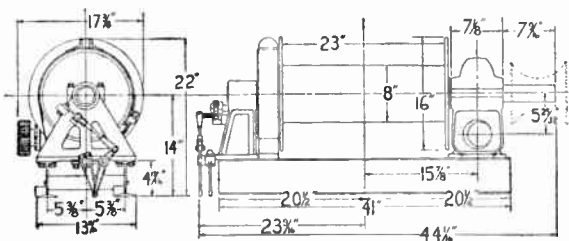
Rope and Cable Capacity

Size.....in.	3/8	7/16	1/2	5/8	3/4	1
Material.....	Steel	Steel	Steel	Steel	Manila	Manila
No. of Feet..	2017	1400	1150	736	506	300



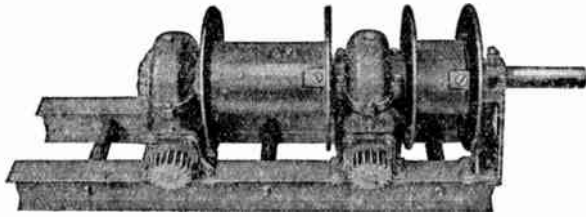
Rope and Cable Capacities

Size Rope Inches	Kind of Material	23-Inch Drum	No. OF FEET	
			4-Inch Drum	6-Inch Drum
1/4	Steel	4600	800	1200
5/16	Steel	3323	578	867
3/8	Steel	2047	356	534
7/16	Steel	1400	240	360
1/2	Steel	1150	200	300
9/16	Steel	950	164	244
5/8	Steel	736	128	192
3/4	Manila	506	88	132
1	Manila	300	52	78





## No. 1227 Graybar Double Drum Winches 10,000-Pound Capacity



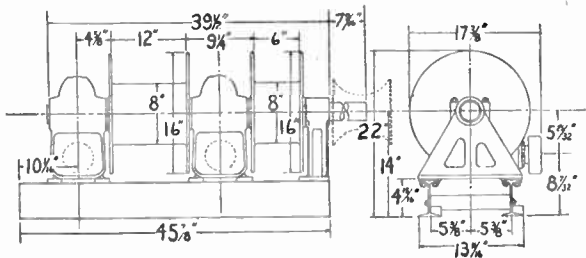
The No. 1227 Double Drum Winch (Type FD) offers the use of two independent winch drums. One drum can be used for raising the derrick and the other used for raising the pole. Neither brake nor clutch is used in this winch.

It is furnished with one 12-inch drum with a rope capacity of 720 feet of 1/16-inch cable, and one 6-inch drum with a capacity of 360 feet of cable. Other available drum combinations are one 12-inch and one 9-inch drum, and a combination of two 12-inch drums.

Intermittent Capacity, Single Line.....	pounds	10,000
Continuance Capacity, Single Line.....	pounds	5,000
Diameter of Drums.....	inches	8
Diameter of Flange.....	inches	16
Approximate Space Required Back of Cab.....	inches	20
Weight, Winch Only.....	pounds	653
Approximate Weight, with Propeller Shaft Power Take-Off.....	pounds	1000

### Rope and Cable Capacities

Size Rope Inches	Kind of Material	No. OF FEET		
		12-Inch Drum	9-Inch Drum	6-Inch Drum
1/4	Steel	2400	1800	1200
5/16	Steel	1734	1299	867
3/8	Steel	1068	801	534
7/16	Steel	720	540	360
1/2	Steel	600	450	300
9/16	Steel	492	370	244
5/8	Steel	384	288	192
3/4	Manila	264	198	132
1	Manila	156	117	78



### Worm Wheel



This is the heavy phosphor bronze worm wheel and special alloy hardened steel worm used in all Graybar Winches. The heavy-duty roller bearings carry the radial load, and the steel and bronze plain bearings carry the end thrust.

## Graybar Utility Automobile Pole Derricks



Middle Type Derricks which are used for general derrick work, center over the middle of the rear of the trucks. Only two men are required to operate this type of derrick; one man operates the winch and the other guides the pole. The middle type derrick is raised and adjusted with the winch. When used as a stiff leg assembly an old pole may be removed from the ground without preliminary digging unless it is firmly embedded or has an abnormal flare. When not in use, the derrick may be disassembled and carried on the side of the truck body, where it is out of the way.

The Corner Type Derrick which works at the right rear corner of the truck body facilitates derrick work in alleys and other restricted places where it is not possible to use the middle type to good advantage. Operating characteristics are practically the same as the middle type.

A complete derrick assembly includes:

- |                                 |   |
|---------------------------------|---|
| Derrick Proper                  | 2 Connecting Pins, Key, Snap and Chain  |
| 1 Right Hand Side Leg           | 1 Rear Spindle and Sheave               |
| 1 Left-Hand Side Leg            | (Length to Suit Truck Body)             |
| 1 Middle Leg, Upper Section     | *1 Tail Bolt Assembly                   |
| 1 Middle Leg, Middle Section    | *2 Front Supports for Spindle Chain     |
| 1 Middle Leg, Lower Section     | *1 Floor Pocket                         |
| 1 Apex, Pin Key, Snap and Chain | 1 Winch Line Hook for End of Winch Line |
| 1 Floor Pocket Bolt             |   |
| 1 Foot Plate                    |   |

\*Designated as metal parts for attaching to truck body.

Type	Each	Lift Feet	†Handles Poles Length Feet	‡Weight Pound
XLM	....	17 1/2	35	285
LM	....	20	45	385
HM	....	22 1/2	55	570
LC	....	20	45	380
HC	....	22 1/2	55	570
2870	....	28	70	750
T	....	21	45	595

†Length of poles handled depends on the balance point of each pole.

‡Weight does not include the weight of boxing nor body parts such as tail bolt assembly, spindle and sheave.

### Adjustable Type

The standard types are provided with a foot piece for lower end of middle leg, which fixes the position of the derrick head and overhang at rear of truck.

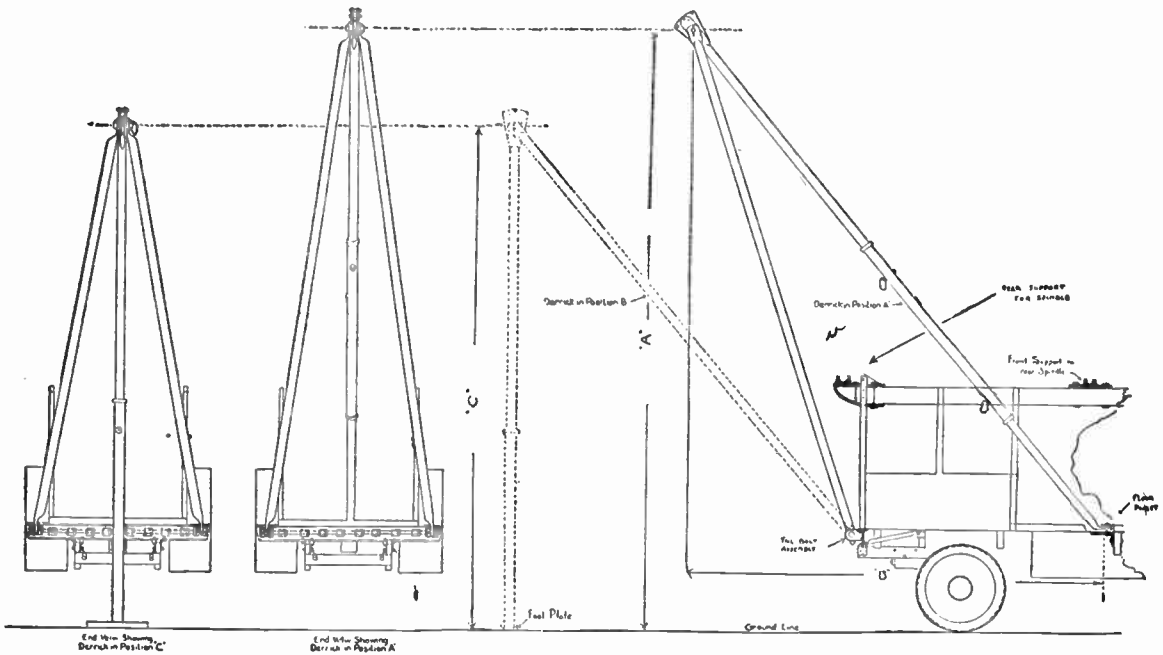
Many times a bank on which a pole is placed or to be placed, or a hedge or deep gutter has prevented the truck being so placed as to be of service.

The Adjustable Type Derrick can be changed from one extreme position to the other without the telescoping center leg becoming disengaged. All positions are fixed by the use of pins.

Adjustable Type.....each .....

## Graybar Utility Automobile Pole Derricks

XLM, LM, HM and 2870 Types



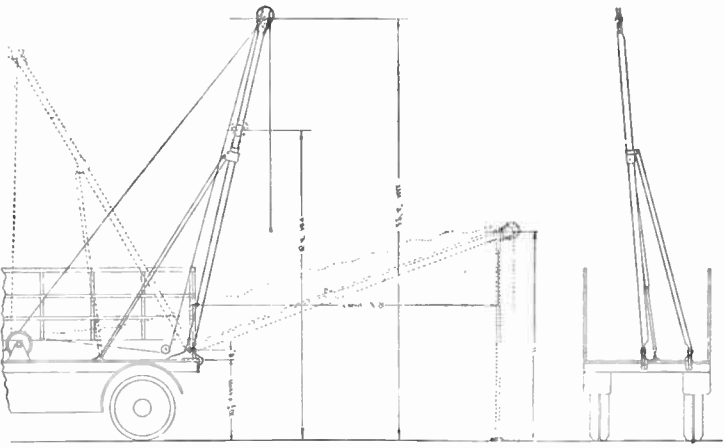
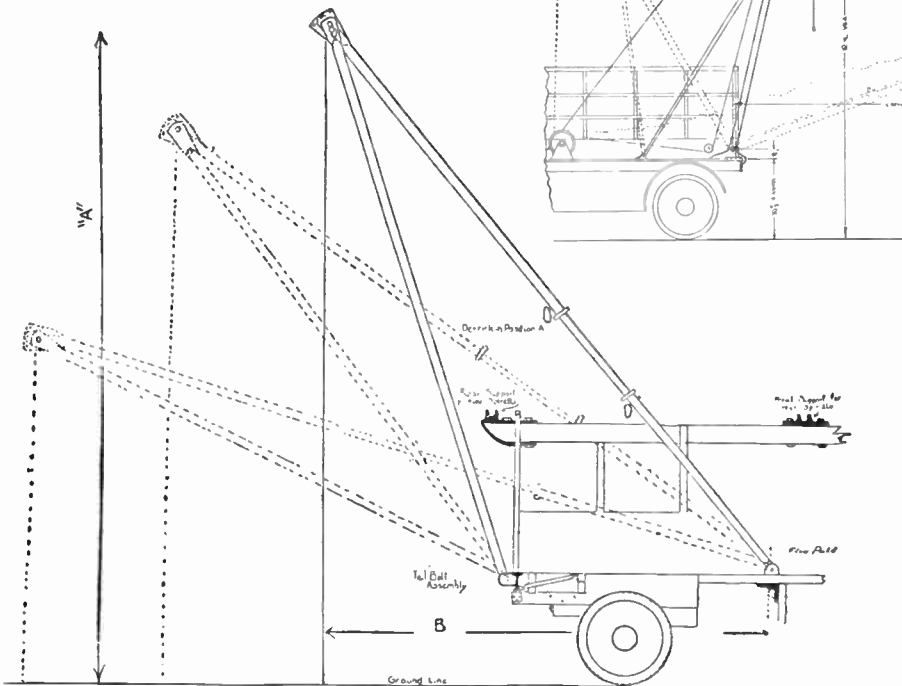
**XLM Type**  
 A=17 Feet 6 Inches  
 B=13 Feet 5 Inches  
 C=14 Feet 9 Inches

**LM Type**  
 A=19 Feet 10 inches  
 B=13 Feet  
 C=16 Feet 11 Inches

**HM Type**  
 A=21 Feet 9 inches  
 B=15 Feet  
 C=18 Feet 10 Inches

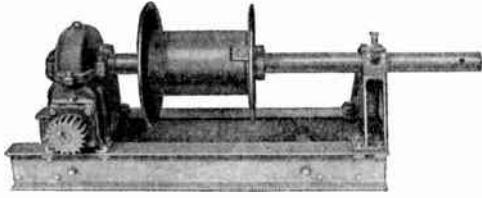
**2870 Type**  
 A=28 Feet  
 B=20 Feet  
 C=24 Feet

**Adjustable Type (Below)**  
 A=Same Maximum Height as Standard Derrick of Same Type and Is Variable Below That Dimension  
 B=Same as Standard Derrick and Varies with Position of Truck



**T Type (Above)**  
 Has a Lift of 21 Feet  
 Handles Poles up to  
 45 Feet in Length  
 Weighs 595 Pounds

## No. 1354 Graybar Single Drum Winches 10,000-Pound Capacity



The No. 1354 (Type L-12) Graybar Winch is a modification of the regular standard single drum winch and is used for every purpose which requires pulling rope on a drum, operating cranes, pole setting derricks and for hoisting and hauling. This type winch is particularly popular for use on light model trucks where the use of a large winch-drum is not required and not much space is available for mounting.

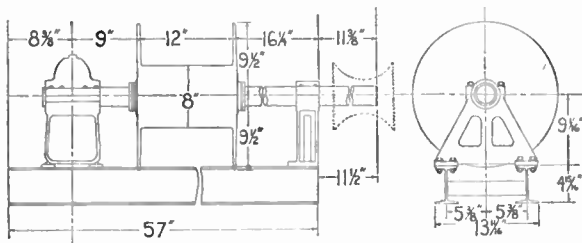
No brake nor clutch is required on this winch, for the winch cannot run free; the winch is driven when pulling and also when lowering.

This winch embodies all of the best features of the more expensive Graybar Winches. It is flexible, light in weight, and built for hard service. To keep the weight to a minimum and assure a greater factor of safety, only high grade heat treated alloy steels and electric steel castings are used in its construction.

Intermittent Capacity, Single Line.....pounds	10,000
Continuous Capacity, Single Line.....pounds	5,000
Diameter of Drum.....inches	8
Diameter of Drum Flange.....inches	19
Approximate Space Required Back of Cab...inches	20
Weight, Winch Only.....pounds	430
Approximate Weight, with SAE Power Take-Off.....pounds	480
Approximate Weight, with Propeller Shaft Power Take-Off.....pounds	730

### Rope and Cable Capacity

Size.....in.	3/8	7/16	1/2	5/8	3/4	1
Material.....	Steel	Steel	Steel	Steel	Manila	Manila
No. of Feet....	1068	720	600	384	264	156



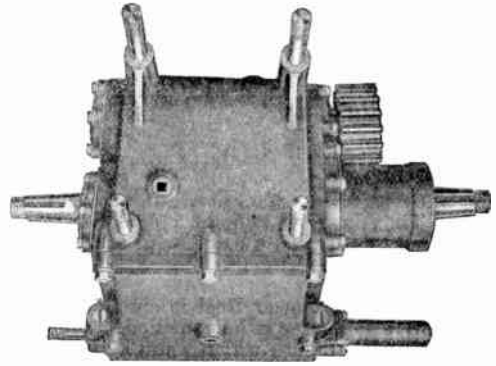
### Niggerheads

Graybar Winches can be furnished with niggerheads on one or both sides. Simply by the use of a longer shaft and auxiliary supporting bearings, Graybar Winches can be equipped with niggerheads to meet practically every demand.

Standard niggerheads furnished are 8-inch; 12-inch niggerheads can also be furnished if desired.

Niggerheads are especially popular on the single drum models and are furnished at a slight additional cost. Ordinarily, when one niggerhead is wanted the standard winch is supplied with the niggerhead mounted on shaft extension, on right hand side. If desired, shafts long enough to place niggerheads beyond cab-line are furnished. In that case, out-board bearings are provided.

## Type P Graybar Propeller Shaft Power Take-Off



This power take-off is installed back of the truck transmission and the power to the wheels passes through it, making it a part of the truck drive.

By means of a single shifting gear and a progressive shift shaft, the engine power may be delivered direct to the rear wheels or to the winch, or both at the same time.

Placing the power take-off back of the truck transmission permits the use of all the truck transmission speeds for operating the winch.

A reverse is provided in the power take-off, which has a slightly higher speed than the forward or pulling position. This feature adds to the cost of the power take-off, but in the long run is a good investment.

When the reverse in the truck transmission is depended on to lower the load, the operator usually races the engine, as the standard truck reverse is slower than any forward speed. Most reputable truck manufacturers list this practice under the 'Don't' column, because of its destructive effects on the motor.

With the Graybar Propeller Shaft Power Take-Off, the operator selects the speed best adapted to the job, and then uses the power take-off reverse, which is always slightly faster.

If this reverse were omitted, the operator would have to go through the selective gate of the transmission shaft lever and on some trucks release a reverse lock. With the Graybar Propeller Shaft Power Take-Off, the shift from forward to reverse is with one lever straight forward or back.

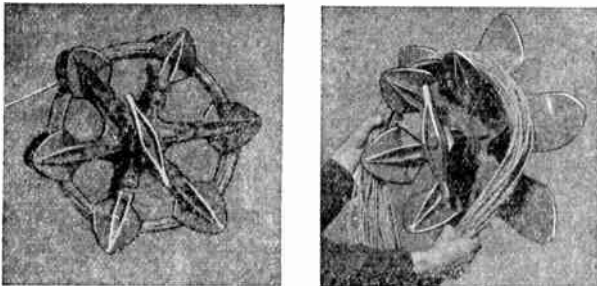
This feature is appreciated on a cable removing job where it is necessary to take a new grip every four to six feet, requiring a reversal of the winch each time.

This unit comprises a high quality of material and workmanship.

The gears are of chrome nickel steel carefully heat treated, and all shafts and gears are mounted on antifric-tion bearings.



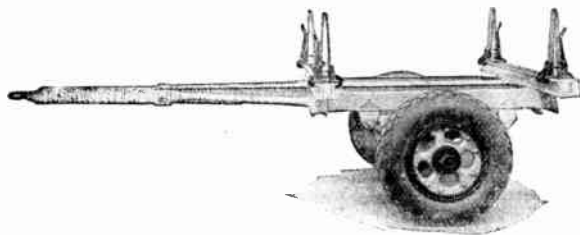
**Type CR Graybar Collapsible Power Reels**



The Type CR Collapsible Power Reel is designed to pick up loose wire in a neat coil. It is light in weight, but sturdy in construction, and is attached to the winch in a short time. The reel arms and the spiders supporting them are made of aluminum alloy castings which insure light weight as well as strength. The spindle to which the spider is attached is made of seamless steel tubing fitted with a bayonet socket lock for attaching to the winch shaft.

The CR Collapsible Power Reel is simple in operation. All Graybar Winches have a hole drilled through the extended end of the shaft into which a pin is driven, leaving one end protruding from the shaft over which the reel spindle is pushed in place and locked by a quarter turn of the reel. The lever on the outside of the reel is turned to the right expanding reel to working position. When the wire is ready for removal, the lever is turned to the left, contracting the reel arms and allowing the wire to be taken off in a neat compact roll.

**Graybar 3 to 7-Ton 2-Wheel Trailers**



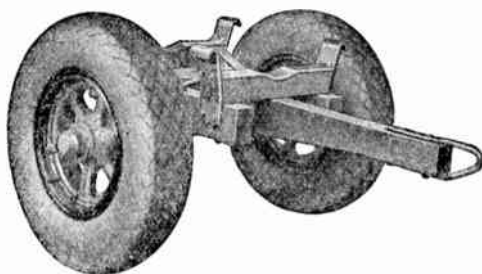
These trailers are equipped with extension tongues, which enable them to handle poles of any length. The tongue is fitted with a pintle eye, which fits into the pintle hook at the rear of the truck. It telescopes within itself to accommodate either long or short poles, and can be adjusted to balance the trailer for easy hand moving when the trailer is empty.

All trailers of this series are equipped with two stationary bolsters on which are sliding up-rights. These up-rights, which facilitate the proper placing of large or small loads on the trailer, are positively locked into position by quick acting cams. At the rear of the trailer is the small hand winch which is used for tightening the cable which binds the load.

**Specifications**

Model	1370	M	H	XH
Capacity.....tons	2	3	5	7
Tread.....in.	56	56	58	60
Standard Tires, Solids.....in.	34x4	36x5	36x8	36x10
Pneumatic Tires, Extra.....in.	32x6	36x8	38x9	.....
Dual Tires, Extra.....in.	30x5	32x6	36x6	.....
Dual Tires, Extra.....in.	.....	36x6	38x9.75	.....
Width Overall.....in.	70	72	80	82
Frame.....in.	4	5	6	7
Springs.....leaves	7	8	12	12
Length of Springs.....in.	3½	3½	3½	4
Width of Springs.....in.	43½	43½	43½	43½
Tongue Extension.....ft.	10¼	11½	11½	11½
Weight.....lbs.	1825	2145	2860	3850

**Graybar Pole Dinkeys**



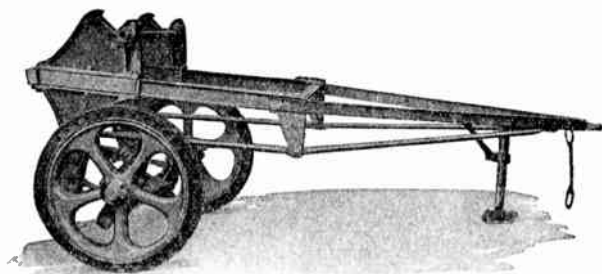
Pole dinkeys, Models C-1 and C-3 are constructed to stand the rough handling such a unit must necessarily receive. The bunks are faced with heavy steel strips and the woodwork is of well seasoned hard wood.

**Specifications**

Model	C-1	C-3	1369
Capacity..... tons	1	3	½
Standard Tires, Solids..... in.	34x3	32x5	.....
Standard Tires, Balloons..... in.	.....	.....	29x4.40
Pneumatic Tires, Extra..... in.	30x5	36x8	.....
Tread..... in.	32	35	56
Width Overall..... in.	44	46	68
Weight..... lbs.	395	735	305

Models C-1 and C-3 have Timken taper roller bearings; Model 1369 has New Departure bearings.

**Graybar Cable Reel Trailers**



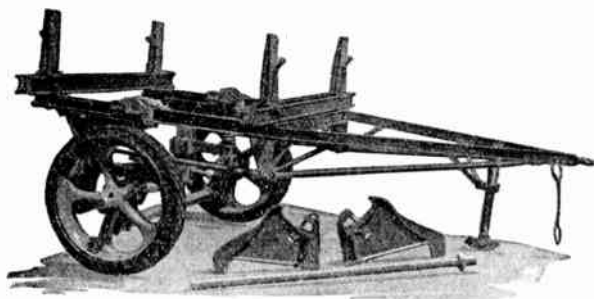
The Model D Cable Reel Trailer affords a means of quickly transporting reels of cable. It has the low center of gravity which is essential to safe transportation of heavy objects at high speed. When the trailer is uncoupled from the truck, the cable can be paid out from the reel without unloading from the trailer.

**Specifications**

Model	D	WD-1	WD-2
Capacity..... tons	3	3	3
Size of Reel Handled.....	34"x7'	38"x7'	48"x7'
Diameter of Reel Spindle..... in.	2½	2½	2½
Tread..... in.	64	68	78
Tires, Solids..... in.	36x5	36x7	36x8
Width of Bolster..... in.	68	72	82
Width Overall..... in.	79	83	93
Size of Axle..... in.	2¾x2¾	2¾x2¾	2¾x2¾
Weight..... lbs.	2250	2330	2385

This unit has electric steel spoke wheels of integral hub type, Timken roller bearings, and special heat treated chrome vanadium steel springs. All castings are electric steel cast. Axle material is 40-45 carbon steel, especially heat treated. The main frame and cross member is a 4-inch, 9½-pound I-beam.

## Graybar Combination Cable Reel and Pole Trailers



This trailer, as the name indicates, is one which can be used for hauling poles at one time and by making a change-over, it can be used for hauling cable reels. Through this combination there are really two trailers purchased at 50 per cent less than would have to be paid for separate cable reel and pole trailers.

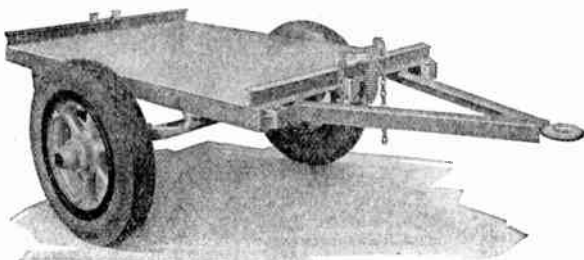
### Specifications

Model.....	CP	WCP-1	WCP-2
Capacity..... tons	3	3	3
Size of Reel Handled.....	34"x7'	38"x7'	48"x7'
Diameter of Reel Spindle... in.	2½	2½	2½
Tread..... in.	64	68	78
Tires, Solids..... in.	36x5	36x7	36x8
Width of Bolster..... in.	68	72	82
Width Overall..... in.	79	83	93
Size of Axle..... in.	2¾x2¾	2¾x2¾	2¾x2¾
Weight..... lbs.	2490	2590	2960

This unit has electric steel spoke wheels of integral hub type, Timken roller bearings, and special heat treated chrome vanadium steel springs. All castings are electric steel cast. Axle material is 40-45 carbon steel, especially heat treated. The main frame and cross member is 4-inch, 9½-pound I-beam.

All trailers furnished complete with one set of pole hauling bolsters and one set of cable reel saddles.

## Graybar Light Pole and General Purpose Trailers

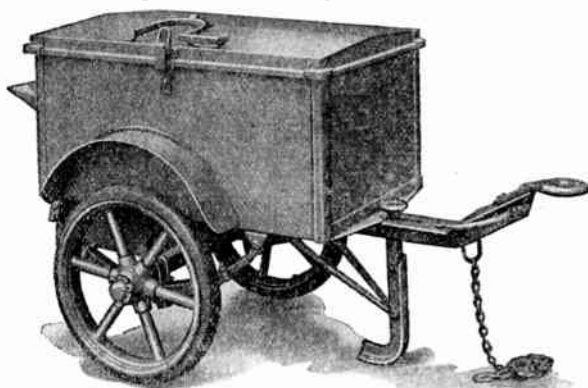


### Specifications

Model.....	L	LR	SL
Capacity..... tons	2	1¾	1
Width of Platform..... in.	46	46	46
Length of Platform..... ft.	8	8	6
Size of Axle..... in.	2½x2½	2½x2½	2x2
Tread..... in.	56	56	56
Tires, Solids..... in.	34x4	34x4	34x3
Weight..... lbs.	1200	1400	700

Has steel spoke wheels with Timken roller bearings.

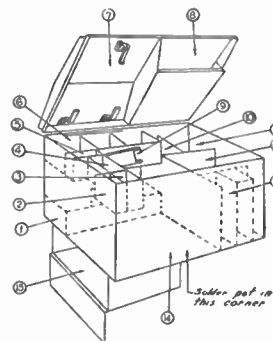
## Graybar Cable Splicer's Carts



This is an all steel, compact, movable workshop. While parked, the cart is kept in a rigid, horizontal position by a support which folds up beneath the body of the cart while traveling. The underslung spring construction eliminates slung and tipping at high speeds. Other features are the drop forged pintle hook, a 7-foot length of safety chain and convenient hand grips for use in moving the trailer about by hand.

Contents consist of:

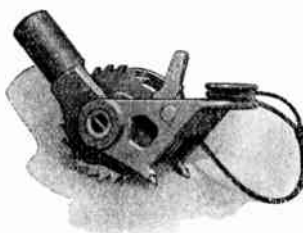
1. Solder, paraffin dipper, test set, condenser, wooden cable dresser.
2. First aid kit.
3. Lashing wire and paster box.
4. Shave hook, furnace wrench, sleeve punches, drill holder, iron cable dresser 216-B tool, steel figures, chipping knife, furnace cleaner, pliers, test pick, test point.
5. Small materials.
6. Cotton sleeving, cotton tape, stearine, rubber bandages, hand test set, test cords, splicer's mirror and muslin.
7. Furnace shield.
8. Splicer's personal effects and specifications.
9. Cable saw.
10. Manhole shovel, solder ladle.
11. Kerosene can.
12. Kerosene furnace.
13. File, rasp, drills, soldering coppers, screw driver, wrench, hammers, paraffin thermometer.
14. All other tools and materials.
15. Tarpaulins and paraffin.



### Specifications

Capacity, 1000 pounds.  
 Length overall, 74 inches; height overall, 41 inches.  
 Size of axle, 1¼ inches square; clearance, 11¼ inches.  
 Springs, 7 leaves, 32x1½ inches.  
 Tires, 24x3 inches, solid. Tread, 34 inches.  
 Electric steel spoke wheels with Timken roller bearings.  
 Length of safety chain, 84 inches.  
 Size of tool box, 42¼ inches long, 22 inches high, and 27 inches wide. Lower compartment is 14½ inches long, 7 inches high, and 20 inches wide.  
 Weight, 480 pounds.

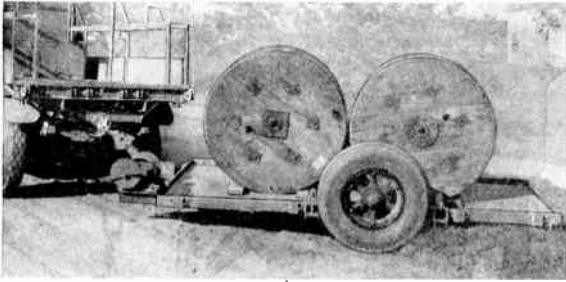
## Graybar Sure-Binders



A winch and ratchet arrangement with a 1-piece cast steel base which carries the pawl, lever and ratchet winch drum. The base fits over a pole and has two heavy spurs which cut into the pole when tension is put on, thus holding the binder firmly in place.

The binder is equipped with 18½ feet of 5/16-inch trulay plow steel wire rope breaking strength, 5,000 pounds.  
 Weight complete, 18½ pounds.

**Graybar Low-Bed Trailers**



The heavily constructed frame of the Low-Bed Trailer is made of angle and channel steel, electrically welded and riveted. The cross members are steel. The trailing eye can be adjusted from 17 to 34 inches from the ground, making the trailer usable with trucks, tractors, or pleasure cars.

**Specifications**

Model	Cap. Tons	Axle Clearance Inches	PLATFORM, INCHES		Height Empty	Height Loaded	Oak Inches
			Length	Width			
2-1,0-4	2	4	108	60	12	10	1 1/8
2-1,0-7	2	7	108	60	15	13	1 1/8
3-1,0-4	3	4	144	65	12	10	1 1/8
3-1,0-7	3	7	144	65	15	13	1 1/8
5-1,0-4	5	4	168	64	12	10	1 1/2
5-1,0-7	5	7	168	64	15	13	1 1/2
Trailer, Capacity..... tons			2	3		5	
Length Overall..... in.			138	174		198	
Width Overall..... in.			91	95		96	
Semi-Elliptic Springs..... leaves			11	14		14	
Size Springs..... in.			2 1/2 x 3 3/8 x 50	2 1/2 x 3 3/8 x 45		3 x 3 3/8 x 45	
Tires, Solids..... in.			32x3	36x5, 36x6		36x7, 36x8	
Tires, High Pressure..... in.			32x6	36x8		38x9	
Tires, Balloon..... in.			7.50-20	9.00-20		11.25-20	
Weight..... lbs.			1500	1900		2500	

Wheel spindle is 2 1/2 inches round heat treated. Lower axle is 3 inches square, hollow. Dayton steel hollow spoke wheels, with Timken taper roller bearings.

A 4-inch double channel tongue, with trailer eye of chrome nickel steel casting. Stake pockets are standard equipment.

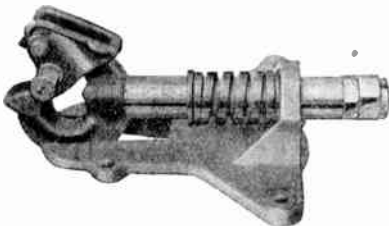
**Optional Equipment**

Stake racks of hardwood construction, securely bolted, furnished in heights of 3 or 5 feet.

Stakes only, of select straight grain hardwood, furnished in heights of 3 or 5 feet (10 stakes required per set).

All steel hand winch; two speeds, 4 to 1 and 24 to 1. Capacity, 5-ton straight line pull. Drum capacity, 160 feet, 5/8-inch cable; 250 feet, 1/2-inch cable; 325 feet, 7/16-inch cable. Size, 16x17x13 inches. Positive internal brakes. Installed on front of trailer. Easily detached.

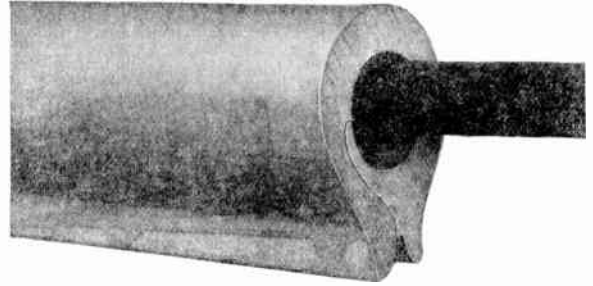
**Pintle Hooks**



The Model B Pintle Hook has positive locking arrangement, preventing the eye of the hook from opening when trailing. The hook is always kept in perpendicular position. Complete assembly weighs approximately 65 pounds.

The Model 1417 is used on trucks up to 3 1/2-ton capacity. Long braces are attached to frame side members. The latch is of the positive lock type.

**Salisbury Line Hose**



A convenient device for protecting linemen from accidental contact with energized lines. By completely surrounding the wire with a substantial wall of voltage resisting rubber more than ample insulation is provided.

Made of high grade, clean, fresh crude rubber, combined with the proper non-metallic materials which give high dielectric strength, toughness, durability and long age.

The self-locking lip prevents the hose from being accidentally detached. Short bends can be made without exposing the conductor it covers.

Its flexibility makes its use adaptable to various conditions of service. Readily follows the bends of taps, jumpers or leads.

Simple to place, slides on wire from either above or below. Can be removed easily. Being relatively small in diameter, light and complete, it is conveniently transported, raised and handled aloft.

Most companies have adopted the 1-inch diameter size as standard as it will cover practically all lines in distribution service. The 1/4 and 3/8-inch sizes are used by telephone and telegraph companies where lines run parallel to high tension power lines and are in danger of becoming energized to a high voltage by induction.

Furnished in 1/4, 3/8, 5/8, 1, 1 1/4 and 1 1/2-inch sizes, inside diameter; in standard lengths of 3, 4 1/2 and 6-foot pieces.

**Salisbury Line Hose Connectors**



For use where two or more pieces of line hose are employed on one wire. Prevents the hose from slipping apart and thereby eliminates the possibility of the conductor being exposed between the adjoining ends.

Shaped to snugly fit the outside contour of the hose. Walls are of extra thickness to provide the necessary grip. A series of ribs, designed to grip the hose are placed on the inside surface to give connector a tight hold.

Made in 2 sizes to fit over 5/8 or 1-inch line hose.

In ordering specify hose size.

**Salisbury Linemen's Glove Bags**



Used to protect linemen's rubber gloves when not in use. Made of heavy, tightly woven, waterproof 42-ounce white duck with non-raveling edges.

Special features: Snap back and D ring for attaching to belt; double head reinforcing rivets; sewed with linen thread, lock stitched; gusset sides and bottom, carrier flat when empty; flat lying cover; strong snap fastener; waterproof; ventilating eyelets in bottom gusset.

No. ....	35	25
Length..... inches	15	9
Width..... inches	8	8



## Salisbury Rubber Insulator Hoods



Used in conjunction with line hose to cover tie-wires and conductors as they pass the insulators. Completely covers this point of hazard in a close fitting and positive manner. Can be used on double arm as well as single arm construction. The extending arms of the hood over-lap the ends of the line hose.

Compounded to secure high insulating qualities over a long period of time. Vulcanized in steel molds while under great pressure, in heavy duty presses; retains its shape and flexibility. Thick walls of solid rubber give it ability to stand up under severe conditions of use.

Requires no attachments to hold it in place. Securely locks itself to the under side of the insulator and cannot open, turn, slide or become accidentally dislodged.

Solid rubber flanges extending inwardly from under sides of the body portion serve to grip the under side of the insulators. Exterior ribs are placed to reinforce the side walls and to increase the grip.

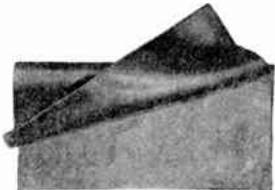
Inside dimensions arranged so hood properly fits all popular types of pin insulators in distribution service.

Length, 14 3/4 inches. Height, 6 1/4 inches.

Weight, 4 pounds. Packed one to a carton.

Telephone and telegraph companies use a special hood shaped to fit telephone style insulators. As it is used on single arm poles only both extending arms of hood are of the same diameter and will snugly grip the 1/4-inch size line hose. In ordering, specify Telephone Type.

## Salisbury Rubber Protective Blankets



Particularly useful in covering secondary racks, dead ends, cut-outs, pot heads, arresters, and similar equipment. Also useful in station and underground work.

Will fold, wrap or hang suspended in any position to provide an insulating barrier between electrical workers and hazards adjacent to their working position.

Bead molded on all four sides to prevent tearing.

### Duck Inserted—Black

Recommended for hardest service conditions. Has ample flexibility. Guaranteed on acceptance tests to resist 20000 volts for 3 minutes.

Plain		With Eyelets	
No.	Size, Inches	No.	Size, Inches
100	36x36x1/8	100-E	36x36x1/8
200	27x36x1/8	200-E	27x36x1/8

### All Rubber—Black

More pliable than the duck inserted type. Guaranteed on acceptance tests to resist 20000 volts for 3 minutes.

Plain		With Eyelets	
No.	Size, Inches	No.	Size, Inches
300	36x36x1/8	300-E	36x36x1/8
400	27x36x1/8	400-E	27x36x1/8

### Pure Gum Center—Maroon

For classes of work requiring extreme flexibility and lightness in weight. Desirable for close wrap around work. Guaranteed on acceptance tests to resist 30000 volts for 3 minutes.

Plain		With Eyelets	
No.	Size, Inches	No.	Size, Inches
500	36x36x1/8	500-E	36x36x1/8
600	27x36x1/8	600-E	27x36x1/8

## Salisbury Protective Rubber Sleeves

Formed and Vulcanized in Chromium Plated Molds  
Full Length



Used to protect the arms and shoulders from accidental contact with energized equipment. The lower ends fit under the gauntlets of rubber gloves.

Amplly reinforced around the eyelet hole and the openings are protected with a substantial bead.

Fastened across the shoulders by an adjustable rubber strap and rubber buttons. A fastener is furnished with each pair of sleeves.

Guaranteed on initial tests to resist 10000 volts for 3 minutes with water electrodes.

Outside arm length, 25 inches. Inside arm length, 17 1/2 inches. Wrist opening, 5 1/2 inches. Arm opening, 11 inches.

Packed one pair to a carton.

### Elbow Length



Fit fairly close around the forearm but permit free arm movement as they are very flexible. Molded in one seamless piece.

The combination of short sleeves with standard length gloves is economical for if either are damaged it is only necessary to replace the unserviceable glove or sleeve.

Guaranteed on acceptance tests to resist application of 10000 volts for 3 minutes between water electrodes.

Outside arm length, 16 1/4 inches. Inside arm length, 13 1/2 inches. Wrist opening, 4 1/4 inches. Arm opening, 6 3/4 inches.

Packed one pair to a carton.

## Salisbury Static-Resisting Line Coats



The special construction of this coat retards static tingling at the neck or wrists when the garment is used during wet weather on work that is adjacent to energized conductors.

Special features: Inside double back; special rubber fasteners; reinforced at belt; all seams sewed and cemented; insulating skirt collar; roomy raglan shoulders; insulating storm cuffs; storm fly front.

Guaranteed to be free from all defects in material or workmanship.

The all rubber collar is standard. Corduroy faced collar can be furnished if desired.

Furnished in sizes 36 to 46 inclusive. Length, 47 inches.

Packed one to a carton.

## Salisbury Electric All-Rubber Coats



For the class of service that does not require the additional features and protection offered by a static-resisting line coat.

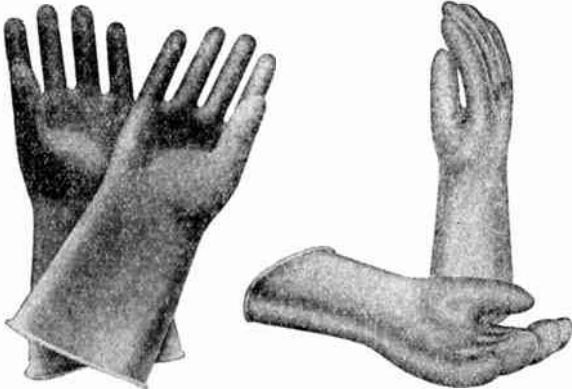
Made of strong durable material, coated on the outside surface with high grade rubber and a frictioned coating on the inside. No metal is used in its construction.

The inner cuff of the double-storm cuff is made of pure gum rubber. The collar is of standard lay-down type. Reinforced at hips to protect coat from tool belt abrasion. Has raglan shoulders, all rubber fasteners and storm fly front.

Furnished in sizes 36 to 46.

Length, 46 inches.

**Salisbury Steam Cured Linemen's Rubber Gloves**



No. 90  
Straight Finger Style

No. 100  
Curved Finger Style

With the realization that rubber gloves are the most important article in a lineman's equipment and that strength and durability are imperative for safety, Salisbury's Gloves are most conscientiously made.

Only the best materials are used and all operations from mixing to final inspection are carefully conducted. Investigation and experiment in laboratory, factory and field are constantly made to discover possible improvements in either material or manufacturing operations.

Qualities of high insulation, low leakage, strength, flexibility and long life are evenly balanced. Each of these essentials is raised to the highest possible value without lowering the standard of some other property.

To satisfy all demands, Salisbury's Gloves are furnished in either the No. 90 standard straight finger or the No. 100 curved finger styles. Both types are furnished in 10000, 15000 and 20000-volt ratings. There is also a choice of gloves that are vulcanized by either the steam or acid process.

All gloves are seamless, form fitting, accurate to size, with finger lengths and widths adjusted to best meet average conditions.

Salisbury Rubber Gloves are guaranteed to pass the most thorough inspection and to meet the A.S.T.M. and N.E.L.A. specifications.

Replacement will be made, or return accepted, of all gloves which fail under initial tests at their rated voltage or otherwise prove unsatisfactory at the time of delivery.

Class B—10000-volt, 14-inch gloves are standard.  
Class A—10000-volt, heavier weight gloves are available.  
Furnished in sizes 9, 9½, 10, 10½, 11 and 12.  
Packed one pair to a box.

**Salisbury Linemen's Protector Gloves Full Gauntlet 4-Inch Style**



Designed to wear over Linemen's Rubber Gloves to protect them from snagging, tearing or abrasive wear. Made expressly for this work and should not be confused with the ordinary work gloves.

Made of specially tanned grade A buffed horsehide, maroon color, and from selected weights.

Remains soft and pliable under all conditions and will not become slippery when wet. Resists

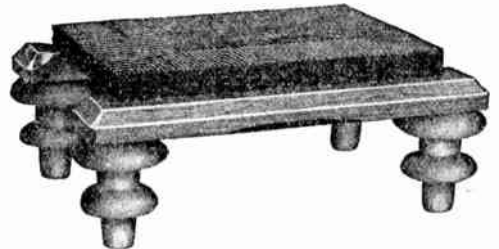
wire puncture to a great degree.

All outside seams are lock stitched. Finger seams sewed at back away from wearing surface. Extra wide reinforcement at thumb seam, making double leather thickness at this point of hardest wear. Finger tips are semi-moccasin style. Equipped with leather pull straps and self engaging buckle to tighten at wrist. Gauntlet does not flare; has a firm back and soft leather front.

Available with either closed or open backs, and also with long thumb crotches for straight finger rubber gloves or short thumb crotches for curved finger gloves.

For Use With Straight Finger Rubber Gloves				
No. . . . .	18-C	18	20-C	20
Style Back	Closed	Open	Closed	Open
Covers Rubber				
Glove Sizes. . .	9, 9½, 10 9, 9½, 10 10½, 11, 12 10½, 11, 12			
For Use With Curved Finger Rubber Gloves				
No. . . . .	118-C	118	120-C	120
Style Back	Closed	Open	Closed	Open
Covers Rubber				
Glove Sizes. . .	9, 9½, 10 9, 9½, 10 10½, 11, 12 10½, 11, 12			
Order by number.				

**Salisbury Insulating Stools**



A low platform on which workmen can stand while performing hazardous tasks in sub-stations, power plants, underground vaults, etc. Has corrugated rubber top and double petticoat rubber insulators for legs. The stool is non-tipping and non-slipping. Dry test flashover, 82,000 volts. Wet test flashover, 19,000 volts.

Size, 18x12 inches, 8 inches high. Weight, 15 pounds.

**Salisbury Switchboard Rubber Matting**



A non-slip corrugated surface matting of high dielectric strength and long aging qualities.

Meets requirements of all standard specifications.

Guaranteed to resist 50000 volts for 3 minutes on acceptance tests.

Furnished in ¼-inch thickness; 24, 30 and 36-inch widths; lengths up to 75 feet. Other

widths and thicknesses can be furnished.





## No. 30 Salisbury Non-Metallic Tool Bags



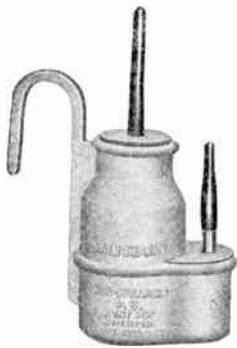
The tool bag is an essential part of line crew equipment as it is an efficient method of raising tools, supplies and material to the pole top.

This bag is of sturdy construction, amply reinforced and designed throughout for heavy duty service.

Made of duck with a single side seam together with top and bottom fastenings strongly sewed. The heavy leather bottom extends 3 inches up the sides. The top is held open, in round form, by a stout non-metallic ring. A 3/8-inch rope handle is firmly spliced to the bag through leather reinforcements. Equipped with a utility pocket on the inside to accommodate small tools, bolts, washers, etc. Bag is collapsible.

Diameter, 12 inches. Height, 15 inches.

## Salisbury Non-Spillable P.B. Paint Pots



This is a rubber container for insulating compound, soldering flux and brushes.

The pot is made of semi-hard, durable rubber and has high insulating qualities. Compound or paste will not affect the container.

A flange extending inward at the junction of the neck prevents the contents from splashing or spilling during rough handling. Compound and paste receptacles are equipped with tapered corks through which rubber-set brushes are securely inserted. When the brushes are in use these stoppers serve as guards to prevent the paint from flowing back

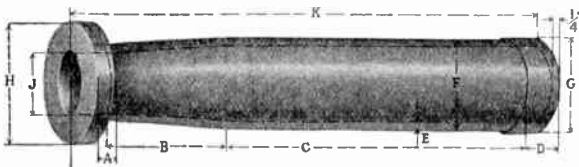
to soil the gloves or hands of the operator.

## Salisbury Separators and Test Caps

Cable end test caps and separators are used as a protective covering for cable ends when cable is cut for tests or during temporary repairs. They serve a double purpose by eliminating the possibility of man touching the exposed ends and protecting the cable from moisture. In covering single conductor cable ends, test caps alone are used.

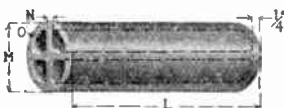
Guaranteed to resist 10000 volts under the wet method of testing.

### Test Caps



No.	Cable Size	DIMENSIONS, INCHES									
		A	B	C	D	E	F	G	H	J	K
370	6-1/c	1/4	1 1/2	3 3/4	1/2	1/16	1 1/8	1 1/4	1 1/2	5/8	6
371	1/0-1/c to 4-0-1/c	1/4	1 1/2	3 3/4	1/2	1/16	1 3/8	1 1/2	1 13/16	15/16	6
713	No. 6-4/c	1/4	2	4 1/4	1/2	1/16	1 1/4	1 3/8	1 1/2	3/4	7
711	No. 0-4/c	3/8	2 1/2	6 1/2	5/8	1/8	1 7/8	2	2 1/2	1 3/8	10
777	375-MCM-4/c	3/8	2 1/2	8 1/2	5/8	1/8	2 3/4	2 7/8	3 3/8	2 1/4	12

### Separators



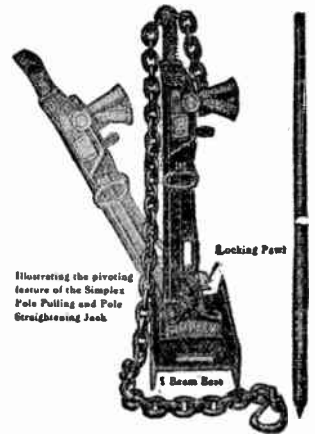
No.	Cable Size	DIMENSIONS, INCHES			
		L	M	N	O
714	No. 6-4/c	3	1	1/8	1/16
712	No. 0-4/c	4 1/4	1 1/2	1/8	1/8
782	375-MCM-4/c	4 1/2	2 7/16	5/32	5/32

## No. 329 Simplex Pole Pulling Jacks

Single acting; automatic in raising and lowering, will not trip. For pulling and straightening telephone, telegraph, electric light and trolley poles any depth in the ground without digging around them.

With 8-foot steel chain, 5-foot steel pinch bar and steel I-beam base.

No.	329
Capacity	15 tons
Height	37 1/2 inches
Lift	21 inches
Wt., Complete	193 lbs.
Price	each \$70.00

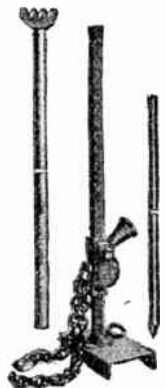


Illustrating the pivoting feature of the Simplex Pole Pulling and Pole Straightening Jack

## No. 325 Simplex Pole Jacks

A combination pushing and pulling jack. Light and sturdy. Furnished with pike pole, steel chains, detachable base and steel lever pole.

No.	325
Capacity	5 tons
Height	48 inches
Lift	36 inches
Weight, without Equipment	33 lbs.
Weight, with Equipment	100 lbs.
Price, with Equipment	each \$45.00
Price, without Equipment, with Lever Box	each 29.00



## No. 324 Simplex Aerial Cable Jack and Slack Puller



Designed for pulling both overhead and underground power and telephone cables. Also for taking up slack in guy wires. Made from the best grade of steels and all parts are heat-treated and hardened. Single acting and automatic operation.

No.	324
Capacity	4000 pounds
Travel	20 inches
Weight, Complete with Handle	14 pounds
Price	each \$25.00

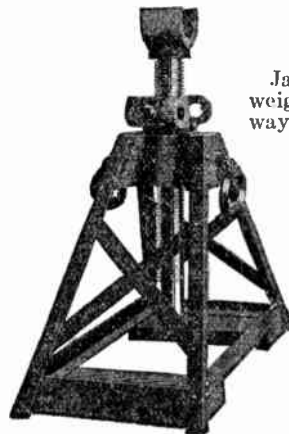
## Simplex Screw Type Cable Reel Jacks

Jacks will handle any standard weight reel with the use of the 3-way nuts.

No. 1 jack handles reels from 42 to 60 inches in diameter; No. 2 handles reels from 60 to 90 inches in diameter.

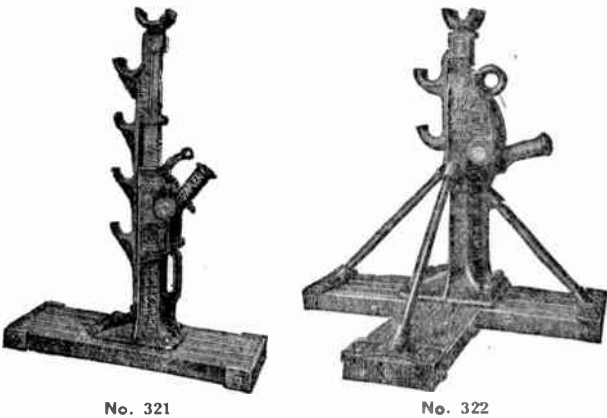
Size of screw, 1 1/8 inches in diameter.

No.	1	2
Min. Ht. Bearing Pt. in.	19 5/8	29 3/4
Max. Ht. Bearing Pt. in.	31 1/8	46 1/4
Lift	11 1/2	16 1/2
Length Base in.	26	39 1/2
Width Base in.	12	15 1/2
Weight	51 lbs.	89
Price	per pair \$36.00	48.00





**Simplex Cable Reel Jacks**  
Automatic Lowering



No. 321

No. 322

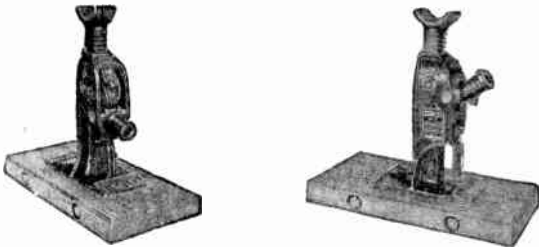
Nos. 320 and 321 are recommended for warehouse service in handling cable, wire rope and belting reels. No. 320 is single acting for reels from 20 to 60 inches in diameter. No. 321 is single acting for reels from 20 to 96 inches in diameter.

No. 322 is generally used for heavy outdoor service. It is double acting for cable reels ranging from 36 to 84 inches in diameter. The T-shaped base provides a firm foundation. Furnished in pairs, one right and one left hand, for uniform operation on each side of the reel.

These jacks are furnished with steel lever bars.

No. ....	320	321	322
Each .....	\$35.00	50.00	65.00
Capacity..... tons	5	10	10
Height..... inches	21	34½	29
Lift..... inches	11	14½	14
Weight..... pounds	46	108	104

**Simplex Portable Cable Reel Jacks**



No. 41

No. 81

Jack held on oak base by taper wedged brackets—can be quickly removed and packed in tool box. Made single acting, raising the load on the downward stroke only, and double acting, raising the load on both the downward and upward strokes.

Designed to lift small, but heavy cable reels from 24 inches to 48 inches diameter, and can readily be used for any work, where 1 to 2-ton loads are to be handled.

Cat. No. ....	DOUBLE ACTING			SINGLE ACTING			
	41	42	43	81	82	83	84
Capacity... tons	1	1½	2	1	1½	2	5
Lift..... in.	8	9½	11	7	8½	9¾	7½
Height.... "	11½	13¼	14½	11¾	13¼	14¾	16
Total Height							
..... in.	19½	22¼	25½	18¾	21¾	24½	23½
Weight with							
Base... lbs.	15½	18	19	17½	18½	19½	35
Price... each	\$16.00	18.00	20.00	16.00	18.00	20.00	24.00

**No. 310 Simplex Emergency Single Acting Jacks**



A single acting, 15-ton jack of extraordinary utility and efficiency. Its pivoting base enables jack to be operated at full capacity, at any angle from horizontal to vertical, as well as vertically.

An all-around jack for use anywhere and everywhere heavy objects are to be pushed or lifted.

The steel detachable shoe and 5-foot special chain attachment permit grappling and engaging loads in awkward or difficult positions, and where the ordinary lifting jack could not operate at all. Heavy calks on base prevent slipping.

Provided with four lifting and pushing points—rotating cap, lower lift, steel adjustable shoe and steel chain, enabling jack to meet every emergency condition.

Capacity.....	tons	15
Lift.....	inches	13
Height.....	inches	22¼
Weight, Jack.....	pounds	66
Weight, Chain, Bar and Shoe.....	pounds	36
Weight, Total.....	pounds	102
Each.....		\$48.00

**No. 101 Simplex Double-Acting Track Jacks**

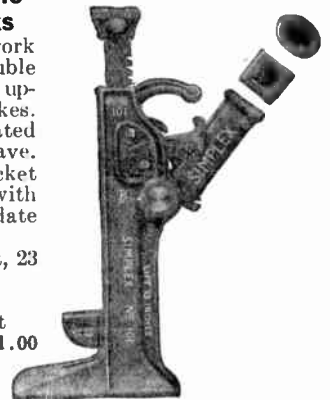
Recommended for track work only. Tripping style, double acting and operates on the upward and downward strokes. Working parts, heat-treated drop forgings. Base concave. Furnished with round socket and 5-foot round pole or with square socket to accommodate standard lining bar.

Capacity, 12 tons. Height, 23 inches. Lift, 12½ inches.

Weight, 59 pounds.

No. 101, with Square Socket without Pole.... each \$21.00

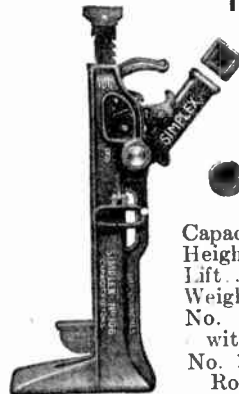
No. 101, with Round Socket and Round Pole..... each \$22.00



**No. 106 Simplex Double-Acting Track Jacks**

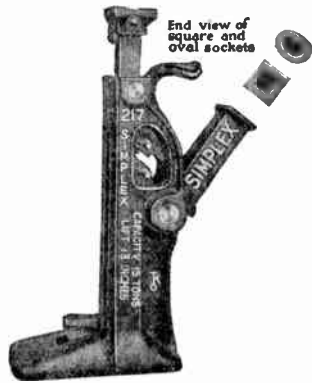
For track work only.

Working parts are heat-treated drop forgings. Base is cored or concave. Furnished with round socket and 5-foot round pole or with square socket to accommodate standard lining bar. Tripping style, double acting.



Capacity.....	tons	12
Height.....	inches	29
Lift.....	inches	17½
Weight.....	pounds	78
No. 106, with Square Socket without Pole.....	each	\$27.00
No. 106, with Round Socket and Round Pole.....	each	28.00

## Simplex Track and Ballast Jacks Single Acting—Tripping Type



No. 217

No. 217 is recommended for track work only. Operates on downward stroke of lever. Its manpower and strength have been approved by the Underwriter's Laboratories.

The rack bar and retaining pawl are of alloy steel, heat-treated; the lifting pawl is high carbon steel, heat-treated; the socket is a steel casting; the base is arched to prevent bending or slipping.

Piano wire coil spring and plunger back of retaining pawl forces it into holding position with a sharp click.

Nos. 216 and 218 are identical with No. 217 except for the heights of the standards and rack bars.

No.	216	217	218
Square Socket without Lever Bar. ea.	\$19.00	21.00	27.00
Capacity..... tons	15	15	15
Height..... inches	17 $\frac{1}{4}$	23	29 $\frac{1}{2}$
Lift..... inches	8	12 $\frac{1}{2}$	18
Weight..... pounds	51	58	74

When oval or round sockets, together with oval or round hickory poles are specified, add \$1.00 to the price.

## No. 185 Simplex Mine and Industrial Jacks Single Acting, Automatic Lowering

Designed for handling coal cutting equipment, mine machines, rearing mine cars; also for contractors, agricultural machinery, tractors and industries. Recommended for heavy overloads. Its double socket and adjustable shoe provide a wide range of service for industries and mines.



Equipped with steel lever bar.

Capacity..... tons	5
Height..... inches	16 $\frac{5}{8}$
Lift..... inches	9 $\frac{3}{4}$
Weight..... pounds	36
No. 185..... each	\$17.00
No. 185, Without Adjustable Shoe..... each	16.00

## No. 22 Simplex Single Acting Jacks

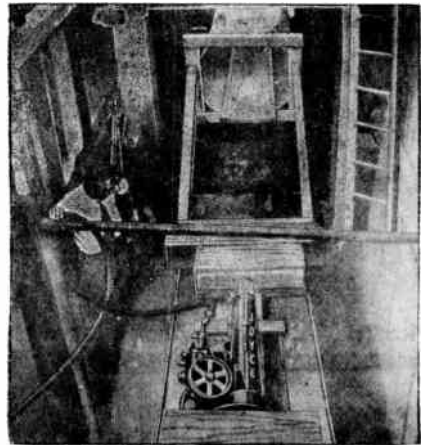


Single acting and automatic in raising and lowering. For electric and steam railway service, contractors and general shop and industrial service. Without machine screw. Working-parts, steel drop forgings. With 5-foot lever steel pole.

Capacity..... ton	10
Height..... inches	21 $\frac{1}{4}$
Lift..... inches	12
Weight..... pounds	59
No. 22, with Double or Round Socket and 5-Ft. Round Steel Bar. each	\$25.00
No. 22, with Oval Socket and 5-Ft. Oval Pole..... each	25.00
No. 22, with Square or round Socket without Pole..... each	24.00

## Joyce Air-Motor-Driven Jack Hoists Ball-Bearing Geared Screw Type

For Locomotives, Coaches and Cars



With this hoist compressed air replaces man power for jacking. One man controls the speed of operation of a pair of hoists from a Y valve in the air line, or each hoist may be operated by means of its control lever. This lever opens and closes the throttle valve to the reversible Ingersoll-Rand motor which is a part of the hoist. The control lever governs the direction of operation (up or down) as well as the speed which ranges from 0 to 8 inches per minute for coach model. Changes in gearing make possible special hoists with  $\frac{1}{3}$  the capacity and 3 times the speed.

The hoist lowers by reversing the motor. It is not self-lowering. There is no chance of running down or dropping for any reason whatever, such as a broken air hose, etc.

There is an automatic shut-off at both upper and lower limits of the ram. The hoist is so powerful that a reduction of air pressure does not affect the operation any more than a slight slowing down of the motor.

The large wheels which are 10 inches in diameter, facilitate movement. Hoist is equipped for alemite lubrication.

A hand operated 12-inch adjustable ram feature is provided in Nos. 17713 and 17413. This eliminates blocking and permits full raise under load. No. 17718 has telescoping screws and rams which provide a high rise.

Hoist No.	Service	Rated Capacity Tons	Height Inches	Rise Inches	Weight Pounds
1799	Locomotive.....	75-100	26	13 $\frac{3}{4}$	460
17915	Locomotive.....	75-100	44	30	605
17718	Coaches.....	50	36	40	535
17713	Loaded Cars.....	50	26	13 $\frac{3}{4}$	450
17712	Coaches.....	50	36	24 $\frac{1}{2}$	435
17710	Loaded Cars.....	50	28	16 $\frac{1}{2}$	390
17413	Empty Cars.....	20	26	13 $\frac{3}{4}$	450
17410	Empty Cars.....	20	28	16 $\frac{1}{2}$	390

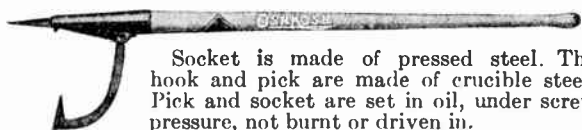
## No. 29 Simplex Single Acting Car Jacks



No. 29 Simplex jack is a powerful 15-ton automatic jack. Particularly adapted for steam and electric railway service, contractors', steel mills, and general industrial duty. Built without a machine screw. Equipped with Simplex oval socket and 6-foot oval pole.

Capacity..... tons	15
Height..... inches	28 $\frac{1}{2}$
Lift..... "	18
Weight..... pounds	98
Price, No. 29, with Oval Socket and 6-foot Oval Pole... each	\$40.00
Price, No. 29, with Round Socket and 6-foot Round Pole..... each	40.00
Price, No. 29, with Square Socket without Pole... each	38.00

**Oshkosh Malleable Solid Socket Peavies**



Socket is made of pressed steel. The hook and pick are made of crucible steel. Pick and socket are set in oil, under screw pressure, not burnt or driven in. Takes same handles as cant hooks.

**Regular Maple Handles**

Cat. No.	Each	Size In. x Ft.	Weight Pounds
121	\$4.67	2 1/4 x 4	7
122	4.74	2 1/4 x 4 1/2	7
124	4.96	2 1/2 x 4	9
125	5.03	2 1/2 x 4 1/2	9
<b>Select Hickory Handles</b>			
134	\$5.44	2 1/4 x 4	8
135	5.71	2 1/4 x 4 1/2	8
137	5.63	2 1/2 x 4	9
138	5.88	2 1/2 x 4 1/2	10

**Oshkosh Carrying or Lug Hooks**

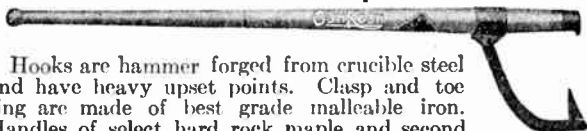


For handling poles and heavy timbers. Made with crucible steel chisel point hooks, and malleable iron clasps and swivels. Handles of selected hard rock maple.

**Regular Pattern**

Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each	Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each
295	2 1/2 x 4	7	\$5.40	297	2 1/2 x 5	8	\$5.60
296	2 1/2 x 4 1/2	8	5.50	...	...	...	...
<b>Extra Heavy, with Steel Swivels</b>							
298	3 x 5	12	7.70	300	3 x 7	14	\$10.00
299	3 x 6	13	8.30	...	...	...	...

**Oshkosh Malleable Clasp Cant Hooks**



Hooks are hammer forged from crucible steel and have heavy upset points. Clasp and toe ring are made of best grade malleable iron. Handles of select hard rock maple and second growth hickory.

**Select Maple Handles**

Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each
188A	2 1/4 x 4	7	\$4.45
189A	2 1/4 x 4 1/2	8	4.60
188	2 1/2 x 4	8	4.50
189	2 1/2 x 4 1/2	8 1/2	4.70
<b>Select Hickory Handles</b>			
199A	2 1/4 x 4	7	\$5.10
200A	2 1/4 x 4 1/2	8	5.30
199	2 1/2 x 4	8	5.20
200	2 1/2 x 4 1/2	9	5.30

**Wood Handles for Carrying or Lug Hooks**

**Rock Maple**



**Regular**

Cat. No.	Each	Diam. Inches	Lgth. Ft.	Wt., Lbs. Each
593	\$1.50	2 1/2	4	3
594	1.70	2 1/2	4 1/2	4
595	1.80	2 1/2	5	4
<b>Extra Heavy</b>				
963	\$2.60	3	5	5
964	3.00	3	6	6
965	3.30	3	7	7

**Wood Handles for Cant Hooks**



**Maple Handles**

Cat. No.	Diameter Inches	Length Feet	Weight Pounds Each	Price Each
541	2 1/4	4	3	\$1.50
542	2 1/4	4 1/2	3	1.70
544	2 1/2	4	3	1.50
545	2 1/2	4 1/2	4	1.70

**Hickory Handles**

572	2 1/4	4	3	\$1.80
573	2 1/4	4 1/2	3	2.00
575	2 1/2	4	4	1.80
576	2 1/2	4 1/2	4	2.20

**No. 10 Oshkosh Pike Pole Guards**

For guarding the hazardous point on pike poles.



The guard works easily and fastens securely in either the guarded or open position. When in the unguarded position, the guard is completely out of the way, snugly fitted around the pole. When in the guarded position, it automatically locks in place and provides complete protection from the pike point.

This guard will fit either the 2-inch or 2 1/2-inch pike poles. It is light in weight, adding only 7 ounces to the pike pole.

Shipping weight, 7 ounces.

No. 10.....each \$1.34

**Oshkosh Plain Pike Poles**



Handles of old growth yellow Washington Fir, straight grained, and free from defects. Pike is of crucible steel with upset shoulder, which distributes the thrust on the entire top of the pole. The pike is driven in and fastened with a rivet running through ferrule, pike and pole.

**Standard Small Size**

Handle is 2 inches even diameter no taper.

Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each	Cat. No.	Size In.	Wt., Lbs. Ft.	Price Each
805	2x10	6	\$5.00	807	2x14	10	\$6.20
806	2x12	8	5.50	808	2x16	11	7.60

**A.T.&T. Pattern**

Handle is 2 1/2 inches in the middle and tapers to 2 inches at each end.

817	2 1/2 x 10	12	\$6.10	820	2 1/2 x 16	15	\$9.20
818	2 1/2 x 12	13	6.50	821	2 1/2 x 18	18	10.10
819	2 1/2 x 14	14	7.80	822	2 1/2 x 20	20	11.70

**Wood Handles for Pike Poles**



Made of yellow Washington Fir.

**Regular Size**

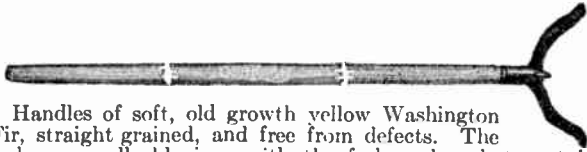
Cat. No.	Diam. In.	Lgth. In.	Wt., Lbs. Each	Price Each
970	2	10	6	\$3.50
971	2	12	7	4.00
972	2	14	9	4.50
973	2	16	10	6.20

**A.T.&T. Pattern—Tapered**

982	2 1/2	12	12	\$6.30
983	2 1/2	14	13	6.90
984	2 1/2	16	14	7.60
985	2 1/2	18	16	8.80
986	2 1/2	20	19	9.80



## Oshkosh Raising Forks



Handles of soft, old growth yellow Washington Fir, straight grained, and free from defects. The forks are malleable iron with the fork and socket cast in one piece.

Cat. No.	Size In.xFt.	Wt., Lbs. Each	Price Each
832	2 x10	10	\$7.00
833	2 x12	12	7.70
834	2 x14	13	8.90
795	2 x16	15	10.70
796	2 1/2 x12	13	10.80
797	2 1/2 x14	14	11.70
835	2 1/2 x16	15	12.30
836	2 1/2 x18	16	13.00
837	2 1/2 x20	18	13.50

## Oshkosh Mule Pattern Wood Pole Supports



Made of Washington Fir tapering slightly at both ends. Forged steel fork and pick, banded at each end with steel bands.

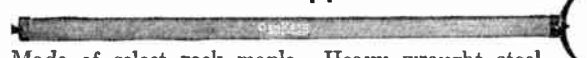
Cat. No.	Size Ft. Ctr.	Diam. In.	Wt., Lbs. Each	Price Each
845	6	3 1/2	23	\$18.60
846	7	4	26	21.60

## No. 740 Oshkosh Fir Deadman Wood Pole Supports



Of clear, straight grained fir. Measures 3x3 inches square, 8 1/2 feet over all. Steel fork has three prongs. No. 740, Weight, 40 Pounds..... each \$16.95

## No. 848 Oshkosh Standard Deadman Wood Pole Supports



Made of select rock maple. Heavy wrought steel fork and pike banded at both ends with steel.

Cat. No.	Size Ft.	Size of Wood, In.	Wt., Lbs. Each	Price Each
848	8	4x2	29	\$27.40

## Oshkosh Jenney Pattern Wood Pole Supports

Made of Washington Fir with forged steel fork.

Steel pikes are placed in the bottom to prevent it from slipping on hard ground.

This support is collapsible and has steel bushed holes where there is any wear.

A light, strong, safe, pole support.

Cat. No.	Size Ft.	Size of Wood, In.	Wt., Lbs. Each	Price Each
842	6	1 3/4 x3	25	\$18.60
843	7	1 3/4 x3 1/2	30	21.30
844	8	1 3/4 x3 1/2	35	23.10

## Oshkosh Special Pike Pole Coating

Oshkosh Pike Poles finished with this specially developed coating prevent loss of time caused by splinters and splinters.

It gives a smooth, hard, transparent coating.

This coating keeps the grain from raising.

It is a non-conductor of electricity.

Can be applied at a slight additional charge.

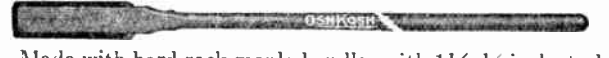
## Oshkosh Tamping Bars



Handle is made of hard rock maple. The tamping head is faced with an iron shoe, and measures 1 3/4 x4 inches.

Cat. No.	Size Feet	Weight Pounds Each	Price Each
854	7	13	\$7.30
855	8	14	8.10

## Oshkosh Tamping Bars With Extra Heavy Iron Shoe



Made with hard rock maple handles with 1 1/4 x 1/2-inch steel shoe on tamping face.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each
1054	7	13	\$6.70
1055	8	15	7.30

## No. 1044 Oshkosh Electric Tamping Bars



Made of steel tubing with malleable iron tampers of different size on each end.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each
1044	8	15	\$7.90

## No. 853 Oshkosh Loys or Slicks



The handle is of 2-inch selected maple and the blade is of tool steel 4 x 1/2 inches, burned onto the handle and held by two large rivets.

Length, eight feet. Weight, 18 pounds each.

Price, No. 853..... each \$13.60

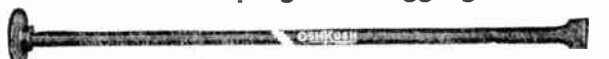
## Oshkosh Crow and Digging Bars



Made of special octagon crucible steel.

Cat. No.	Each	1061	1062	1064	1065	1066
Each		\$6.83	7.26	7.60	8.59	9.87
Size	..... inches	1	1	1 1/8	1 1/8	1 1/8
Length	..... feet	7	8	7	8	9
Weight	..... pounds	20	23	26	28	31

## Oshkosh Tamping and Digging Bars



Made of special octagon crucible steel, tough and stiff.

Cat. No.	Size x Feet	Weight Pounds Each	Price Each
1071	1x7	20	\$9.90
1072	1x8	23	10.40

## Oshkosh Plain Digging Bars



Made of special octagon crucible steel, tough and stiff.

Cat. No.	Size x Feet	Weight Pounds Each	Price Each
1081	1x7	19	\$8.60
1082	1x8	21	9.90

## No. 852 Oshkosh Digging Spuds with Tamper



A light, evenly balanced digging tool. Handle is made of steel tubing with a tamping head of malleable iron, and the blade and socket are of one piece of forged high carbon steel.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each
852	9	20	\$10.60

**Oshkosh Straight Handle Shovels**



Handles are extra large in diameter, measuring 1 3/16 inches.

**With Carbon Steel Blade  
Maple Handles**

Cat. No.	Each	Handle Feet	Strap Inches	Weight Pounds	Extra Handles	
					Cat. No.	Weight Pounds
867	\$4.24	7	22	8	993	\$2.12
868	4.70	8	22	9	994	2.37
869	5.00	9	22	10	995	2.62
870	5.51	10	22	11	996	3.00

**\*Ash or Hickory Handles**

1032	\$4.64	7	22	8	1005	\$2.95
1033	5.10	8	22	9	1006	3.28
1034	5.54	9	22	10	1007	3.87
1035	5.91	10	22	11	1008	4.47

**With Alloy Steel Blade**

**\*Ash or Hickory Handles**

2032	\$5.11	7	22	8	2005	\$2.95
2033	5.56	8	22	9	2006	3.28
2034	6.00	9	22	10	2007	3.87
2035	6.51	10	22	11	2008	4.47

\*For hickory handle, add letter H to Cat. No.

**Oshkosh Crooked Handle Shovels**



Handles are made of selected second growth Northern white ash, tough, strong Highland hickory, or hard rock maple. They are extra large, 1 3/16 inches in diameter.

**With Carbon Steel Blade  
Maple Handles**

Cat. No.	Each	Handle Feet	Strap Inches	Weight Pounds	Extra Handles	
					Cat. No.	Weight Pounds
874	\$4.24	7	22	8	1000B	\$3.26
875	4.70	8	22	9	1000	3.78

**\*Ash or Hickory Handles**

1040	\$4.64	7	22	8	1014	\$3.15
1041	5.10	8	22	9	1015	3.48
1042	5.54	9	22	10	1016	4.07
1043	5.91	10	22	11	1017	4.67

**With Alloy Steel Blade**

**\*Ash or Hickory Handles**

2040	\$5.11	7	22	8	2014	\$3.15
2041	5.56	8	22	9	2015	3.48
2042	6.00	9	22	10	2016	4.07
2043	6.51	10	22	11	2017	4.67

\*For hickory handle, add letter H to Cat. No.

**Oshkosh Short Handled Shovels**



**With Carbon Steel Blade**

The handle is made of Northern white ash, air seasoned.

Cat. No.	Each	Style of Blade	Wt. Lbs.	Cat. No.	Extra Handles		
					Each	Length Feet	Wt. Lbs.
1090R	\$2.04	Round Point	5	1091	\$.63	4 1/2	2
1090S	2.04	Square Point	5	1091	.63	4 1/2	2

**With Alloy Steel Blade**

Equipped with fine quality ash handle.

2090R	\$2.24	Round Point	5	2091	\$.63	4 1/2	2
2090S	2.24	Square Point	5	2091	.63	4 1/2	2

**Oshkosh Western Pattern Post Hole Spoons**



**With Carbon Steel Blade  
Maple Handles**

Cat. No.	Each	Handle Feet	Strap Inches	Weight Pounds	Extra Handles		Wt. Lbs.
					Cat. No.	Each	
859	\$4.67	7	22	10	993	\$2.12	4
860	4.87	8	22	10	994	2.38	5
861	5.04	9	22	11	995	2.62	6
862	5.56	10	22	11	996	3.00	7

**\*Ash or Hickory Handles**

1023	\$5.00	7	22	10	1005	\$2.95	6
1024	5.47	8	22	10	1006	3.28	6
1025	5.84	9	22	11	1007	3.87	7
1026	6.30	10	22	12	1008	4.47	7
1027	7.12	12	22	14	1009	5.18	8

**With Alloy Steel Blade**

**\*Ash or Hickory Handles**

2023	\$5.54	7	22	10	2005	\$2.95	6
2024	5.87	8	22	10	2006	3.28	6
2025	6.44	9	22	11	2007	3.87	7
2026	6.90	10	22	12	2008	4.47	7
2027	7.79	12	22	14	2009	5.18	8

\*For hickory handle, add letter H to Cat. No.

**Oshkosh Eastern Pattern Post Hole Spoons**



**With Carbon Steel Blade  
Maple Handles**

Cat. No.	Each	Handle Feet	Strap Inches	Weight Pounds	Extra Handles		Wt. Lbs.
					Cat. No.	Each	
859E	\$4.67	7	22	10	993	\$2.12	4
860E	4.87	8	22	10	994	2.38	5
861E	5.04	9	22	11	995	2.62	6
862E	5.56	10	22	11	996	3.00	7

**\*Ash or Hickory Handles**

1023E	\$5.00	7	22	10	1005	\$2.95	6
1024E	5.47	8	22	10	1006	3.28	6
1025E	5.84	9	22	11	1007	3.87	7
1026E	6.30	10	22	12	1008	4.47	7
1027E	7.12	12	22	14	1009	5.18	8

**With Alloy Steel Blade**

**\*Ash or Hickory Handles**

2023E	\$5.54	7	22	10	2005	\$2.95	6
2024E	5.87	8	22	10	2006	3.28	6
2025E	6.44	9	22	11	2007	3.87	7
2026E	6.90	10	22	12	2008	4.47	7
2027E	7.79	12	22	14	2009	5.18	8

\*For hickory handle, add letter H to Cat. No.

**Oshkosh D-Handled Shovels**



**With Carbon Steel Blade**

The handle is second growth Northern white ash and is fitted with a pressed steel D top.

Cat. No.	Each	Style of Blade	Wt. Lbs.	Extra Handles			Wt. Lbs.
				Cat. No.	Each	Wt. Lbs.	
1092R	\$2.04	Round Point	4	1093	\$.63	2	2
1092S	2.04	Square Point	4	1093	.63	2	2

**With Alloy Steel Blade**

The handle is of clear straight grained ash, sharply bent, and fitted with a steel D top.

2092R	\$2.19	Round Point	4	2093	\$.63	2	2
2092S	2.19	Square Point	4	2093	.63	2	2

## No. 920 Oshkosh Brush Hooks



For clearing right of ways for power lines or for clearing land of brush. It takes the place of an axe and scythe. It cuts small seedlings, bushes, and small trees easily.

Made of a crucible steel particularly suitable for this tool. The eye or socket is securely welded to blade. The back strap eliminates the necessity of wedging the handle in the eye and holds the handle to the blade tightly. The handle is a high quality axe handle.

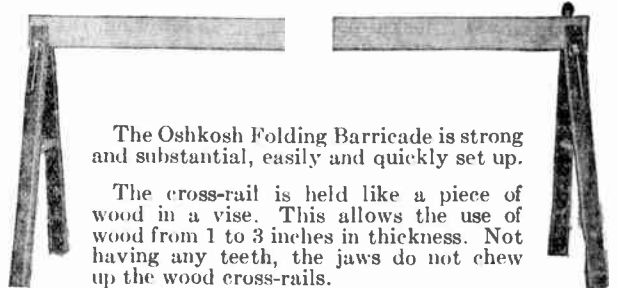
Weight, 4½ pounds.

No. 920 .....each .....

## Oshkosh Folding Barricades



Folded



The Oshkosh Folding Barricade is strong and substantial, easily and quickly set up.

The cross-rail is held like a piece of wood in a vise. This allows the use of wood from 1 to 3 inches in thickness. Not having any teeth, the jaws do not chew up the wood cross-rails.

It is easily and quickly taken down and folded into a small, compact bundle which stacks easily and safely.

The screw handle is made of pipe and forms a socket for holding a danger flag. The socket is 4 inches deep.

A lantern lock is welded to the screw handle of each barricade. The lock itself is a set screw which is screwed outward to release the lantern and screwed to lock the lantern.

Orange finish.

Size .....	inches	32	42
Per Pair .....		\$6.00	\$6.34
Height .....	inches	32	42
Width (Bottom Open) .....	inches	20½ to 22¾	25 to 29
Size Folded .....	inches	3x2x35	3x2x44
Weight .....	pounds	25	32

## No. 897 Oshkosh Folding Take-Up Reels

The reel part collapses and automatically throws off the coil at the same time and in an instant is ready for another coil. The frame, made of heavy hardwood, is strong and heavily reinforced throughout and folds up like a hinge.

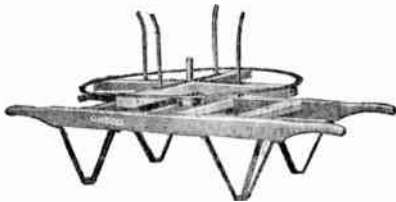
It can be taken down in a moment merely pulling the pin out of the shaft, throwing off the coil and folding up the frame.

Take-up, 21 inches. Weight, 41 pounds.

Price, No. 897.....each \$42.30



## Oshkosh Barrow Reels



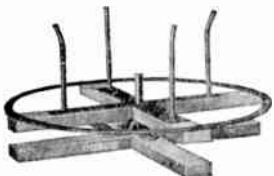
Made of hard rock maple strongly reinforced with angle iron braces. Rests on strong steel legs. Has a large diameter pivot and is made for heavy work.

Cat. No.	Description	Wt., Lbs. Each	Price Each
900	Barrow Reel Only .....	80	\$46.40
901	Extra Pins, per Set of 4 .....	4	5.60

## Oshkosh Pay-out Reels

Made of hard maple, well constructed and re-enforced throughout.

Cat. No.	Wt., Lbs. Each	Price Each
902	40	\$27.80



## Oshkosh Warning Signs

This warning sign is light in weight, yet durable. Legs are of ½-inch high carbon steel. Has 1¼-inch flange around edge of lettered side.

Has two hollow handles for adjusting angle of the legs. These handles also serve as flag sockets, and each is equipped with a lantern lock.

Black letters, 5½ inches high, on traffic yellow background.

Height, 43 inches.  
Width, 28 inches.  
Thickness, 1¼ inches.  
Size folded, 28x28x1¼ inches.  
Weight, 23 pounds.  
Warning Sign.....each \$6.00



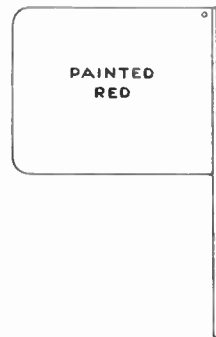
## Oshkosh Metal Flags

This metal flag is light and strong. It is made of 16-gauge steel welded to a 5/8-inch hollow iron staff. The flag is painted bright red and the staff black. The little peg hole near the top is for conveniently hanging it up in the truck.

The Oshkosh Warning Sign and the Oshkosh Folding Barricade have handy sockets to accommodate this flag.

Staff, 20 inches high.

Size of flag, 12x10 inches.  
Metal Flag.....each \$6.7





**Oshkosh Safety Extension Ladders**

A light weight, safety extension ladder designed expressly for public utilities.



Equipped with an automatic safety lock or latch. This lock is so arranged that when pulling on the raising rope, the lock is lifted out of position. The instant the strain on the rope is slackened, the lock drops in place. In lowering, the extension must be lowered slowly. It cannot accidentally drop.

The side rails are made from straight grained, properly seasoned aeroplane spruce.

The rungs are made from tough mountain hickory, straight grained. Each rung has a shouldered tenon joint which is pressed tightly into the side rails, assuring a safe, tight fit. The side rails of each section are connected at top, middle, and bottom with steel tie-rods. This combination makes a rugged, durable construction. Either section can be used separately as an individual ladder, both being equipped with safety tips and pikes.

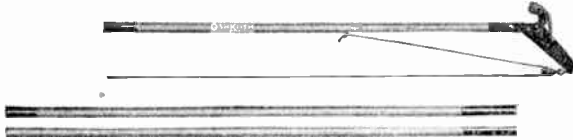
Other safety features include rubber faced tips, transparent safety finish, safety pole-grippers, and rubber guarded safety pikes. All metal parts are par-kerized.

Furnished in full range of lengths.

Weight, 2 pounds per foot, average.

Safety Extension Ladder... per ft. \$1.14

**No. 915 Oshkosh Tree Trimmers**



The Oshkosh Tree Trimmer is light and strong. The head is made of two pieces of light forged steel reinforced and riveted together. These sides act as a guide for the thin saw steel cutting blade.

The blade is pivoted and starts cutting with a slicing motion the moment the rope is pulled. It cuts limbs up to 1 1/2 inches in diameter.

The handle is made in three sections of 1 1/2-inch straight grained, clear Washington Fir. One 6-foot section is attached to head, and two 7-foot lengths equipped with positive couplings of rigid construction, yet easily dismantled.

Furnished complete with handle and short section of rope.  
 No. 915, Trimmer Complete, wt., 13 pounds... each \$10.68  
 No. 915B, Blade, wt., 10 ounces... each 2.67  
 No. 915S, Spring, wt., 2 ounces... each .47  
 No. 915EM, Middle Extension, wt., 4 pounds... each 2.96  
 No. 915EE, End Extension, wt., 4 pounds... each 1.92  
 No. 915R, 20 Feet of Rope, wt., 1/4 pound... each 1.54

**No. 916 Oshkosh Tree Saws**

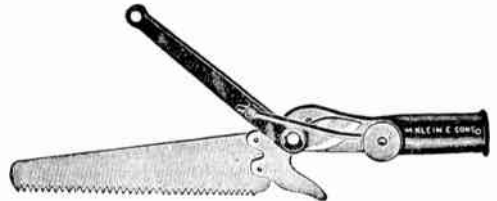


The saw blade is a strong, thin, fine tooth blade. It cuts fast and clean and leaves a good smooth cut.

The steel frame has a hook for hanging saw in tree or pulling cut branches out that have caught. The 6-foot handle has a ferrule on bottom to which can be connected the regular extensions of the Oshkosh Tree Trimmer.

No. 916, Tree Saw, weight, 5 pounds... each \$8.38  
 No. 916B, Saw Blade, weight, 1/4 pound... each .67  
 No. 916T, Saw Tightener, weight, 1/4 pound... each 1.54

**No. 3600 Klein's Favorite Tree Trimmer**



Will sever a one inch branch.

Knife is held open by a flat steel spring and is operated by a rope attached to the end of the lever.

Head is one piece and comprises the hook portion with which the knife engages and the socket into which the handle is inserted. This socket is straight, eliminating the necessity of tapering the end of the handle.

Knife forged from tool steel and is integral with lever.

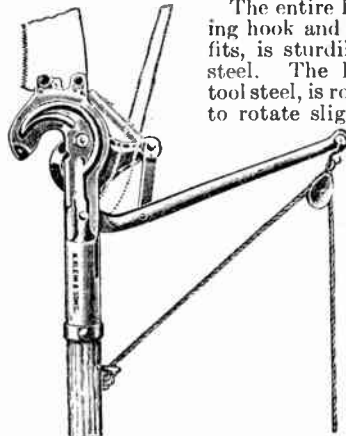
No.	Each	Size Over All, In.	Wt.
3600-20	\$8.50	17, without saw	3 1/2
3600-21	11.00	23, with saw	4

**Tree Trimmer Handles**

Length, 18 feet, brass ferrules.

No. 3601-6, Wt., 10 1/2 Lbs., 3 Sections	each \$9.00
No. 3601-9, Wt., 9 3/4 Lbs., 2 Sections	each 7.50

**No. 3628 Klein Tree Trimmers**



The entire head of this tool, comprising hook and socket into which handle fits, is sturdily constructed of pressed steel. The knife, made of tempered tool steel, is round in shape and arranged to rotate slightly with each cut, thus providing the entire circumference of the blade for cutting and giving an edge more than 3 times the length of that on the ordinary blade.

The leverage makes this trimmer cut the heavier branches quite easily. Knife may be readily removed for sharpening or renewal. Two threaded holes are provided for attaching saw.

Size over all, 12 1/2 inches. Weight, 3 1/2 pounds.  
 Price, No. 3628, Trimmer... each \$8.50

**No. 913-15 Klein Tree Trimmer Saws**



No. 913-15

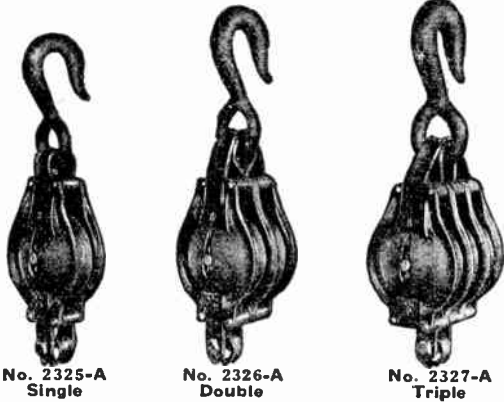


No. 913-12

No.	Style	Weight Pounds	Price Each
913-15	Curved Blade	1/2	\$2.50
913-12	Straight Blade	3/8	2.50

## B & L Star Brand Public Utility Star Metal Blocks for Manila Rope

Malleable Iron Shells—Loose Side Hooks and Becketts



Hooks are drop-forged of special steel and of extra large size and strength. The shell is certified malleable iron—carefully rounded and without sharp projection and constructed to prevent rope jamming between the shell and sheaves.

Double blocks of all sizes have full center straps, and all straps extend through the entire length of the block so all becket strain is borne by the straps not the shell.

Pin ends are entirely covered by recess in sides of the shell, allowing the block to be used on the ground or to pass any protruding object, when raising or lowering without interference.

Sheaves are of standard tackle block dimensions, and can be supplied japanned or galvanized, with any style bushing.

Blocks can be supplied promptly in all sizes. Supplied with any connection, including safety link.

Sheaves in 8-inch blocks and smaller are same sizes as in regular mortise wood blocks. Sheaves in 9-inch blocks and larger are same sizes as in wide mortise wood blocks.

## B & L Star Brand Public Utility Snatch Blocks

Wrought Iron Shell—For Manila Rope, Boston Pattern



No. 2356

Has malleable iron shell, extra heavy drop-forged flattened stiff swivel hooks, wrought iron straps, safety-locking link and smooth rounded edges to prevent chafing rope.

Blocks furnished with sheaves for wire rope if desired.

Size Sheave Inches	Star Graphite Bushed Self-Lub. Each	5-Roller Bushed Each	Star Metaline Bushed Self-Lub. Each	For Rope Diam. Inches	Length Shell Inches
3 x 1 1/8 x 1/2	\$4.50	\$5.15	\$5.75	7/8	6
3 1/2 x 1 1/4 x 1/2	5.50	6.25	6.75	7/8	7
4 1/2 x 1 3/8 x 5/8	6.50	7.35	8.00	1	8
5 x 1 3/8 x 5/8	7.50	8.50	9.25	1 1/8	9
5 3/4 x 1 7/8 x 3/4	10.00	11.50	12.50	1 1/4	10
6 3/4 x 2 1/8 x 3/4	12.50	14.00	15.50	1 1/2	12
8 x 2 1/4 x 7/8	16.00	18.00	19.50	1 3/4	14
9 x 2 5/8 x 1	21.00	24.00	26.00	2	16

## B & L Star Brand Public Utility Snatch Blocks

### Wood Shell—For Manila Rope Boston Pattern



No. 2355

Has drop-forged flattened stiff swivel hooks. All connections drop-forged, shells double cross bolted and the bow straps extend to the bottom of the shell.

Size Sheave Inches	Star Graphite Bushed Self Lub. Each	Self-Adj. 5-Roller Bushed Each	Star Metaline Bushed Self-Lub. Each	Rope Diam. Inches	Length Shell Inches
3 x 1 1/8 x 1/2	\$4.00	\$4.65	\$5.25	7/8	6
3 1/2 x 1 1/4 x 1/2	4.75	5.50	6.00	7/8	7
4 1/2 x 1 3/8 x 5/8	5.75	6.60	7.25	1	8
5 x 1 3/8 x 5/8	6.75	7.75	8.50	1 1/8	9
5 3/4 x 1 7/8 x 3/4	8.50	10.00	11.00	1 1/4	10
6 3/4 x 2 1/8 x 3/4	10.00	11.50	13.00	1 1/2	12
8 x 2 1/4 x 7/8	13.00	15.00	16.50	1 3/4	14
9 x 2 5/8 x 1	17.00	20.00	22.00	2	16

### Iron Bushed

DIMENSIONS, INCHES Size Sheaves	Diam. Rope	Length Shell	ALL JAPANNED EACH			ALL GALVANIZED EACH		
			Single	Double	Triple	Single	Double	Triple
1 3/4 x 1/2 x 3/8	3/8	3	\$1.10	\$1.60	\$2.10	\$1.20	\$1.75	\$2.30
2 x 5/8 x 3/8	1/2	3 1/2	1.20	1.75	2.35	1.30	1.95	2.60
2 1/4 x 5/8 x 3/8	1/2	4	1.30	1.85	2.60	1.45	2.05	2.90
3 x 3/4 x 3/8	5/8	5	1.65	2.50	3.30	1.90	2.85	3.85
3 1/2 x 1 x 1/2	3/4	6	2.00	3.10	4.20	2.35	3.65	5.00
4 1/4 x 1 x 1/2	7/8	7	2.65	4.10	6.00	3.15	4.85	7.20
4 3/4 x 1 1/8 x 5/8	1	8	3.25	5.40	7.40	4.00	6.70	9.15
5 1/2 x 1 3/8 x 5/8	1 1/8	9	4.60	7.30	10.00	5.65	9.00	12.25
6 1/4 x 1 1/2 x 3/4	1 1/4	10	5.50	9.00	12.00	6.80	11.10	14.90
8 x 1 5/8 x 3/4	1 3/8	12	8.40	13.70	19.80	10.50	17.00	24.20
9 1/2 x 1 7/8 x 7/8	1 1/2	14	15.50	28.00	38.50	18.50	32.60	44.90

### Patent 6-Roller Bushed

Size Sheaves	Diam. Rope	Length Shell	\$1.30	\$2.10	\$2.60	\$1.40	\$2.25	\$2.80
1 3/4 x 1/2 x 3/8	3/8	3						
2 x 5/8 x 3/8	1/2	3 1/2	1.40	2.35	3.00	1.50	2.55	3.25
2 1/4 x 5/8 x 3/8	1/2	4	1.50	2.50	3.40	1.65	2.70	3.70
3 x 3/4 x 3/8	5/8	5	2.00	3.10	4.35	2.25	3.45	4.90
3 1/2 x 1 x 1/2	3/4	6	2.40	3.90	5.40	2.75	4.45	6.20
4 1/4 x 1 x 1/2	7/8	7	3.05	4.90	6.85	3.55	5.65	8.05
4 3/4 x 1 1/8 x 5/8	1	8	3.85	6.60	9.20	4.60	7.90	10.95
5 1/2 x 1 3/8 x 5/8	1 1/8	9	5.25	8.95	11.80	6.30	10.65	14.05
6 1/4 x 1 1/2 x 3/4	1 1/4	10	7.00	10.90	14.85	8.30	13.00	17.75
8 x 1 5/8 x 3/4	1 3/8	12	10.20	17.50	25.00	12.30	20.80	29.40
9 1/2 x 1 7/8 x 7/8	1 1/2	14	17.50	30.00	41.50	20.50	34.60	47.90

### Graphite-Bronze Bushed

Size Sheaves	Diam. Rope	Length Shell	\$1.60	\$2.65	\$3.40	\$1.70	\$2.80	\$3.60
1 3/4 x 1/2 x 3/8	3/8	3						
2 x 5/8 x 3/8	1/2	3 1/2	1.70	2.90	3.85	1.80	3.10	4.10
2 1/4 x 5/8 x 3/8	1/2	4	1.80	3.15	4.25	1.95	3.35	4.55
3 x 3/4 x 3/8	5/8	5	2.35	3.80	5.40	2.60	4.15	5.95
3 1/2 x 1 x 1/2	3/4	6	3.10	5.25	7.20	3.45	5.80	8.00
4 1/4 x 1 x 1/2	7/8	7	3.60	5.90	8.40	4.10	6.65	9.60
4 3/4 x 1 1/8 x 5/8	1	8	4.55	7.65	10.70	5.30	8.95	12.45
5 1/2 x 1 3/8 x 5/8	1 1/8	9	5.90	10.30	13.85	6.95	12.00	16.10
6 1/4 x 1 1/2 x 3/4	1 1/4	10	7.75	12.85	17.55	9.05	14.95	20.45
8 x 1 5/8 x 3/4	1 3/8	12	11.00	19.00	27.20	13.10	22.30	31.60
9 1/2 x 1 7/8 x 7/8	1 1/2	14	18.00	31.00	43.00	21.00	35.60	49.40

**B & L Star Brand Stringing Snatch Blocks**  
**With Drop Link or Boston Self-Locking Links**  
**Aluminum Conductor**

Made almost entirely of aluminum. Used in stringing aluminum conductors, as a harder metal might result in abrasion of the expensive conductor.



PU-32

The main strain is taken through the drop-forged swivel hook attached to the drop-forged steel strap with the self-locking latch, but these parts are far enough from the conductors so they never come in contact.

Made in several sizes and fitted with special Lynite 6-roller bearing sheaves.

- 7-Inch Sheave Blocks for Nos. 2/0 to 300,000 C.M. Aluminum Cable, Weight 13 1/2 Lbs... each **\$8.50**
- 10-Inch Sheave Blocks for 336,400 to 500,000 C.M. Aluminum Cable, Wt. 18 Lbs... each **12.50**
- 14-Inch Sheave Blocks for 500,000 C.M. Aluminum Cable, and larger. Wt. 37 Lbs... each **21.25**

Other sizes made to specification; prices upon application.

**B & L Star Brand Public Utility Snatch Blocks**

**Eastern Pattern—Malleable Shells**  
**For Manila Rope**



No. 2357  
Closed



No. 2358  
Open

Has malleable iron shell, extra heavy drop-forged flattened stiff swivel hooks, wrought iron straps, safety-locking link and smooth rounded edges to prevent chafing rope.

Blocks furnished with sheaves for wire rope if desired.

**B & L Star Brand Stringing Snatch Blocks**  
**Wood Shell**



PU-38

Equipped with specially designed 6-roller bearing sheaves to insure freedom of action, as any failure would create a dangerous abrasion of the conductors.

This method may be carried out with standard commercial snatch blocks, but one block jamming would cause damage to the conductor, even though the remaining blocks were functioning properly.

These blocks are made with special wide throats when so desired, so as to accommodate any large splicing that may run over the sheave.

- 7-Inch Sheave Blocks for Nos. 2/0 to 300,000 C.M. Aluminum Cable.
- 7-Inch Sheave Blocks for 1 to 188,700 Copper Cable
- 10-Inch Sheave Blocks for 336,400 to 500,000 C.M. Aluminum Cable.
- 10-Inch Sheave Blocks for 4/0 to 314,500 Copper Cable.

Other sizes to specification; prices on application.

**B & L Star Brand Public Utility Snatch Blocks for Wire Rope**

**Drop Forged Flatted Stiff**

**Swivel Hooks, Heads and Links**

This block is designed especially for truck winch work. Built rugged to stand hard service and heavy loads, and light enough to be easily handled by the screw.

It is all galvanized.

Larger and smaller sizes of this block can be furnished if desired.

Size Sheave in.	6x1x3/4	8x1 1/4x7/8	10x1 1/4x1
Weight pounds	15	32 1/2	52
Each	<b>\$5.85</b>	<b>7.80</b>	<b>11.70</b>



Size Sheave Inches	Star Graphite Bushed Self-Lub. Each	5-Roller Brushed Each	Star Metaline Bushed Self-Lub. Each	For Rope Diam. Inches	Length Shell Inches
3 x 1 1/8 x 1/2	\$4.50	\$5.15	\$5.75	7/8	6
3 1/2 x 1 1/4 x 1/2	5.50	6.25	6.75	7/8	7
4 1/2 x 1 3/8 x 5/8	6.50	7.35	8.00	1	8
5 x 1 3/8 x 5/8	7.50	8.50	9.25	1 1/8	9
5 3/4 x 1 7/8 x 3/4	10.00	11.50	12.50	1 1/4	10
6 3/4 x 2 1/8 x 3/4	12.50	14.00	15.50	1 1/2	12
8 x 2 1/4 x 7/8	16.00	18.00	19.50	1 3/4	14
9 x 2 5/8 x 1	21.00	24.00	26.00	2	16

**Improved B & L Star Chain Hoists**



The principle of the B & L Hoist operation is extremely simple and the points of contact of the scroll on hand wheel and load gear teeth are machined to an accurate fit.

Improved construction methods eliminate the possibility of spreading the load gear teeth being engaged at exact depth by scroll, even after long wear, and with overload.

It is fully equipped with radial and thrust ball bearings. It has only 2 moving parts. It holds its load securely at any point without a brake. All parts are interchangeable, being built and assembled by precision methods. It is light, safe and portable. It is compact with low head room. The drop-forged steel hooks are proof-tested. It is automatically lubricated and operates with perfect smoothness. Chains are the finest obtainable and fit the wheels correctly.

Hoist is tested to twice its rated capacity before shipment. In efficiency of operation the B & L Improved Star Chain Hoist compares favorably with the most expensive geared hoists.

Capacity Hoist Pounds	Power Required to Lift Full Load Pounds	Regular Lift Feet	Weight Pounds Hoist Complete	Price Each
500	30	8	38	<b>\$45.00</b>
1000	52	8	47	<b>50.00</b>
2000	92	8	65	<b>60.00</b>
3000	110	8	96	<b>80.00</b>
4000	130	9	133	<b>100.00</b>
6000	123	10	147	<b>110.00</b>
8000	135	10	188	<b>130.00</b>
12000	200	12	341	<b>230.00</b>

The 6000-pound capacity and larger sizes have foot blocks.



### B & L Star Brand Aerial Cable Guide and Straightener

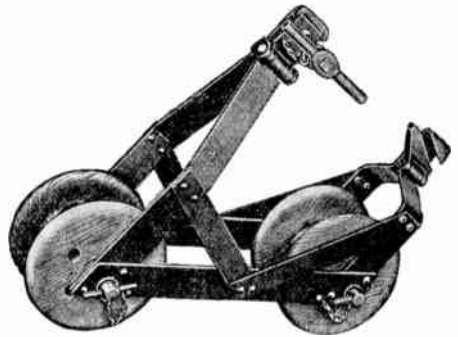


PU-29

For straightening lead covered cable while pulling into rings.  
Standard size is for 2 $\frac{5}{8}$ -inch diameter cable; other sizes made up for larger diameter cable. Weight, 24 pounds.

Each ..... \$21.40

### B & L Star Brand Aerial Cable Guides With Wood Rollers



No. PU-39

For pulling lead covered cable into supporting rings.  
Each, Weight 32 Pounds..... \$24.00

### B & L Star Brand Aerial Cable Cars



PU-36

Weight, 21 $\frac{1}{4}$  pounds..... Each \$15.00

### B & L Star Brand Aerial Hand Lines

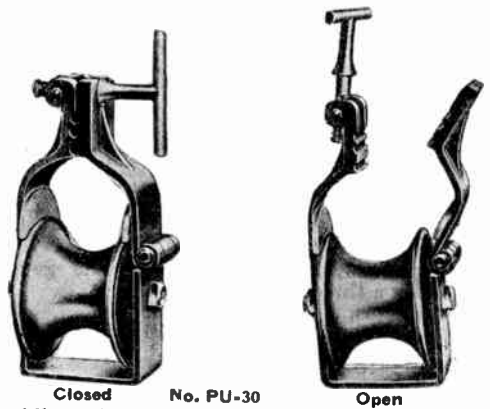


PU-37

Consists of one 3-inch single roller bushed galvanized hollow steel block, 2 snap hooks, ring and rope.

- Blocks Only without Rope..... each \$3.20
- Complete with 60 Feet of  $\frac{3}{8}$ -Inch Manila Rope..... each 5.00
- Complete with 75 Feet of  $\frac{3}{8}$ -Inch Manila Rope..... each 5.45
- Complete with 60 Feet of  $\frac{1}{2}$ -Inch Manila Rope..... each 6.00
- Complete with 75 Feet of  $\frac{1}{2}$ -Inch Manila Rope..... each 6.65

### B & L Star Brand Single Sheave Cable Blocks



Closed

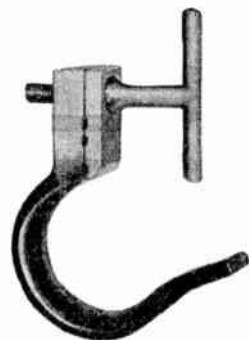
No. PU-30

Open

For guiding winch lines in conjunction with aerial cable guides.

Standard for 2 $\frac{5}{8}$ -inch diameter cable. Other sizes made up for larger diameter cable.  
Each, Weight 11 Pounds..... \$6.45

### B & L Star Brand Booster Hooks



No. PU-31

For relieving load on rings when pulling long spans.  
Each, Weight 3 Pounds..... \$2.15

### B & L Star Brand C Hooks



No. PU-28

Steel forging for connecting load to winch line.  
Each, Weight 2 $\frac{1}{2}$  Pounds..... \$2.00

**No. 102-1 Klein's Splicing Clamps**



This clamp is arranged with five round holes for bare wire. For copper wire Nos. 8, 10, 12, 14, 16, A.W.G. For iron wire Nos. 10, 12, 14, 16, 18, B. W. G. Length 8 inches. Price, No. 102-1.....each \$5.20

**No. 102-3 Klein's Splicing Clamps**



Large hole can be used for guy wire or messenger strand. Copper wire Nos. 2, 4, 6, 8, 10 and 12 A. W. G. Iron wire Nos. 4, 6, 8, 10 and 12 B. W. G. No. 102-3, 10 3/4-Inch. Wt. per Doz., 15 lbs.....each \$6.70

**No. 102-30 Klein's Splicing Clamps**



Holes reversed for those who prefer this arrangement. Copper wire Nos. 2, 4, 6, 8, 10, 12 A. W. G. Iron wire Nos. 4, 6, 8, 10, 12, 14 B. W. G. No. 102-30, 10 3/4-Inch. Wt., per Doz., 15 lbs.....each \$6.70

**No. 102-48 Klein's Splicing Clamps**



Largest hole convenient to bring together guy strand before applying a three bolt clamp. Copper wire Nos. 0, 2, 4, 6, 8 A. W. G. No. 102-48, 10 3/4-Inch. Wt., per Doz., 15 lbs.....each \$6.70

**No. 105-15 Klein's Splicing Clamps For Twisting Double Tube Sleeves**



For copper sleeves Nos. 8, 10, 12, 14, 17, A.W.G. For iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G. Price, No. 105-15, Size 8-inch.....each \$5.50

**No. 105-17 Klein's Splicing Clamps**



Has five sets of chamber for twisting double tube sleeves. For copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G. For iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G. Price, No. 105-17, Size 10 3/4-inch.....each \$6.70

**No. 105-31 Klein's Splicing Clamps**



Three double chambers for twisting Nos. 10 and 12 A. W. G. sleeves, Nos. 12, 14, and 17 N. B. S. sleeves. No. 105-31, 8 1/2-Inch. Wt. per Doz., 10 lbs.....each \$5.50

**No. 107-34 Klein's Di-Stock Sleeve Twister**



A hand operated cam lever closes the head securely on the sleeve--no thumb screws to bother with. Tubular handles are furnished. No. 107-34, weight each, 9 Lbs.....each \$40.00

**No. 132-12 Klein's Combination Wire and Sleeve Clamps**



For telephone and telegraph general line and trouble work. This clamp has four round holes for twisting bare wire. Copper wire Nos. 6, 8, 10, 12, A.W.G. Iron wire Nos. 8, 10, 12, 14, B. W. G. The reverse side has four double chambers for twisting sleeves.

Copper sleeves Nos. 8, 10, 12, 14, 17, A.W.G. Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G. Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handle. Weight per dozen, 10 pounds. Price, No. 132-12, Size, 9 inches.....each \$7.00

**No. 132-47 Klein's Wire and Sleeve Clamps**



For single tube or oval copper sleeves. Nos. 2, 4, 6, 8, and 104. Hinge has stop to prevent handles from opening beyond point convenient for clamping on sleeve. No. 132-47, Weight per Doz., 17 Lbs.....each \$11.00

**No. 132-15 Klein's Combination Wire and Sleeve Clamps**



The unusual range of wire and sleeve sizes covered by this clamp makes it practically a universal tool for telegraph, telephone and power line work. Has 5 round holes for twisting bare wire and an oval opening for guy wire or messenger strand. Copper wire Nos. 4, 6, 8, 10, 12, A.W.G. Iron wire Nos. 6, 8, 10, 12, 14, B. W. G. Strand opening .437x.624.

Reverse side has 5 chambers for twisting double tube sleeves. Copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G. Iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G. Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handles. Weight, per dozen, 16 pounds. Price No. 132-15, Size 11 1/4 inches.....each \$9.50

**No. 132-46 Klein's Wire and Sleeve Clamps**



One side for double tube copper sleeves Nos. 4, 6, 8, 10, and 12 A. W. G. Other side for copper wire Nos. 4, 6, 8, 10, and 12 A. W. G. No. 132-46, Weight per Doz., 15 1/2 Lbs.....each \$9.50

**No. 107 Klein's Di-Stock Sleeve Twisters**



This tool has ample leverage for use on heavy wires beyond the capacity of standard splicing clamps or connectors. The illustration above shows the Di-Stock fitted for making double tube joints.

Forged from high grade crucible steel. Has swing latch provided with thumb nut to fit over reverse jaw to hold both jaws securely in place. Open to Receive Wire

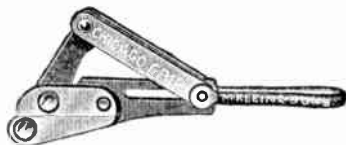


Special prices on any combination upon application. Specify sizes of sleeve tool is intended for. Tools are made to order only. Weight, 4 pounds. Price, No. 107-2, for Sleeves.....each \$26.00

## Klein's Chicago Grips

Main body piece and lever are forged steel. Draw parts are wrought steel. Gripping jaws are machined.

### No. 1613 With Plain Jaw for Bare Wire



No.	Each	Description	Max. Open. In.	Wt. Lbs. Each
1613-30	\$4.00	For No. 6 Wire and Smaller	2187	1 1/2
1613-30B	6.00	With Bronze Lined Jaws	1875	1 1/2
1613-40	8.00	For No. 0 Wire and Smaller	3125	2 5/8
1613-40A	8.00	For No. 0 Strand and Smaller	375	2 5/8
1613-40B	12.00	With Bronze Lined Jaws	3125	2 3/4
1613-50	13.50	For No. 0000 Wire and Smaller	50	7 1/2
1613-50A	13.50	For No. 0000 Strand and Smaller	625	7 1/2
1613-50B	20.00	With Bronze Lined Jaws	50	7 1/2

### No. 1611 For Insulated Wire



1611-20	\$7.50	For No. 4 Wire and Smaller	50	2 1/4
1611-20B	13.00	With Bronze Lined Jaws	50	2 1/2
1611-30	9.50	For No. 00 Wire and Smaller	5625	3 3/4
1611-40	15.00	For No. 0000 Wire and Smaller	75	7 1/4
1611-50	15.00	For No. 0000 Triple Insulated	9375	7 1/4

## No. 1626 Klein's Chicago Grips

For Aluminum Cable Steel Reinforced



Both gripping jaws are smooth.

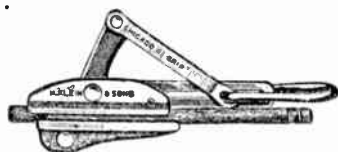
Safe load up to 3,750 pounds.

Weight, 7 3/4 pounds.

No.	Each	For Cable	Max. Open. In.
1626-39	\$20.00	1/0 to 300,000 C.M.	75
1626-39B	27.00	With bronze lined jaws	75
1626-40	20.00	1/0 to 500,000 C.M.	9688
1626-40B	27.00	With bronze lined jaws	9375

## No. 1628-30B Klein's Chicago Grips

For Hollow Core and Other Large Diameter Conductors



In stock at factory in blank and finished to fit any diameter conductor up to 1 1/2 inch. Jaws are lipped out to avoid excess weight.

Forged from alloy steel, heat treated for maximum strength. Jaws are bronze lined.

Maximum safe load, 20,000 pounds.

Weight, 23 1/2 pounds.

No. 1628-30B.....each \$123.00

## No. 1628 Klein's Chicago Grips

For Messenger Strand and Heavy Cables



Forged from alloy steel heat treated. Gripping jaws are machined smooth. Rivets are machine turned.

No.	Each	For Strand	Safe Load	Max. Open. In.	Wt. Lbs. Each
1628-5	\$14.00	2,200 to 10,000 Lbs.	6,000	7 1/16	5
1628-5B	27.00	With bronze lined jaws	6,000	375	5
1628-6	22.40	2,200 to 6,000 Lbs.	8,000	1 3/32	8 1/2
1628-6B	34.00	With bronze lined jaws	8,000	.50	8 1/2
1628-16	44.70	10,000 to 16,000 Lbs.	15,000	1 1/16	14
1628-16B	60.00	With bronze lined jaws	15,000	.625	14

## Klein's Chicago Grips With Bronze Lined Jaws

Construction engineers are demanding grips that will not slip under heavy loads and which will not damage the conductor or strand. These requirements are met by welding a lining of bronze into the jaws of standard Chicago Grips, indicated by "B" following catalog number.

In order to make standard grips available for conductors of larger diameters they can be further modified by plating the lower jaws to required additional width and fitting an upper jaw of corresponding width, but in one piece, indicated by "BP" following catalog number.

Whether for copper, copper-weld, aluminum or aluminum cable steel reinforced (ACSR) or steel strand these grips will answer the problem.

Ascertain the maximum tension anticipated and the overall diameter of the conductor or strand to be used and consult the table below. All orders must state maximum tension load and overall diameter of conductor or strand.

These tools are made to order only. Parts are held in blank at factory and shipment can usually be made in from 14 to 21 days.

No.	Each	Max. Diam. Conductor	Max. Safe Load, Lbs.	Wt. Lbs. Each
1613-30B	\$6.00	1875	1,500	1 1/2
1613-40B	12.00	3125	2,250	2 3/4
1613-50B	20.00	50	1,000	7 1/2
1611-20B	13.00	50	2,200	2 1/2
1626-39B	27.00	75	3,750	7 3/4
1626-40B	27.00	9375	3,750	7 3/4
*1626AB	34.00	8125	6,000	7 3/4
*1628-5B	27.00	375	6,000	5
*1628-6B	34.00	50	8,000	8 1/2
†*1628-6BP	47.30	75	8,000	9 1/2
*1628-16B	60.00	625	15,000	14
†*1628-16BP	73.30	1 1/2	15,000	15
*1628-30B	123.00	1 5/8	20,000	23 1/2

\*Forged from tough alloy steel, all parts heat treated so as to get maximum strength without excess weight.

†These grips are also plated to accommodate the larger diameter cables.

## No. 1700-30 Klein's Chicago Linemen's Tools



Set is combination of Chicago Grip No. 1613-30 with Howes Wire Tool No. 1702-20.

For No. 6 wire and smaller down to No. 13. No. 1700-30, Weight, 4 lbs.....each \$14.10



**Haven's Steel Grips**



Almost automatic in action. Handle and eccentric allow instantaneous hold. A shake of the rope on the tackle disengages the grip.

Price, No. 1604-10, for No. 8 Wire and Finer... each \$4.00  
 Price, No. 1604-20, for 1/2-inch Wire and Finer... each 6.00

**Improved Haven's Grips**

For plain or stranded wire No. 6 to 3/4-inch diameter. Made with swing latch which engages stud on lower jaw.



No. 1625-20..... each \$14.00

**No. 1802-30 Klein's Self-locking Troublemens' Blocks**



Especially for use with Klein's Wire Grips. No. 1802-30 is furnished with 25 feet 3/8-inch Manila rope, 2 1/2 pounds. Consists of light steel shell blocks galvanized, fitted with snubbing hook to lock load in any position. To lock load, pull luff rope under hook. To release, simply pull rope. Blocks are arranged with spring guard snap hooks. When pulling up wire to make a splice, it may be used with two grips attached to snaps or with hook to anchor to an insulator-pin or other convenient anchorage.

Cat. No.	Description	Wt. Lbs. per Set	Price per Set
1802-30	Galv., with 25 Ft. 3/8-inch Rope.....	2 1/2	\$7.20

**No. 1702-20 Klein's Howes Wire Tools**



The strap is harness leather 1 1/4 inches wide and 7 feet long. At one end a forged steel swivel hook is provided with opening to permit anchoring round insulator pin. The forward end has a locking device to hold the load at any distance and is so arranged that a wire grip can be readily attached.

The metal parts are galvanized.

Weight per set, 2 pounds.

Price, No. 1702-20, Single Purchase . . . . . per set \$10.00

**Chance Capstan Pulley Blocks and Detachable Capstans**



**Capstan Pulley Blocks**

Chance Capstan Pulley Blocks have aluminum sheaves and capstan for lightness.

No.	2	4	22	44
Each.....	\$27.00	40.00	37.00	55.00
Capacity..... pounds	2000	4000	3000	5000
Size of rope..... inches	1/2	5/8	1 1/2	5/8
Weight..... pounds	15	25 1/4	19 1/4	31 1/4

**Detachable Capstans**

No.	3	5
Each.....	\$17.00	28.00
Capacity..... pounds	2000	4000
Weight..... pounds	5	5

**No. 1802 Klein's Heavy Block Tackles**

**Drop Forged Hooks and Eye**



Consist of two special double sheave blocks.

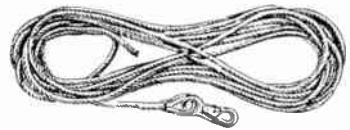
Spring guarded snap hooks do away with taping.

Pulleys are bronze bushed and self lubricating.

Furnished with best quality Manila rope, 4 strand.

No. 1802-40, 30 Ft. of 1/2 In. Rope.....	each	\$18.50
No. 1802-50, 30 Ft. of 5/8 In. Rope.....	each	20.50
No. 1802-60, 30 Ft. of 3/4 In. Rope.....	each	21.50

**No. 1803 Klein's Hand Lines**



Rope is best quality Manila and does not twist. Spliced to eye of snap hook with galvanized steel thimble.

Snap hook is drop forged and similar to those used on safety straps except that it has round eye.

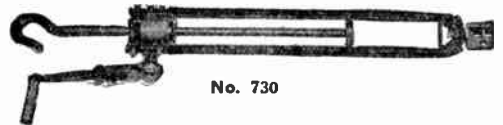
No. 1803-60, 75 Ft. of 3/8 In. Rope.....	each	\$8.50
No. 1803-120, 120 Ft. of 3/8 In. Rope.....	each	11.20

**Klein's Snap for Hand Lines**

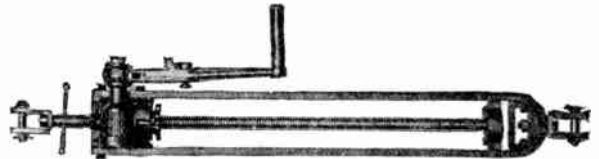
Is used on hand lines, 1803 series.

No. 443A, Forged Snap, Eye 1 1/8 In. I. D.....	each	\$2.50
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**Matthews Quick Release Slack Pullers**



No. 730



No. 732

Enables one man to do the work of four when taking the slack out of guy strand, messenger wire or changing strain insulators, or for splicing trolley wire, telephone or power cable under tension; also used for pulling back underground cable. Takes the place of block and tackle. One man can easily pull 3000 pounds with the No. 730, 6000 pounds with the Nos. 731 or 732, and 10000 pounds with the Nos. 7100 or 7110. No slack is lost in dead ending as strain is held to the exact point pulled.

With the new quick release feature, when the entire take-up has been used, the wire is temporarily dead ended and the lock released. This permits the slack puller to be immediately extended to its maximum or any intervening length.

No.	Description	Ship. Wt. Lbs.	Price Each
730	Maximum Take-Up, 19 Inches.....	17	\$50.00
731	Same as No. 730, Except That Clevis is Substituted for Hook.....	17	54.00
732	Same as No. 731, Except That it Also Has Quick Take-Up Feature.....	17	58.00
7100	Maximum Take-Up, 27 Inches.....	45	95.00
7110	Same as No. 7100, Except That it Also Has Quick Take-Up Feature.....	45	112.00

The 730, 731 and 7100 do not have the quick take-up feature.

## No. 201 Klein's Side Cutting Pliers



Diamond Special for use on bare and insulated wire.

Cat. No.	201-5	201-6	201-7	201-8	201-9
Size	5 inches	6	7	8	9
Price	\$4.20	4.50	5.30	5.80	7.10

## No. 242-6 Klein's Oblique Cutting Pliers

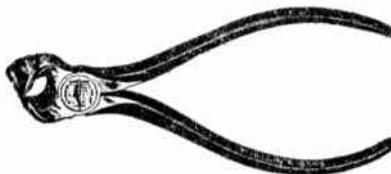


Heavy pattern.

For use where it is not necessary to reach into confined spaces.

No. 242-6, 6 Inch, Weight per Doz., 4 1/4 Lbs. each \$4.10

## No. 232 Klein's End Cutting Pliers



Stout jaws and broad cutting knives.

No.	Each
232-5 1/2	\$6.00
232-7	6.70

## No. 212 Klein's Side Cutting Pliers

With Sleeve Joint Twisters

Diamond Special for use on bare and insulated wire, with sleeve joint twister.



Cat. No.	212-6	212-7	212-8
Size	6 inches	7	8
Price	\$5.30	6.00	7.10

## No. 201 Klein's Side Cutting Pliers



Nose and all edges rounded and shoulder of head removed.

No.	201-6NE	201-7NE	201-8NE	201-9NE
Each	\$4.50	\$5.30	\$5.80	\$7.10
Wt. Lbs. per Doz.	5	7 1/2	12	12 1/2

## No. 202 Klein's Oblique Cutting Pliers

Cuts close, the narrow head permitting its use in confined places.

Knives are perfectly fitted. Lap joint type.

No. 202-5, Length, 5 Inches	each \$3.60
No. 202-6, Length, 6 Inches	each 4.00



## No. 245 Klein's Oblique Cutting Pliers



Can easily be carried in vest pocket.

For electricians, telephone men and switchboard builders.

No. 245-5, 5-Inch, Weight per Doz., 4 Lbs. each \$3.60

## No. 202 Klein's Narrow Nosed Oblique Pliers



This plier has narrow hinge and pointed nose. For telephone and radio work.

No. 202-5A, 5-Inch, Weight per Doz., 4 Lbs.	each \$3.60
No. 202-6A, 6-Inch, Weight per Doz., 4 1/4 Lbs.	each 4.00

## No. 240 Klein's Oblique Cutting Pliers

With Wire Stripping Notch



Has notch for stripping small wires placed 3/16 inch from hinge and has diameter of .052 inch.

No. 240-5, 5-Inch, Weight per Doz., 4 Lbs.	each \$4.00
No. 240-6, 6-Inch, Weight per Doz., 4 1/4 Lbs.	each 4.60

## No. 235-6 Klein's Diagonal Cutting Pliers



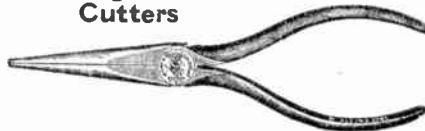
Has long cutting knives. Head is narrow to permit use in confined spaces.

Has polished head, handles tempered blue.

No. 235-6, 6 Inch, Weight per Doz., 4 1/2 Lbs. each \$6.00

## No. 301 Klein's Long Nose Pliers, without Cutters

Adapted for stripping the ends of insulated wire, and for work in confined spaces.



Price, No. 301-5, Length, 5 Inches	each \$3.20
" " 301-6 " 6 " "	3.50

## No. 203 Klein's Long Nose Side Cutting Pliers



Designed for work in restricted spaces.

Equipped with cutting knives.

Price, No. 203-5, Length 5 Inches	each \$3.80
" " 203-6 " 6 " "	4.20

## No. 203-8 Klein's Long Nose Cutting Pliers



Made for use with heavier gauge insulated wire.

The round nose is for forming loops and a flat space is provided ahead of the knife for holding objects securely or for cracking insulation.

No. 203-8, Weight per Doz., 8 Lbs. each \$5.80

## No. 203-8N Klein's Long Nose Cutting Pliers



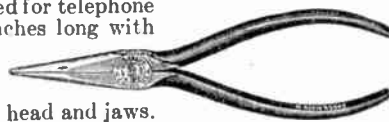
This plier is same as 203-8 but is fitted with stripping notch in knife. Notch is

regularly furnished to take No. 12 A. W. G. insulated wire but can be varied for other sizes to order.

No. 203-8N, Weight per Doz., 8 Lbs. each \$6.00

## No. 316 Klein's Long Nose Pliers

Particularly adapted for telephone work. Jaws are 2 inches long with 1/16 - inch point. Handles are 4 inches long, tempered blue. Polished head and jaws.

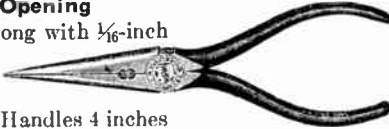


Size, 6 inches. Price, No. 316-6 Weight per Dozen, 2 3/4 Pounds. each \$3.50

**No. 316-S Klein's Long Nose Pliers**

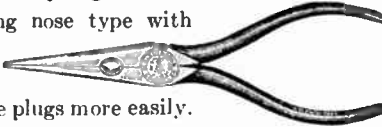
**With Sleeve Opening**

Jaws are 2 inches long with  $\frac{1}{16}$ -inch point. Has openings for No. 17 B.&S. double tube copper sleeves. Handles 4 inches long, tempered blue; polished head and jaws. Price, No. 316-S, Size 6 Inches.....each \$4.00



**No. 301-C Klein's Long Nose Cord Crimping Pliers**

This plier is a long nose type with special opening for crimping switch-board cords to make them fit into the plugs more easily. Size, 6 inches. Price, No. 301-C, Weight per Dozen,  $2\frac{3}{4}$  Pounds... each \$4.00



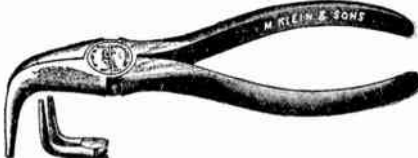
**No. 303-6 Klein's Long Needle Nose Pliers**

Long nose permits use in confined spaces. Has polished head and handles temper blue. Weight per dozen, 3 pounds. Price, No. 303-6, Length 6 Inches.....each \$3.50



**No. 302 Klein's Long Curved Nose Pliers**

Angle is arranged to give full clearance and prevent skinning of knuckles. Price, No. 302-6, Length, 6 inches.....each \$4.50



**No. 305-6 Klein's Long Flat Nose Pliers**

Has long wide flat nose. Inside of jaws left smooth if desired. Has polished head and handles temper blue. Weight per dozen,  $3\frac{1}{2}$  pounds. Price, No. 305-6, Length 6 Inches.....each \$3.80



**No. 206-6 Klein's Long Flat Nose Side Cutting Pliers**

Has long wide flat nose and cutting knives. Smooth jaws if desired. Has polished head and handles temper blue. Weight per dozen,  $3\frac{1}{2}$  pounds. Price, No. 206-6, Length 6 Inches.....each \$4.00



**Klein's Long Flat Nose Spring Adjusting Pliers**

Hollow ground on outside of jaws to reach between and grasp springs easily. Price, No. 311- $5\frac{1}{2}$ ,  $5\frac{1}{2}$  Inch, Weight per Doz.,  $3\frac{1}{4}$  Lbs. each \$3.80



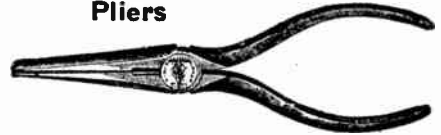
**No. 304-6 Klein's Long Duck Bill Pliers**

For general use. Jaws are wider and heavier than those of flat nose pliers. Has polished head and handles temper blue. Weight per dozen,  $3\frac{3}{4}$  pounds. Price, No. 304-6, Length, 6 Inches.....each \$3.80



**No. 205-6 Long Duck Bill Side Cutting Pliers**

General use. Jaws are wider and heavier than those of flat nose plier. Has polished head and handles temper blue. Weight per dozen, 3 pounds. Price, No. 205-6, Length, 6 Inches.....each \$4.20



**No. 406-6 $\frac{1}{2}$  Klein's Slip Joint Pliers**

This plier embodies all the advantages offered by a tool of this type. Has a wire cutter and a screwdriver handle. Has polished head and handles temper blue. Weight per dozen, 7 pounds. Price, No. 406-6 $\frac{1}{2}$ , Length, 6 $\frac{1}{2}$  Inches.....each \$2.00



**No. 407-7 Klein's Utility Slip Joint Pliers**

Heavy duty type. Adaptable as pipe wrench or wire cutter. Has sure grip jaws for irregular shapes. Polished head and handles temper blue. Weight per dozen, 7 $\frac{1}{2}$  pounds. Price, No. 407-7, Length, 7 Inches.....each \$2.50



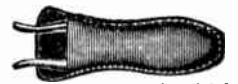
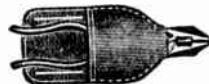
**No. 408-8 Klein's Bent Nose Slip Joint Pliers**

For use in difficult places. An excellent general purpose tool. Has polished head and handles temper blue. No. 408-8, 8 Inch, Weight per Doz., 8 Lbs.....each \$3.00



**Nos. 5107 and 5112 Leather Plier Pockets**

Made of good quality leather. Has slits through which belt is inserted. No. 5112 is the same as No. 5107 except that plier does not protrude. Price, No. 5107, Weight per Dozen, 2 $\frac{1}{2}$  Pounds...each \$1.30  
" " 5112 " " 2 $\frac{1}{2}$  " " " 1.40



**No. 5116 Klein's Detachable Plier Holsters**

Made of heavy harness leather with loop to slip over belt.

Carries 7, 8 or 9-inch side cutting pliers.

Mouth of pocket is framed to hold open position permanently.

Length, 10 inches.

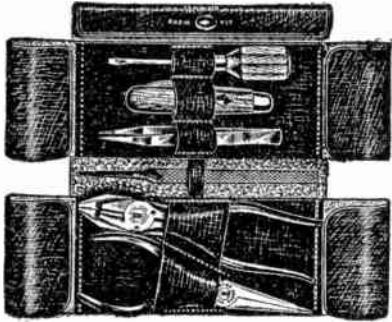
Weight per dozen, 6 pounds.

Price, No. 5116.....each \$3.00





## No. 1305-2 Klein's Inspectors' Tool Kits

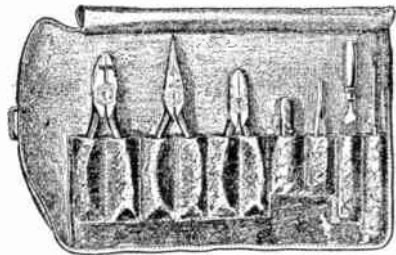


Solid black leather folding case strongly stitched, reinforced back. Fitted with one each of the following tools: No. 201-6 side-cutting plier; No. 301-5 long nose plier; No. 1550-2 Xela electricians' knife; 1 pair electricians' tweezers; 1 special file; 1 special screwdriver.

A handy assortment to fit the pocket. Weight, 1½ pounds.

Price, No. 1305-2.....each \$15.00

## Klein Tool-Kits



Designed for mechanics, service men and electricians.

Contains long nose plier, special side cutting plier, diagonal cutting plier, electrician's knife, a pair of electrician's tempered tweezers,

¼-inch file and a screw driver with insulated handle. All contained in a Keratol roll fastened with a strong strap and buckle.

No. 1305-3A.....each \$15.30

## Klein's Rubber Glove Pouches



Scotch chrome leather pocket for carrying rubber gloves. Comes equipped with snap and Dee ring, ready to attach to body belt.

No. ....	5120-9	5120-15
Each .....	\$4.00	\$5.00
Size, In. ....	7½x9	7½x15
Weight per Doz. ....	4½	6½

## No. 5111 Klein's Hip Pocket Tool Cases



This case is suitable for carrying pliers or other tools in hip pocket.

Prevents cutting of clothes, or possible injury to the person.

Made of black leather. Weight per dozen, 2½ pounds.

Price, No. 5111. Size, 5x7 Inches....each \$2.00

## Neatsfoot Oil

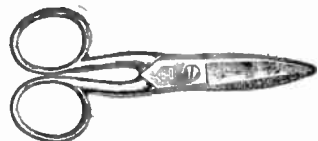


Keeps leather soft and pliable. Prolongs its life.

Supplied in cans with full directions for use.

Pint Can.....	each \$ .75
Quart Can.....	each 1.25
Half Gallon Can.....	each 2.25

## Xela Electrician's Scissors



Made of high grade steel properly tempered.

Has screw hinge.

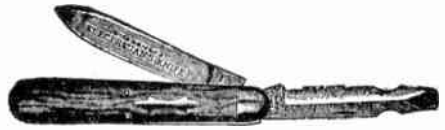
Nickel plated finish.

Size, 5 in.

Weight per dozen, 2 pounds.

No. 2100-5.....each \$1.70

## Electricians' Knives

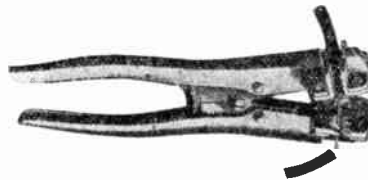


A handy combination for the electrician, combining an emergency screwdriver, a knife blade for cutting or stripping wire; safely locked so that it cannot close during use. The commendable features are a well-tempered blade, a strong joint, a solid well-proportioned hand fitting handle and a lock to keep the blade safely open, yet promptly releasable when it is desired to close the blades.

Screwdriver blade is locked when open; to unlock, press down on large blade.

Price, No. 1550-2, Double Blade.....each \$2.70

## Ideal E-Z Wire Strippers



Requires no cocking or setting.

Triplicate action of clamping wire, cutting insulation and stripping is automatically timed and performed with one squeeze of the handles. When pressure

is released, handles open, resetting stripper for next snip. Cutting edges are shielded and blind centers of blades prevent cutting or scarring of the wire.

No. ....	For Stripping Solid or Stranded Wires	Each
1 Nos. 22, 20, 18, 16, 15, 14 and 12.....		\$5.00
2 Nos. 18, 16, 15, 14, 12 and 10.....		5.00
3 Nos. 8 to 5 (Provided Insulation Does Not Exceed ⅜-Inch Diameter).....		5.00

## No. 1515-1 Klein's Cable Sheath Splitting Knives



Extra heavy.

Knife edge is tempered and ground to a keen edge. Handle is made of leather. Weight per dozen, 12 pounds.

Price, No. 1515-1.....each \$5.50

## Klein's Skinning Knife for Linemen



Shape of blade has been carefully considered to make it a real safety tool.

Half hard rubber handle is molded on securely and provides adequate insulation and a positive grip.

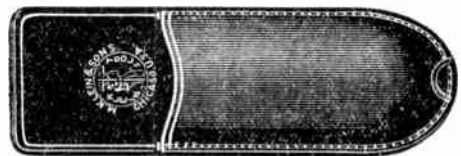
Hole in handle is through the solid rubber.

Blade, 3 inches long, 8 inches long overall.

Weight.....pounds 4¼  
No. 1560-3.....each \$3.00

## Skinning Knife Sheath

For No. 1560-3 Knife



Can be riveted to belt or carried in hip pocket. Opening at bottom to prevent collection of dirt and permit escape of water.

Weight per dozen, 2½ pounds Size, 3x9 inches  
No. 5163.....each \$1.60

**No. 3109-20 Klein's Combination Steel Lag Screw Wrenches**



This wrench is forged from select bar steel. The slot is formed in a cross shape and will fit machine bolts, nuts or lag screws from 3/8 inch to 1/2 inch. The small end of the wrench is arranged for 3/8-inch machine bolts or lag screws. The round hole allows the end of a bolt to come through as the nut is run on.

The jaw is wider at its upper portion and when this wrench is put on a nut or bolt the tendency is to draw the bolthead or nut into the wrench and prevent slipping off. Weight, per dozen, 20 pounds.

Price, Nos. 3109-20, Length, 13 1/2 Inches . . . . . each \$5.00

**Klein's Lineman's Wrenches**

**Bell System Type**



This wrench is forged from selected bar steel and is of the open end type with 2 openings of different size at each end. A hole is also provided for turning in pole steps, etc.

Weight per dozen, 21 pounds.

Price, No. 3146, for 5/8-Inch Hardware . . . . . each \$5.00  
Price, No. 3146-A, for 3/4-Inch Hardware . . . . . each 5.00

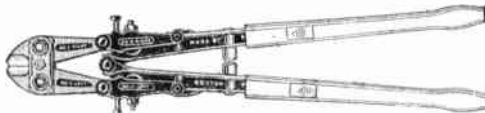
**Porter New Easy Bolt Clippers**



Has japanned malleable iron handles, rubber buffers, and tempered tool steel jaws. The jaws can be dressed when necessary with a mill file. Furnished with clipper cut or center cut jaws.

No. . . . .	0-NE	1-NE	2-NE	3-NE
Bolt Clipper . . . . . each	\$4.00	\$5.00	\$7.00	\$9.00
Extra Jaws . . . . . per pair	2.00	2.45	3.50	4.45
Approximate Length . . . . . in.	18	24	30	36
For Annealed Bolts in Thread . . . in.	5/16	3/8	1/2	5/8
For Soft Rods . . . . . in.	1/4	5/16	3/8	1/2
For Spring Wire with Special Tem- per Jaws Only . . . . . in.	.203	.238	.284	.340
Approximate Weight . . . . . lbs.	3 1/4	5 1/4	8 1/2	12 1/2

**Porter Electric Wire Cutters  
With Insulated Handles**



Jaws open to accommodate wire and cable insulation; beveled mostly on one side. In using them on bolts or rods, cutting capacity is limited to opening at heel of jaws, not at point. The wider opening does not give them greater power capacity. Will not cut hardened material.

No.	Each	Extra Jaws per Pair	Length Tool Inches	Average Opening Jaws Inches	To Cut, INCHES Annealed Bolts in Thread	Soft Rods	Net Weight Pounds
0-WC	\$6.50	\$2.00	18	1/8	5/16	1/4	3 1/2
1-WC	8.25	2.75	24	3/8	3/8	5/16	5 1/2
2-WC	11.00	3.30	30	1 1/8	1/2	3/8	9
3-WC	14.00	5.00	36	1 1/4	5/8	1/2	13 1/4

**Klein's Linemen's Pole Climbers**

**Also Called Spurs or Hooks**

Safety is the first and vital point in considering linemen's pole climbers. The lineman going up a pole depends entirely upon his spurs.

To assure utmost dependability Klein Climbers are forged from special steels and are individually tempered. Shanks and gaffs are tested to insure perfect riveting and temper.

**Klein's Eastern Climbers**



When ordering specify length of shank desired. Measure from instep to extreme end. Other than stock sizes to order. Tested before leaving factory.

**No. 1901**

Stock sizes, 15, 15 1/2, 16, 16 1/2, 17, 17 1/2 and 18 inches. Has punched strap loops. Packed 1 pair in a carton. No. 1901, Wt. 3 5/8 Lbs. . . . . per pair \$8.20

**No. 1900**

Same and same sizes as No. 1901 but has riveted strap loops. Packed 1 pair in a carton. No. 1900, Wt. 3 5/8 Lbs. . . . . per pair \$8.20

**No. 1903**

Light weight pattern with riveted strap loops. Packed 1 pair in a carton. No. 1903, Wt. 2 7/8 Lbs. . . . . per pair \$8.20

**No. 1907**



This is the standard tree climber used by forest rangers, top loggers, fire wardens, surveyors, etc. Made in all standard sizes.

Has punched strap loop. Gaffs, or spurs, are 5 1/2 inches long measured on the outside and 3 inches long measured on the underside. They are set high in the leg iron so that points clear the ground.

Packed 1 pair in a carton. No. 1907 . . . . . per pair \$9.00

**Klein's Climber Straps and Pads**



Set consists of 2 calf straps 1 1/4 x 22 in. with 4x4 in. pads and 2 ankle straps 1 1/4 x 22 in. Leather is first quality harness leather. Buckles drop forged, fitted with roller.

Cat. No.	Per Set	Description	Wt. Lbs. per Doz. Sets
5301-1	\$6.90	Plain Pads . . . . .	15
5301-2	7.40	Sheep-lined Pads . . . . .	16
5301-3	7.40	Felt-lined Pads . . . . .	16

**Straps, Only**

Cat. No.	Per Set	Description	Doz. Pr.
5301-4	\$2.90	Plain Straps, 2 Straps . . . . .	6
5301-5	4.10	Plain Straps, Plain Pads, 2 Each . . . . .	9

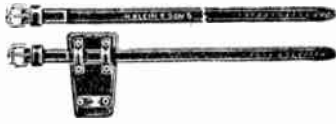
Extra length straps can be made to order at slightly higher prices.

**Pads, Only**

Cat. No.	Per Set	Description	Doz. Pr.
8200	\$1.70	Sheep-lined, 4x4 In . . . . .	3
8201	1.70	Felt-lined, 4x4 In . . . . .	3
8202	1.30	Plain Leather, 4x4 In . . . . .	3

Pads made of select leather, arranged with loops through which to slip climber strap.

## Klein's Climber Straps and Pads Bell System Type



Set consists of 2 calf straps 1x22 in. with 2 special pads and 2 ankle straps 1x26 in.

Cat. No.	Per Set	Description	Wt. Lbs. per Doz. Sets
5301-6	\$7.90	With Plain Pads.....	14
5301-7	8.30	With Sheep-lined Pads.....	15
5301-8	8.30	With Felt-lined Pads.....	15

### Straps, Only

Cat. No.	Per Set	Description	Doz. Pr.
5301-9	\$2.80	Calf Straps, 1x22 in., 2 Straps.....	5
5301-10	3.10	Ankle Straps, 1x26 in., 2 Straps.....	6

### Pads, Only

Cat. No.	Per Set	Description	Doz. Pr.
8203	\$1.90	Plain Leather.....	4
8204	2.30	Sheep-lined Leather.....	5
8205	2.30	Felt-lined Leather.....	5

Pads made of select leather, arranged with loops for climber straps and climber. Tapering 3/4 inch to 2 3/4 x 6 1/4 inch deep.

## No. 5108 Klein's Inspectors' Harness Leather Tool Bags

This bag is made of harness leather and will stand rough usage. It has a shoulder strap combined with a pad and hand strap; also a saw and bit holder. The bottom is three ply and is studded with steel studs. Retaining straps pass around the bag.



Seams are sewed with hot waxed linen thread, lockstitched.

Cat. No.	Size In.	Wt. Lbs.	Price Each
5108-18	18x8	4 1/2	\$17.00
5108-20	20x8	5 1/2	17.50

## Linemen's Canvas Tool Bags, Leather Bottoms

Made of one piece white duck reinforced all around bottom with heavy bag leather, 3 1/4 inches up on 5102 series, 8 inches up on 5105 series.

Bottom is made of heavy leather outside and duck inside, lock stitched all around. Bottom is protected with strong steel studs.

Bottoms and sides joined together with lock stitched leather welt seams.

Mouth of bag is formed by a 12-gauge steel frame.

Canvas is clinched between this frame and an inside secondary steel frame.

Has harness leather handles and two retaining straps with buckles.



No. 5102



No. 5105

No.	Each	Size In.	Wt. Lbs. Each	No.	Each	Size In.	Wt. Lbs. Each
5102-18	\$10.50	18	3 3/4	5105-18	\$11.00	18	4 1/2
5102-20	11.50	20	3 7/8	5105-20	12.00	20	4 3/4

Other sizes on order.

## Klein's Tool Belts

All Klein Belts are made of first quality vegetable tanned harness leather. Sewing is with genuine linen thread, hot waxed, lock stitched. Rivets are solid copper, hand set with burrs. Buckles, including tongues, and Dee Rings are steel drop forgings tested to 1500 lbs.

Catalog numbers prefixed by the letter "H" indicate belts fitted with Hank's Dee Rings which must be used with Hank's Safety Straps. All other makes are fitted with Standard Double Bar Dees.

To insure proper fit select size that allows heel of Dee Rings to come about 1 inch in front of hip bones as per following table.

Distance Between Dee Rings, In.....	20	22	23	24	26	28	30
Belt Size, In.....	36	38	40	42	44	46	48

## Klein's Tool Belts

### With Standard Dees

No.	Each	Width In.	Wt. per Doz.
5204	\$10.20	3 1/2	32
5205	11.20	*2 1/4	33
5202	9.50	2 1/4	30

### With Hank's Dees

H5204	\$10.20	3 1/2	32
H5205	11.20	*2 1/4	33
H5202	9.50	2 1/4	30

### With Plier Pocket, Knife Snap and Tape Thong Attached

With Standard Dees			
5204DE	\$13.00	3 1/2	37

### With Hank's Dees

H5204DE	\$13.00	3 1/2	37
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\*Double thickness.



No. 5204 DE

## No. 5204 Klein's Texas Belts



No. H5204 TSO (With Hank's Dees)

Are lined throughout with soft latigo leather.

Made 4 inches wide at center of back for full support, tapering to 2 1/4 inches wide at hips to permit free bend to body of wearer.

No. 5204-TSO, Standard Dees, Weight, 33 Lbs. each \$15.60

No. H5204-TSO, Hank's Dees, Weight, 33 Lbs. each 15.60

## No. 5212 Klein's Derrick Belts



For oil derrickmen or structural workers.

Made to stand load of 250 pounds with a dead fall of five feet.

One three inch Forged Dee Ring at back for life line.

Double tongue buckle.

No. 5212, Weight, 42 Lbs.....each \$11.00



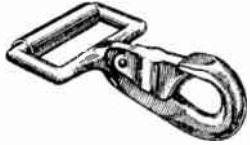
**Klein Safety Straps**

Klein Safety Straps are made in various patterns in a choice of two materials.

First quality back stock vegetable tanned harness leather. The new Klein-Kord fabric especially made for this purpose.

In all cases sewing is with genuine linen thread, hot waxed and lock stitched. Riveted by hand with solid copper rivets.

All buckles, including tongues, are drop forged, tested to 1500 pounds. There are three patterns of drop forged, tested snaps available as illustrated below.



**Standard Snaps**

Have wide nose covering spring latch protecting it from accidentally twisting out of Dee Ring, and can be used with any Dee.

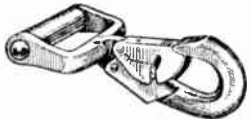
Straps listed with plain catalog numbers have Standard Snaps.



**Hank's Snaps**

Are of special construction and must be used in conjunction with Hank's Dee Rings on belt.

Straps listed with "H" prefixing catalog numbers have Hank's Snaps.



**Klein-Lok Snaps**

Have a twin latch arrangement. Both latches must be pressed simultaneously to release. Full factor of safety. Can be used with any Dee.

Straps listed with "KL" prefixing catalog numbers have Klein-Lok Snaps.

**Klein-Kord Fabric Safety Straps**



No.	Each	Size	Wt. Lbs. per Doz.
5233	\$8.00	1 3/4 in. x 5 ft. 8 in.	30
H5233	8.00	1 3/4 in. x 5 ft. 8 in.	30
KL5233	9.00	1 3/4 in. x 5 ft. 8 in.	30

**Klein's Texas Safety Straps**



Made of finest steer hide harness leather with minimum metal parts. Extra pad at buckle protects main strap from wear at this important point. Free end of wear pad is provided with heavy box loop through which the single thickness end of strap passes, permitting free adjustment of safety to length desired.

No.	Each	Size, In.	Description	Wt. Lbs. per Doz.
H5251T	\$9.70	1 3/4 in. x 5 ft. 8 in.	Hank's Snaps	30
5251T	9.70	1 3/4 in. x 5 ft. 8 in.	Standard Snaps	30
H5253T	12.40	2 in. x 5 ft. 8 in.	Hank's Snaps	39
5253T	12.40	2 in. x 5 ft. 8 in.	Standard Snaps	39

**Klein Leather Safety Straps**



No. 5251

**Leather Wear Pads**

No.	Each	Size	Wt. Lbs. per Doz.
5251	\$9.70	1 3/4 in. x 5 ft. 8 in.	30
H5251	9.70	1 3/4 in. x 5 ft. 8 in.	30
KL5251	10.70	1 3/4 in. x 5 ft. 8 in.	30

**Copper Wear Pieces**

5250	\$9.70	1 3/4 in. x 5 ft. 8 in.	30
H5250	9.70	1 3/4 in. x 5 ft. 8 in.	30
KL5250	10.70	1 3/4 in. x 5 ft. 8 in.	30
5253	12.40	2 in. x 5 ft. 8 in.	39
H5253	12.40	2 in. x 5 ft. 8 in.	39
KL5253	13.40	2 in. x 5 ft. 8 in.	39

**Bell System Type**

5257S	\$13.00	2 in. x 5 ft. 1 1/2 in.	38
5257L	13.70	2 in. x 5 ft. 10 in.	40

**N. E. L. A. Specifications**

5258	\$13.40	2 in. x 5 ft. 6 in.	39
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Any of above furnished with 15 inch Long Wear Pad to order at no extra cost.

**No. 5215 Klein's Extension Straps**



This strap is 1 3/4 inches wide, made of first quality harness leather and fitted with special forged D ring and buckle. It is worn attached to D ring on main body belt and used when large diameter poles necessitate a longer safety strap than the regular. By engaging snap of the regulation safety strap to the special D ring on the extension strap the lineman can immediately adapt his outfit so that he has no difficulty in working conveniently. No matter how large the pole—can be lengthened or shortened.

Size, 1 3/4x15 inches.

Weight per dozen, 14 pounds.

Price, No. 5215 ..... each \$4.00

**No. 5209 Klein's Safety Harnesses**



Back



Front

Meets requirements of various safety commissions for use where danger from gassing is present. Working in gassy manholes, gas tanks, oil tanks and even boilers, men are frequently overcome and an emergency arises instantly. This harness provides a sure means by which patient can be brought to safety and danger overcome. Design is such that it slings wearer in a perpendicular position so that he can be readily hauled through an ordinary manhole opening. A solid harness leather back plate 2 1/4x10 inches is stitched and riveted around the 1 1/2-inch adjustable belt strap. Back plate also carries a tested drop forged D ring to which the 3/4-inch manila life line, 25 feet in length is permanently attached. Shoulder straps are 3/4 inch and made adjustable and riveted to belt at single ends. These straps hold belt in position around chest so as not to encumber wearer while working. Weight per dozen, 30 pounds.

Price, No. 5209, with Life Line ..... each \$13.40

## No. 13 Graybar Lineman's Double Faced Hammers

Bell System Type



Drop forged oil tempered head with special short neck designed to strike a heavy accurate blow in a confined space. Length over all, 15 inches. Weight of head, 2 1/4 pounds. Weight of hammer complete, per dozen, 35 pounds. Price, No. 13.....each \$5.80

## Diamond Malleable Iron Expansion Shields

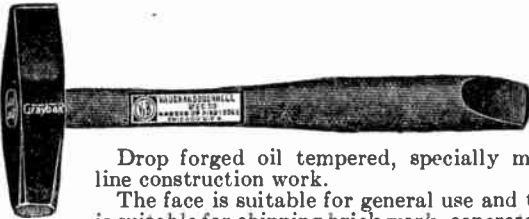


Long Standard				Short Standard			
Diam. Screw Inches	Per 100	Length Inches	Outside Diam. Inches	Diam. Screw Inches	Per 100	Length Inches	Outside Diam. Inches
1/4	\$15.00	1 1/2	1/2	5/8	\$45.00	3 1/2	7/8
5/16	18.00	1 3/4	9/16	3/4	65.00	3 1/2	1 1/8
3/8	25.00	2 1/4	5/8	7/8	95.00	5	1 3/8
7/16	32.00	2 3/4	11/16	1	110.00	5	1 1/2
1/2	38.00	3 1/2	3/4	1 1/4	250.00	6 1/2	1 7/8
Long Standard				Short Standard			
3/16	\$15.00	1	3/8	7/16	\$32.00	2	1 1/16
1/4	15.00	1	7/16	1/2	38.00	2	3/4
5/16	18.00	1	1/2	5/8	45.00	2	7/8
3/8	25.00	2	5/8	3/4	65.00	2	1 1/8

Prices do not include lag screw.

## No. 4638 Graybar Lineman's Chipping Hammers

Bell System Type



Drop forged oil tempered, specially made for line construction work. The face is suitable for general use and the pein is suitable for chipping brick work, concrete, stone, etc., or for riveting. Length over all, 16 inches. Weight of head, 3 1/2 pounds. Weight of hammer complete, per dozen, 48 pounds. Price, No. 4638.....each \$4.50

## Keystone Interlocking Expansion Shields

Prevents the nut being drawn out of the shield when heavy loads are applied. Guides the mechanic in determining when to stop tightening up the bolt. Prevents the nut being drawn past the point of maximum expansion. Locks the two sides and the nut into a unit of resistance against the load. Made of malleable iron for durability and strength.



Diam. Screw or Bolt Inches	Shields Only per 100	Length Shield Inches	O. D. and Size Drill to Use Inches	Diam. Screw or Bolt Inches	Shields Only per 100	Length Shield Inches	O. D. and Size Drill to Use Inches
1/4	\$15.00	1 1/2	1/2	3/4	\$65.00	3 1/4	1 1/8
5/16	18.00	1 3/4	9/16	7/8	95.00	4	1 1/2
3/8	25.00	2	1 1/16	1	110.00	4 1/4	1 5/8
7/16	32.00	2 1/2	7/8	1 1/4	250.00	6	2 1/8
1/2	38.00	2 1/2	7/8	1 1/2	350.00	7 1/2	2 1/2
5/8	45.00	2 7/8	1	...	.....	...	...

## No. 1 Diamond Toggle Bolts

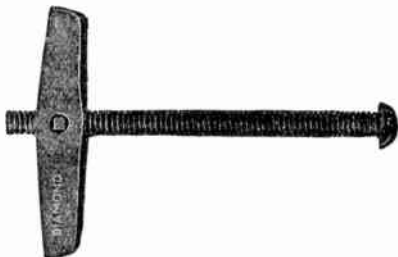


The No. 1 Diamond Toggle Bolt has the threaded bolt riveted to the toggle head.

Size Inches	Price per 100	Size Inches	Price per 100	Size Inches	Price per 100	Size Inches	Price per 100
1/8 x3	\$9.00	3/16x6	\$12.50	5/16x3	\$17.50	3/8x6	\$31.00
1/8 x4	10.00	1/4 x3	10.50	5/16x4	18.00	1/2x3	30.00
3/16x3	9.50	1/4 x4	11.75	5/16x6	20.00	1/2x4	32.00
3/16x4	10.50	1/4 x5	13.00	3/8 x3	20.00	1/2x6	36.00
3/16x5	12.00	1/4 x6	14.00	3/8 x4	24.00	.....	.....

## No. 5 Diamond Toggle Bolts

A swivel nut is provided in the toggle head which permits a stove bolt being screwed in with a finished head at the outside of the work.



It is furnished with either round or flat slotted head.

Size Inches	Price per 100	Size Inches	Price per 100	Size Inches	Price per 100	Size Inches	Price per 100
1/8x3	\$9.00	3/16x5	\$12.00	1/4x5	\$13.00	5/16x6	\$20.00
1/8x4	10.00	3/16x6	12.50	1/4x6	14.00	3/8x3	20.00
3/16x3	9.50	1/4x3	10.50	5/16x3	17.50	3/8x4	24.00
3/16x4	10.50	1/4x4	11.75	5/16x4	18.00	3/8x6	31.00

## Keystone Single Expansion Shields For Machine Bolts and Machine Screws



Diam. of Screw or Bolt Inches	Length Inches	Outside Diam. and Size Drill to Use, Inches	Price per 100
1/4	1 5/8	1/2	\$15.00
5/16	1 1/2	9/16	18.00
3/8	1 3/8	1 1/16	25.00
1/2	1 7/8	7/8	38.00
5/8	2	1	45.00
3/4	2 1/4	1 3/8	65.00
7/8	2 1/2	1 1/2	95.00
1	2 3/4	1 5/8	110.00

## Di-En-Key Expansion Bolts With Malleable Iron Expansion Shields



For use in suspension rods for mine hangers, steam and water pipes, sprinkler systems and allied lines. The smaller sizes are adapted to opera chairs and school furniture work. Prices do not include machine bolt.

Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100	Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100
1/4	1	7/16	\$15.00	1/2	2 1/2	7/8	\$38.00
5/16	1 3/4	9/16	18.00	5/8	2 1/2	1	45.00
3/8	2	1 1/16	25.00	3/4	3 3/4	1 1/4	65.00

**Diamond Multi-Size Screw Anchors**



Diamond Multi-Size Screw Anchors are designed to accommodate in one anchor several diameters of wood screws. The purpose is to reduce the number of anchors required to accommodate all sizes of screws. They are made in several lengths covering the majority of uses. For instance, the No. 10 to 14x1-inch anchor will work successfully with all sizes of wood screws ranging from No. 10 to No. 14 inclusive.

The high projecting interior ribs support and centrally locate a small No. 10 wood screw causing the shield to expand and giving ample holding capacity for that size of screw.

In this same size of anchor larger screws up to and including No. 14 may be used equally well. This is accomplished by the flexible interior ribbing.

Where the larger screw is used, the ribs are pressed down and the valleys at the exterior are forced outward to permit the greater diameter of the screw to enter the shield. The improved Multi-Size Screw Anchor has two advantages over the original Multi-Size; the screw enters the shield more easily without danger of marring the head of the screw and relieves the strain applied to the screw when inserted. It will also sustain a greater load.

Packed 100 to a box.

Designating Sizes	Per 100	For Wood Screws No.	Lgth. In.	Drill Size Inches	Weight per 100
Nos. 6 to 8x 3/4"	\$5.00	6 to 8	3/4	1/4	1
Nos. 6 to 8x1 1/2"	5.60	6 to 8	1 1/2	1/4	1 3/4
Nos. 10 to 14x 3/4"	5.60	10 to 14	3/4	5/16	1 1/2
Nos. 10 to 14x1"	5.60	10 to 14	1	5/16	2
Nos. 10 to 14x1 1/2"	8.00	10 to 14	1 1/2	5/16	2 3/4
Nos. 16 to 18x1"	6.25	16 to 18	1	3/8	3
Nos. 16 to 18x1 1/2"	9.00	16 to 18	1 1/2	3/8	4 1/4
Nos. 20 to 24x1 3/4"	10.00	20 to 24	1 3/4	7/16	5 1/4

**Diamond 1-Part Composition Shields**



DIMENSIONS, INCHES		Outside Diameter	Size Screws	Price per 100
Inside Diameter Shield	Length of Shield			
1/8	1/2	1/4	5-6-7	\$4.40
1/8	5/8	1/4	5-6-7	4.40
1/8	3/4	1/4	5-6-7	4.40
1/8	1	1/4	5-6-7	4.40
3/16	1/2	5/16	8-9-10-11	5.00
3/16	3/4	5/16	8-9-10-11	5.00
3/16	1 Light	5/16	8-9-10-11	5.00
3/16	1 Heavy	3/8	8-9-10-11	5.00
3/16	1 5/8	5/16	8-9-10-11	6.25
1/4	3/4	7/16	12-13-14	5.60
1/4	1	7/16	12-13-14	5.60
1/4	1 1/2	7/16	12-13-14	8.00
1/4	2	7/16	12-13-14	10.00
1/4	2 1/2	7/16	12-13-14	12.00
5/16	3/4	7/16	15-16-17-18	6.25
5/16	1	7/16	15-16-17-18	6.25
5/16	1 3/8	1/2	15-16-17-18	10.00
5/16	1 1/2	7/16	15-16-17-18	10.00
5/16	2	7/16	15-16-17-18	13.00
3/8	1 1/4	9/16	20-22-24	15.00
3/8	2	9/16	20-22-24	15.00
1/2	2	3/4	26-28-30	25.00
5/8	2	7/8	5/8-In. Lag	30.00
5/8	3 1/2	7/8	5/8-In. Lag	50.00

Put up in wooden boxes, 100 to a box.

**Diamond Calking Anchors**



Diameter Bolt or Screw, In.	Per 100	SIZE HOLE, INCHES		Suggested Safe Load Pounds	Std. Pkg.	Weight Pounds per 100
		Diameter	Depth			
No. 6-32	\$3.80	1/4	3/8	80	100	1
No. 8-32	4.50	5/16	1/2	90	100	1 1/2
No. 10-24	4.95	3/8	5/8	175	100	2
No. 12-24	6.50	7/16	3/4	320	50	3 1/2
1/4-20	7.20	1/2	7/8	400	50	4 1/2
5/16	9.75	5/8	1	480	50	11
3/8	12.00	3/4	1 1/4	720	50	16
7/16	15.00	7/8	1 1/2	950	50	24
1/2	15.00	7/8	1 1/2	1000	50	24
5/8	25.00	1 1/8	2	1250	50	41

**Style B Diamond Super-Grip Expansion Shields**



Shield expanded by long, tapered cone shaped end of bolt. Nut grips work and expands shield. Bolts galvanized by the hot drip process. One calking tool furnished free with each box of bolts. Prices include bolts.

Size O.D. In.	LENGTH, INCHES							
	1 1/2	2	2 1/2	3	3 1/2	4	5	6
1/4	7/16	\$15.50	\$15.65	\$15.80	\$15.95			
5/16	1/2	23.00	23.50	24.00	24.50			
3/8	3/4			29.25	30.00	\$30.75	\$31.50	\$33.00
1/2	3/4				44.40	45.65	47.00	48.20
5/8	7/8					76.40	78.25	80.00
3/4	1						111.90	114.60

**Peirce Expansion Bolts**



No.	Size Inches	Standard Package	Wt., Lbs. per 100	Price per 100
1	1/4x1 3/4	100	7.1	\$6.00
2	1/4x2	100	7.5	6.20
3	1/4x2 1/2	100	8.3	6.50
4	1/4x3 1/4	100	9.5	7.80
4A	1/4x4	100	10.7	8.70
4B	1/4x5	100	12.3	10.90
5	3/8x2 1/2	100	14.9	10.80
6	3/8x3	100	15.9	11.50
7	3/8x3 1/2	100	16.9	12.30
8	3/8x4 1/2	100	18.9	14.40
9	3/8x5	100	19.9	14.70
10	3/8x5 1/2	100	21.0	15.60
11	1/2x2 1/2	50	41.2	17.30
12	1/2x3 1/2	50	47.2	18.90
13	1/2x4	50	50.2	19.80
14	1/2x4 1/2	50	53.0	20.50
15	1/2x5	50	56.0	21.50
16	1/2x5 1/2	50	59.0	22.40
17	1/2x6 1/2	50	62.0	24.00
18	1/2x8	50	73.0	26.90

**Extra Lead Sleeves**

No.	Diameter Inches	Standard Package	Wt., Lbs. per 100	Price per 100
22	1/4	100	2.75	\$2.10
23	3/8	100	5.9	3.30
24	1/2	100	21.5	10.00



## Diamond Tenax Expansion Shields For Machine Bolts



Tenax is cast in one piece of malleable iron. It has breakage connections between the nut and expansion shell. When the bolt is tightened the connections between the nut and shell break down and the nut telescopes into the shell and is guided by the slides in perfect alignment into the shell. A 4 way expansion with 4 ways to use. Smallest diameter of hole of any Malleable Iron expansion of equal bolt diameter. Has extremely high holding capacity. Prices do not include bolts.

Diam. Bolt In.	Per 100	Diameter Shield and Size Drill Inches	Length In.	No. Per Box	Shipping Wt. Lbs. per 100
1/4	\$15.00	7/16	1 1/4	100	3
5/16	18.00	1/2	1 1/2	100	5
3/8	25.00	5/8	2	100	8
1/2	38.00	3/4	2 1/2	100	12
5/8	45.00	7/8	2 7/8	100	17
3/4	65.00	1	3 1/4	50	24

## Diamond N Drills



4-Point or Star Drill

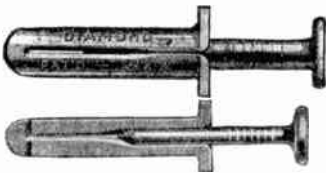


Diamond or Single Point Drill

Made of high grade octagon drill rod. Quality of steel is tested for uniformity. Heat treatment is scientifically conducted; heats for hardening and drawing the temper are determined by pyrometer and thermometer.

Diam. Drill In.	8 AND 12-INCH LENGTHS		18-IN. LGTH.		24-IN. LGTH.		
	Wt. Lbs. per Doz.	8-In. Lgth. per Doz.	Wt. Lbs. per Doz.	18-In. Lgth. per Doz.	Wt. Lbs. per Doz.	24-In. Lgth. per Doz.	
1/4	2	\$8.25	3	\$11.00	4	\$13.50	
5/16	3	8.25	4 1/2	11.00	6	13.50	
3/8	4	8.25	6	11.00	8	13.50	
7/16	5	8.70	7 1/2	11.50	10	14.00	
1/2	5	9.65	10.00	12.50	10	15.00	
9/16 & 5/8	9	11.65	12.00	13 1/2	15.00	18	17.50
11/16 & 3/4	12	13.70	14.00	18	17.50	24	20.00
7/8	15	15.30	16.00	22 1/2	20.00	30	22.50
1	21	17.00	18.00	31 1/2	22.50	42	25.00
1 1/8	27	23.00	24.00	41	28.00	54	32.00
1 1/4	27	.....	30.00	41	35.00	54	40.00
1 3/8	35	.....	40.00	53	45.00	70	50.00
1 1/2	42	.....	50.00	63	56.00	84	62.00
1 5/8	42	.....	60.00	63	66.00	84	72.00
1 3/4	43	.....	75.00	65	81.00	86	87.00
1 7/8	53	.....	90.00	80	97.00	106	104.00
2	54	.....	105.00	81	112.00	108	120.00
2 1/4	55	.....	135.00	83	145.00	110	165.00
2 1/2	79	.....	165.00	119	175.00	158	195.00

## Diamond D H D Hammer Drive Anchors



For nailing to concrete, brick or stone. Made of aluminum alloy, with steel nails, hot galvanized. Holds greater load when fastened to stone than wood screw screwed into wood.

Diam. and Lgth. of Shield In.	Diam. to Use In.	Std. Pkg.	Wt. Lbs. per 100	Per 100	Diam. and Lgth. of Shield In.	Diam. to Use In.	Std. Pkg.	Wt. Lbs. per 100	Per 100
3/16 x 7/8	3/16	100	1 1/4	\$8.00	5/16 x 2 1/4	5/16	100	6	\$18.00
3/16 x 1 1/4	3/16	100	1 1/2	9.00	5/16 x 2 3/4	5/16	100	7 1/2	20.00
1/4 x 1	1/4	100	2 1/4	10.00	3/8 x 2	3/8	100	8	20.00
1/4 x 1 1/4	1/4	100	2 3/4	11.00	3/8 x 3 1/4	3/8	100	14	25.00
1/4 x 1 1/2	1/4	100	3 1/2	12.00	1/2 x 2 1/4	1/2	50	17	30.00
5/16 x 1 1/4	5/16	100	3 1/2	14.00	1/2 x 3 1/2	1/2	50	25	35.00
5/16 x 1 3/4	5/16	100	5	16.00					

## Diamond Di-Forge Twist Drills and Drill Holders



Style B Holder



Style C Holder

The drill is forged from a solid bar of vanadium tool steel. This process produces a tougher and more durable drill than can be had by the machine process. It is intended to be used with a hand or electric hammer and not as a rotating drill.

Drill holders are made of vanadium steel. Type C drill holder is made with a soft rubber grip with flange to protect the hand of the operator.

Diameter of Drill Inches	Length Over All Inches	Depth of Hole Inches	Weight Pounds per Dozen	Price per Dozen
3/16	2 5/8	1 1/4	1/2	\$10.80
1/4	3 1/8	1 1/2	3/4	10.80
5/16	3 7/8	2	7/8	12.80
3/8	5 1/8	3 1/4	1 1/4	14.80
7/16	5 1/4	3 3/8	1 1/2	18.80
1/2	5 1/2	3 1/2	2	22.80
9/16	5 1/2	3 1/2	2 1/4	26.80

Twist drills are put up in sets containing 1 holder and 1 each 3/16, 1/4, 5/16, 3/8, 7/16 and 1/2-inch drill points.  
 Price, Drill Set, with Type B Holder.....per set \$7.00  
 Price, Drill Set, with Type C Holder.....per set 8.00  
 Price, Style B Drill Holders.....per dozen 24.00  
 Price, Style C Drill Holders.....per dozen 48.00

## Diamond N Drill Holders and Points



Drill holder and loose points is a combination which is convenient for electricians and in other lines of industry where numerous small holes must be drilled for fastening up small fixtures.

Holder will take drill points from 1/4 to 1 inch.

Weight, 8 1/2 pounds.

Per Dozen..... \$24.00

### Drill Points



The drills are carefully tempered to insure sufficient hardness at the point to withstand the wear of cutting and the temper is drawn away toward the shank so as to produce a softer steel where it enters the handle to prevent breaking off at that point.

Size In.	Each	Lgth. In.	Wt. Lbs.	Size In.	Each	Lgth. In.	Wt. Lbs.
1/4	\$8.50	4 1/2	1 1/4	5/8	\$12.00	6 1/4	2 7/8
5/16	8.50	4	1 1/8	3/4	14.00	6	4 1/4
3/8	8.50	4 1/2	1 1/4	7/8	16.00	6 1/2	4 3/4
7/16	9.00	4	1 1/2	1	18.00	6 1/2	6
1/2	10.00	5	2	.....	.....	.....	.....

**Nos. 50 and 53 Peirce Hammer Drills**



The Peirce Hammer Drill is a double-ended tool designed for drilling holes easily in brick, stone and concrete. It drills the hole and swages the lead sleeve of the bolt. Holds all sizes of drill points.

The drill cannot become wedged in the hole while drilling as a backward stroke of the hammer instantly releases it.

Injury to the hands of the operator is impossible.

The chuck has a quick release whereby a drill-point may be instantly removed and a sharp one inserted.

Price, No. 50 for Tamping 1/4-Inch Bolts.....each \$11.12  
 Price, No. 53 for Tamping 3/8-Inch Bolts.....each 11.84

**Peirce Drill Points**

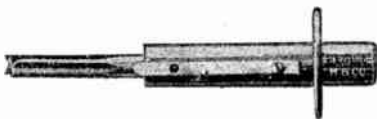


Made of fine tool steel and machined to exact size. The length of drill point depends on the length of bolt used. Two inches of the drill point are held inside the chuck. All drill points are measured overall. Special drill points of any diameter up to 1 inch, and any length, can be furnished to fit the hammer drill chuck. For 1/4-inch expansion bolt use 1/2-inch drill; for 3/8-inch bolt, 5/8-inch drill; for 1/2-inch bolt, 7/8-inch drill.

Cat. No.	Size Inches	Wt., Lbs. per 100	Price per 100	Cat. No.	Size Inches	Wt., Lbs. per 100	Price per 100
56	3/8x 4	20	\$66.90	61	5/8x12	79	\$247.10
57	1/2x 4	23	66.90	62	3/4x 6	47	172.80
58	1/2x 6	33	76.20	63	3/4x14	107	345.80
59	1/2x12	65	165.00	64	7/8x 6	57	227.70
60	3/4x 6	38	123.50	65	7/8x12	137	455.40

**Peirce Hand Chucks**

Permits the use of Peirce Drill Points with the old method of hand-and-hammer drilling.



Cat. No.	Description	Std. Pkg.	Wt., Lbs. Each	Price per 100
55	For All Sizes of Drills	5	2.60	\$150.00

**Peirce Tamping Tools**



Cat. No.	Diameter of Bolt, Inches	Std. Pkg.	Wt., Lbs. Each	Price per 100
67	1/4	5	3.4	\$43.70
68	3/8	5	4.9	43.70
69	1/2	5	10.2	43.70

**Peirce Expansion Shields**



For attaching multi-point brackets to brick or stone buildings. Size of screw, Nos. 20 and 22; diameter of shield, 1/2 inch; length of shield, 2 inches. Standard package, 100. Weight per 100 pieces, 9.5 pounds.  
 Price, No. 31.....per 100 \$9.90

**No. 3428 Klein's Torches  
 1-Quart Capacity  
 For Gasoline**

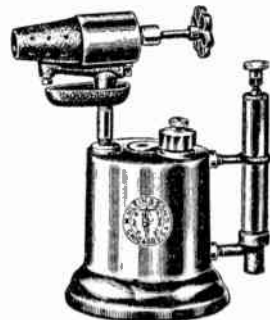
Double length generating channels which quickly vaporize the fuel are a patented feature. Produces an intensely hot flame which can be regulated from minimum to full blast. Will not back generate. Cleaning plugs at all angles. Needle has positive shoulder stop preventing damage to burner by enlarging orifice.

Pump is well made and sturdy.

Tank is heavy gauge copper, capacity, 1 quart.

Weight, 4 1/2 pounds.

Price, No. 3428.....each \$25.30



U.S. PAT. NO. 1676.352

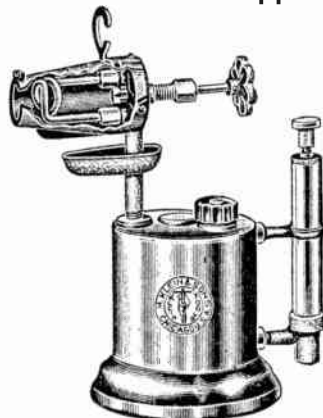
**Klein's 1-Quart Copper Tank Gasoline Torch**

Has a generator coil. Intense heat around this coil completely vaporizes the fuel so that it burns as a dry gas, giving a hot, but easily controlled flame. Generator coil can be replaced in a few minutes at small expense by backing off two nuts. Burner tip is replaceable.

No. 3428C. each \$25.30

If torch head assembly to attach to present tank is wanted, order No. 808C.

No. 808C...each \$8.00



**No. 3420 Klein's Staysalite Linemen's Torches**

This torch burns alcohol without odor or noise and stays lit in a wind.

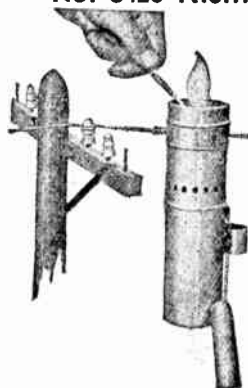
Light and small and is lit or extinguished in a moment, as wanted. Has no adjusting parts.

The Staysalite is carried in the lineman's belt and eliminates the ground man; can be hung directly on the wire under joint to be soldered.

Provided with a cup for holding soldering paste. Can be used as a small heater or for soldering iron.

Weight, 1 1/4 pounds.

Price, No. 3420.....each \$10.00

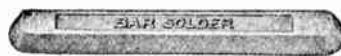


**Soldering Coppers**



Furnished without handle but having an iron rod fastened to the head, ready to be driven into a wooden handle. Supplied in all sizes. Prices upon application.

**Bar Solder**



An alloy of tin and lead, made up in the form of bars for convenience in handling, for making soldered joints in metals, such as lead piping systems, for cable splices and other heavy work.

Price, Solder in Regular Bars.....per pound \$1.00





**Nos. 1 and 11 India Micanite Plate  
For Molding**

No. 1 India Micanite Plate has a smooth surface which does not show any detrimental amount of loose laminations. It softens sufficiently at 140 degrees C. or 284 degrees F. to be readily molded to ordinary shapes without chipping, cracking or breaking.

It is carefully milled to specified thickness, allowing a variation of .002-inch in isolated spots on the thin sizes below .060-inch, and from .003-inch to .005-inch on sizes .060-inch and up.

Average puncture voltage per .001-inch runs from 900 volts on the thinner sizes to 800 volts on the thicker sizes. It must not be used for insulation between copper bars of commutators.

No. 11 India Micanite Plate is made of the same quality of mica films and cement that are used in our No. 1 Plate, but it is not as exact to thickness, and is not made in as many thicknesses. It varies in thickness from plus or minus .003-inch in the case of the .010-inch thick; .005-inch in the case of the  $\frac{3}{32}$ -inch; to plus or minus .010-inch in the case of the  $\frac{1}{8}$ -inch thick.

It becomes flexible when heated, is readily formed into shapes, and is suitable for all general purposes where a variation in thickness is permissible, except for commutator segments, for which it is not intended.

Average puncture voltage, 800 to 900 volts per .001-inch.

**No. 1**

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1202	.020	0.508	1.05	\$3.00
1203	.025	0.635	1.3	2.55
1204	.030	0.762	1.6	2.10
1205	$\frac{3}{32}$	0.79	1.7	2.10
1206	.035	0.889	1.85	2.10
1207	.040	1.016	2.1	1.95
1208	.045	1.143	2.35	1.95
1210	.050	1.27	2.65	1.95
1213	$\frac{1}{16}$	1.58	3.3	1.70
1216	$\frac{3}{32}$	2.38	5.	1.70
1217	$\frac{1}{8}$	3.17	6.5	1.70

**No. 11**

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1218	.010	0.254	.503	\$3.00
1219	.015	0.381	.748	2.75
1220	.020	0.508	.946	2.40
1223	$\frac{3}{32}$	0.79	1.64	1.70
1227	$\frac{3}{16}$	1.185	2.42	1.60
1231	$\frac{1}{8}$	1.58	3.32	1.45
1234	$\frac{3}{32}$	2.38	4.92	1.45
1235	$\frac{1}{8}$	3.17	6.22	1.45

Nos. 1 and 11 Micanite Plate furnished in special thicknesses, sizes and patterns. Prices quoted upon application.

**No. 2 India Micanite Plate  
For Commutator Segment Insulation**

No. 2 Micanite Plate is made of India Mica, as this variety is recognized as standard for electrical insulation where muscovite mica is used.

It is closely milled and the average thickness will not vary more than .0005-inch from specified thickness. Individual plates will not vary more than .001-inch above or .0015-inch below thickness specified in isolated spots. It cannot be molded.

Its average puncture voltage per .001-inch runs from 900 volts on the thinner sizes, to 800 volts on the thicker sizes.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1238	.020	0.508	1.2	\$2.65
1239	.025	0.635	1.5	2.45
1240	.030	0.762	1.8	2.20
1241	$\frac{3}{32}$	0.79	1.9	2.20
1242	.035	0.889	2.1	2.20
1243	.040	1.016	2.4	1.90
1244	.045	1.143	2.7	1.90
1245	$\frac{3}{16}$	1.185	2.85	1.90
1246	.050	1.27	3.	1.90
1248	.060	1.524	3.6	1.90
1249	$\frac{1}{8}$	1.58	3.8	1.90

No. 2 Micanite Plate can be furnished in special thicknesses, sizes, or patterns. Prices quoted upon application.

**No. 3 Amber Micanite Plate  
For Commutator Segment Insulation**

No. 3 Amber Micanite Plate is made of phlogopite or amber mica, which is softer than the muscovite and presents less liability of failure to wear down evenly with the copper bars.

It is closely milled and the average thickness will not vary more than .0005-inch from the specified thickness. Individual plates will not vary in isolated spots more than .001-inch above or .0015-in. below thickness specified. It cannot be molded.

Its average puncture voltage per .001-inch runs from 850 volts on the thinner sizes to 700 volts on the thicker sizes.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1272	.020	0.508	1.2	\$4.75
1273	.025	0.635	1.5	4.50
1274	.030	0.762	1.8	4.25
1275	$\frac{3}{32}$	0.79	1.9	4.25
1276	.035	0.889	2.1	4.25
1277	.040	1.016	2.4	4.00
1278	.045	1.143	2.7	4.00
1279	$\frac{3}{16}$	1.185	2.85	4.00
1280	.050	1.27	3.	4.00
1282	.060	1.524	3.6	4.00
1283	$\frac{1}{8}$	1.58	3.8	4.00

No. 3 Micanite Plate can be furnished in special thicknesses, sizes and patterns.

Prices quoted on application.

**No. 4 Micanite Plate  
For Flat Work**

This plate is made for flat work and for purposes where accuracy of thickness is not important. It is not milled or surfaced and therefore has a considerable variation in thickness.

It is suitable for all kinds of bases, round or square washers, and for all kinds of apparatus not subject to high heat.

Its non-liability to fracture under extreme vibration is a valuable feature for marine work. It does not take a screw thread, but can be drilled and turned.

Average puncture voltage, approximately 800 volts per .001-inch.

No. 4 plate is not furnished thinner than  $\frac{1}{16}$ -inch.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1296	$\frac{1}{16}$	1.58	3.25	\$1.25
1297	$\frac{3}{32}$	2.38	4.87	1.25
1298	$\frac{1}{8}$	3.17	6.5	1.25
1300	$\frac{1}{4}$	6.34	13.	1.25
1301	$\frac{3}{8}$	9.52	19.5	1.25
1302	$\frac{1}{2}$	12.69	26.	1.25

Prices on sheets of No. 4 Micanite Plate, of special size and pattern quoted upon application.

**No. 5 Flexible Micanite Plate  
For Cold Forming**

No. 5 Flexible Micanite is made of very thin films of muscovite mica cemented together with a special insulating cement of great flexibility and adhesiveness. This article in many ways presents mica in its most convenient and economical form for electrical insulation. It can be formed or bent to shape without application of heat.

It is an excellent insulator for armature slots, armature, magnet and commutator cores, transformers, field coils, etc.

No. 5 Flexible Micanite Plate cannot be surfaced like No. 1 No. 2, or No. 3 plate. It is therefore subject to some variation in thickness, running from .002-inch to .003-inch on the thinner sizes; from .005-inch to .007-inch on the  $\frac{3}{32}$ -inch thickness, and from .010-inch to .015-inch on the  $\frac{1}{8}$ -inch thickness.

Its average puncture is approximately 600 volts per .001-inch.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1303	.005	0.127	.55	\$3.15
1304	.010	0.254	1.	2.00
1305	.015	0.381	1.45	1.75
1306	.020	0.508	1.9	1.75
1307	.025	0.635	2.3	1.60
1309	$\frac{3}{32}$	0.79	3.	1.60
1313	$\frac{1}{16}$	1.58	6.	1.55
1314	$\frac{3}{8}$	3.17	12.	1.55

Prices on No. 5 Micanite plate of special thickness, size, or pattern, quoted upon application.

## Uncut Sheet Mica

Uncut mica is carefully selected as to quality and sizes it will cut. The different grades will cut assorted sizes as shown in table. All grades are closely trimmed.

Grade No.	India			Price per Pound
	Will Cut Assorted Sizes			
A1 4	to 6	Inches Wide, 7	to 9	Inches Long \$9.00
1 3	to 5	Inches Wide, 5	to 7	Inches Long 7.00
2 1½	to 3½	Inches Wide, 4½	to 6	Inches Long 5.50
3 1½	to 3	Inches Wide, 3	to 4½	Inches Long 4.25
4 1½	to 2½	Inches Wide, 2½	to 3	Inches Long 3.25
5 1	to 2	Inches Wide, 2	to 2½	Inches Long 1.90

Amber					
Cat. No.		Inches Wide,		Inches Long	Price per Pound
A1 4	to 5	7	to 9	\$5.00	
1 3	to 6	5	to 7	3.25	
2 1½	to 3½	4½	to 6	2.50	
3 1½	to 3	3	to 4	1.80	
4 1½	to 2½	2½	to 3	1.25	
5 1	to 2	2	to 2½	.65	

## No. 20 Micanite Cloth

No. 20 Micanite Cloth is made with 1, 2 or 3 layers of high-grade India Mica films, cemented together with overlapping edges into sheet form, the sheet being faced on one side with cotton cloth and the other side with Japanese paper.

It is an excellent composite insulation, the cloth adding mechanical strength, and is often used in conjunction with Empire Cloth and Paper, fish paper, etc., for transformers, field magnets and armature cores. In strip or tape form No. 20 Micanite Cloth is an efficient insulation for wrapping all sorts of conductors, and can be furnished any width from ½ to 36 inches, in rolls approximately 3¾ inches in diameter.

Cat. No.	THICKNESS		Layers of Mica	Approx. Lbs. per Roll	Price per Lb.
	Inches	MM.			
1315	.008	0.203	1	3.3	\$3.50
1316	.011	0.279	2	5.2	3.00
1317	.014	0.356	3	7	2.40

## No. 24 Micanite Paper

No. 24 Micanite paper is of the same nature as No. 20 Micanite Cloth except that the material is faced on both sides with Japanese tissue paper instead of cotton cloth, the object being to supply an insulation thinner than Micanite Cloth, but retaining the same thickness of mica film.

Cat. No.	THICKNESS		Layers of Mica	Approx. Lbs. per Roll	Price per Lb.
	Inches	MM.			
1321	.005	0.127	1	2.4	\$3.50
1322	.008	0.203	2	4.2	3.00
1323	.011	0.279	3	6.	2.50

## Empire Paper

Approximate Width 36 Inches—Price per Linear Yard

No.	Less Than 100 Sq. Yds. and Over		Thick. Inches	Base Paper
	100 Sq. Yds.	100 Sq. Yds. and Over		
75	\$.19	\$.145	.00075	Condenser Paper
100	.19	.145	.001	Condenser Paper
101	.19	.145	.0015	Condenser Paper
102	.19	.145	.002	Condenser Paper
103	.20	.155	.003	Condenser Paper
444	.21	.165	.004	Bond Paper
555	.23	.20	.005	Bond Paper
106	.24	.21	.006	Bond Paper

## Yellow and Black Varnished Paper

Yellow No.	Less Than 100 Sq. Yds. and Over		Thick. In.	Base Paper	
	Black	100 Sq. Yds. and Over			
104	1104	\$.15	\$.125	.004	Kraft Paper
105	1105	.16	.135	.005	Kraft Paper
		.17	.145	.007	Kraft Paper
108	1108	.18	.155	.008	Kraft Paper
110	1110	.21	.185	.010	Kraft Paper
112	1112	.22	.195	.012	Kraft Paper
115	1115	.27	.245	.015	Kraft Paper
118	1118	.35	.325	.018	Kraft Paper
120	1120	.35	.325	.020	Kraft Paper
107	1107	.20	.175	.007	Gray Rope Paper
109	1109	.23	.20	.009	Gray Rope Paper

## Varnished Red Rope Paper

Thickness.....inches	.007	.010	.012	.015
Less Than 100 Sq. Yds.	\$.20	\$.24	\$.28	\$.36
100 Sq. Yds. and Over	.175	.205	.25	.325

## Empire Yellow and Black Varnished Canvas and Duck

Approximate Width 36 Inches—Price per Linear Yard

Put up in standard 25-yard rolls.

Thickness Inches	No.	Yellow		No.	Black	
		Less Than 100 Sq. Yds.	100 Sq. Yds. and Over		Less Than 100 Sq. Yds.	100 Sq. Yds. and Over
.016	16	\$ .44	\$ .40	1600	\$ .44	\$ .40
.020-.022	20	.49	.45	200	.49	.45
.024-.026	24	.54	.50	240	.54	.50
.030-.032	32	.69	.65	320	.60	.56
.034-.035	35	.79	.75	350	.69	.65
.037	..	.82	.78	...	.72	.68
.040	..	.89	.85	...	.74	.70

## Super-Micanite Plate

Super-Micanite is made with a synthetic cement or binding material, whereas Micanite, and in fact all other similar mica installations, are made with a cement of shellac.

The use of this synthetic cement as a binder has resulted in a superior mica insulation. Super-Micanite means less trouble in the manufacture of commutators, longer life for electrical apparatus, added dependability, fewer break-downs, reduced maintenance. Its specific advantages will be furnished on request.

Super-Micanite is particularly recommended for commutator insulation work, armatures, field magnets, electric heating units and for high tension work in general.

Prices are approximately 10 per cent higher than prices of Standard Micanite.

## Empire Seamless Bias Varnished Tape

Price per Gross (144) Yards

Empire Varnished Tape (Seamless Bias) is the trade name under which is sold Empire Insulating Cloths in tape form. It provides in convenient form for such uses as coils, cables and bus bar insulations.

This tape insures a smooth, uniformly protected insulated tape. Can be hand or machine applied, and special length coils are supplied for coil winding machines. Saves both time and money in application, as every inch is usable, and in service gives a better job, doing away with plain woven tapes, thus eliminating need of impregnation.

Standard rolls are 36 and 72 yards long.

Size Inches	No. 72 Yellow No. 763 Black .007 in. Thick		No. 71 Yellow No. 74 Black .007 in. Thick		No. 10 Yellow No. 99 Black .010 in. Thick	
	Less Than 100 Sq. Yds.	100 Sq. Yds. and Over	Less Than 100 Sq. Yds.	100 Sq. Yds. and Over	Less Than 100 Sq. Yds.	100 Sq. Yds. and Over
1/2	\$1.90	\$1.58	\$1.98	\$1.68	\$2.14	\$1.82
3/4	2.76	2.30	2.90	2.44	3.10	2.66
1	3.62	3.04	3.80	3.22	4.08	3.48
1¼	4.52	3.80	4.76	4.02	5.10	4.36
1½	5.50	4.62	5.78	4.88	6.20	5.30

Size Inches	No. 101 Yellow No. 104 Black .010 in. Thick		No. 125 Yellow No. 123 Black .012 in. Thick		No. 126 Yellow No. 127 Black .012 in. Thick	
	Less Than 100 Sq. Yds.	100 Sq. Yds. and Over	Less Than 100 Sq. Yds.	100 Sq. Yds. and Over	Less Than 100 Sq. Yds.	100 Sq. Yds. and Over
1/2	\$1.94	\$1.64	\$2.04	\$1.72	\$2.18	\$1.86
3/4	2.82	2.38	2.96	2.52	3.18	2.72
1	3.72	3.12	3.90	3.30	4.16	2.58
1¼	4.64	3.90	4.86	4.14	5.20	4.46
1½	5.64	4.76	5.92	5.02	6.34	5.44

Additional charges are to be added to gross yard price for rolls other than standard rolls.

Can be supplied packed in oil; prices on application.

**Orangeburg Fibre Conduit**

**Harrington (Sleeve) Joint Type**



Orangeburg Fibre Conduit is manufactured by The Fibre Conduit Company at Orangeburg, New York and Richmond, Indiana. These two plants are equipped with the most modern machinery for the manufacture of fibre conduit and are devoted to the manufacture of this product.

Orangeburg Fibre Conduit is made from wood fibre. The conduits are dried in automatic driers and then thoroughly impregnated with a preserving compound. The ends of the conduits are accurately machined to insure tight joints.

During the entire process of manufacture many inspections are made to insure that the finished product meets the most exacting specifications.

During the past 41 years many millions of feet of Orangeburg Fibre Conduit have been installed in underground systems under all conditions of soil and climate.

Recent improvements in manufacturing processes have resulted in an even better Orangeburg Conduit. This improved conduit has the following outstanding advantages:

1. Extremely high resistance to water absorption.
2. Higher crushing strength.
3. Higher bending strength.
4. Higher impact resistance.
5. Greater resistance to flattening.

Standard conduit length in all sizes from 1 to 6 inches inclusive is 5 feet; 8-foot lengths are also standard in sizes 2½ to 4½ inches inclusive.

One coupling is supplied with each length.

Inside Diameter Inches	Wt., Lbs. per Foot	Approx. No. Feet *Minimum Carload
1	.60	50000
1½	.85	35300
2	1.05	28575
2½	1.30	23080
3	1.60	18750
3½	1.90	15790
4	2.30	13045
4½	2.65	11325
5	3.25	9235
6	4.25	7060

\*Minimum carload, 30000 pounds.

Socket joint conduit supplied on special request.

**Orangeburg Fibre Conduit Bends**

**Harrington (Sleeve) Joint**



45° Bend—5 Feet Long, 36-Inch Radius



90° Bend—5 Feet Long, 36-Inch Radius



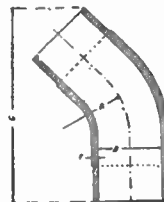
S Bend—5 Feet Long, Offset 20 Inches

One coupling is supplied with each bend or elbow.

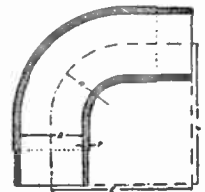
I.D. In.	RADIUS STANDARD BENDS, INCHES		I.D. In.	RADIUS STANDARD BENDS, INCHES	
	45° and 90°	S Bends (20 Inch Offset)		45° and 90°	S Bends (20 Inch Offset)
1	18-24-36	36	3½	36	36
1½	18-24-36	36	4	36	36
2	18-24-36	36	4½	36	36
2½	24-36	36	5	36	36
3	36	36	6	36	36

**Orangeburg Fibre Conduit Elbows**

**45° and 90° Elbows**



45° Elbow



90° Elbow

Sleeve Inches	STANDARD RADIUS INCHES		Sleeve Inches	STANDARD RADIUS INCHES	
	45° Elbow	90° Elbow		45° Elbow	90° Elbow
1	2.0	5.75	3½	3.0	15.0
1½	2.5	8.25	4	3.5	16.0
2	2.5	9.50	4½	4.5	18.0
2½	2.5	10.50	5	5.0	24.0
3	3.0	13.00	6	6.0	....

Socket joint type bends and elbows will be supplied upon special request.

**Orangeburg Fittings**

Fittings such as manhole bells, plugs, fibre conduit to metal conduit adapters and reducers, fibre to fibre adapters and reducers, etc., are available. Information regarding such fittings and specialties gladly furnished on request.

**Orangeburg Fibre Conduit Field Tooling Machines**

A light weight, readily portable field tooling machine selling at a nominal price is available for use in milling joints on the job. This machine permits of satisfactory joints being in the field with a minimum expenditure of time and labor. Price information and further details of this machine furnished on request.



## Natco Standard Single Duct Conduit



Adapted for high tension power lines, single cable terminals or for low tension laterals, as in telephone or signal lines.

In building up duct banks, this conduit provides two heavy insulating walls between adjacent cables, and permits breaking or staggering of all joints throughout the duct bank.

Permits the splaying or separation of individual duct lines in approaches to manholes.

Conduit is scarified lengthwise on the four outer sides, to provide anchorage for bedding mortar.

The inner edges of the duct entrances are properly bevelled and smoothed to eliminate projections and to make safe the pulling of cables.

Certain square single duct shapes are provided with through dowel holes in the corners, permitting the use of steel dowel pins for assembling, centering and aligning such duct lines.

Standard length, 18 inches, except in the 5 1/4-inch round bore shape which is 24 inches long. Short lengths as shown in table, are available for staggering joints.

Nom-inal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pc.	Actual Size Duct Hole In.	Approx. Out-side Dimen. In.	Made in Short Lgths. In.	Min. Car-load Duct Ft.
3 1/4 Rd.	1	18	1 1/2	3 3/8	4 1/2 x 4 1/2	3, 4, 6, 9, 12	7800
3 1/2 Rd.	1	18	1 1/2	3 5/8	4 7/8 x 4 7/8	3, 4, 6, 9, 12	6900
4 1/4 Rd.	1	18	1 1/2	4 3/8	5 5/8 x 5 5/8	3, 4, 6, 9, 12	5700
5 1/4 Rd.	1	24	2	5 3/8	6 7/8 x 6 7/8	3, 4, 6, 8, 12	4000
3 1/4 Sq.	1	18	1 1/2	3 3/8	4 3/4 x 4 3/4	3, 4, 6, 9, 12	6100
3 1/2 Sq.	1	18	1 1/2	3 5/8	5 x 5	3, 4, 6, 9, 12	5700
4 1/4 Sq.	1	18	1 1/2	4 3/8	5 1/8 x 5 1/8	3, 4, 6, 9, 12	4800

## Natco Single Duct Bends



### Standard Shapes

Bore.....	3 1/4, 3 1/2 or 4 1/4	Round or Square
Angle.....	45°	90°
Radius.....inches	12, 18, 24 or 36	12, 18, 24

### Arc or Length

Bore.....inches	3 1/4, 3 1/2 or 4 1/4 Rd.	3 1/4, 3 1/2 or 4 1/4 Sq.
Length.....inches	18	18
Radius.....inches	36, 60, 72 or 96	36, 60, 72 or 96

Bends also supplied that are scored for splitting apart.

## Natco Socket Joint Single Duct Conduit

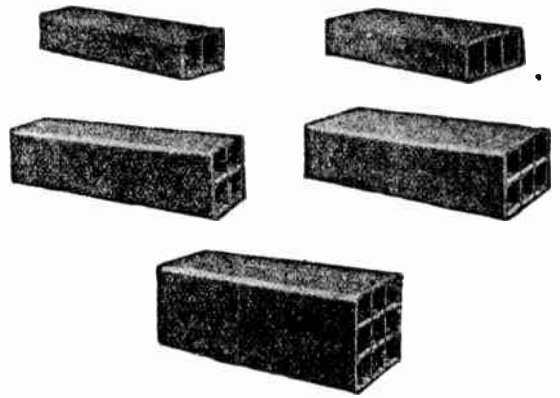


Natco Single Duct Conduit is also manufactured in a new socket joint type, which is supplied in 3 1/2, 4 and 4 1/2-inch round bore and in either 18 or 24-inch standard lengths. This new type of duct is self-centering, provides positive alignment, lays up fast and can be installed by ordinary labor. If desired, the joints may be readily troweled or sealed with cement mortar. This new type of conduit is especially adapted for single duct lateral lines, also equally suitable for duct bank construction where this type of joint is preferred.

Nominal Bore.....inches	3 1/2 Rd.	4 Rd.	4 1/2 Rd.
Length.....inches	18 and 24	24	24
Actual Size of Duct Holes.....inches	3 5/8	4 1/8	4 5/8

Also furnished in bends and mitred sections.

## Natco Standard Multiple Duct Conduit



Particularly adapted for telephone, telegraph, railway signal, fire alarm and low tension light and power service. The large units are economical and quick to install, due to their longer lengths and multiplicity of duct holes.

At the extreme ends of each piece of conduit, a smooth surface is left to permit wrapping each joint with tape or fabric to exclude joint mortar from the ducts.

Supplied in either 3 1/4, 3 1/2 or 4 1/4-inch square bore shapes and in 2, 3, 4, 6 and 9-way multiple shapes.

The 3 1/4 inch is the standard bore, while 4 1/4 inch is the over-size bore, for most telephone service and for certain low tension power and lighting systems, while the 3 1/2 inch bore is frequently specified for certain municipal installation.

Nom-inal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pc.	Actual Size Duct Hole In.	Approx. Out-side Dimen. In.	Made in Short Lgths. In.	Min. Car-load Duct Ft.
3 1/4 Sq.	2	24	4	3 3/8	4 3/4 x 8 3/4	6, 8, 12	7600
3 1/4 Sq.	3	24	6	3 3/8	4 3/4 x 12 3/4	6, 8, 12	7500
3 1/4 Sq.	4	36	12	3 3/8	8 3/4 x 8 3/4	6, 9, 12	8400
3 1/4 Sq.	6	36	18	3 3/8	8 3/4 x 12 3/4	6, 9, 12	9000
3 1/4 Sq.	9	36	27	3 3/8	12 3/4 x 12 3/4	6, 9, 12	9000
3 1/2 Sq.	2	24	4	3 5/8	5 1/8 x 9 3/8	6, 8, 12	6400
3 1/2 Sq.	3	24	6	3 5/8	5 1/8 x 13 3/8	6, 8, 12	6900
3 1/2 Sq.	4	36	12	3 5/8	9 3/8 x 9 3/8	6, 9, 12	7500
3 1/2 Sq.	6	36	18	3 5/8	9 3/8 x 13 3/8	6, 9, 12	8100
4 1/4 Sq.	2	24	4	4 3/8	5 1/2 x 11	6, 8, 12	5200
4 1/4 Sq.	3	24	6	4 3/8	5 1/2 x 16 1/16	6, 8, 12	5400
4 1/4 Sq.	4	36	12	4 3/8	11 x 11	6, 9, 12	6000
4 1/4 Sq.	6	36	18	4 3/8	11 x 16 1/16	6, 9, 12	6300
4 1/4 Sq.	9	24	18	4 3/8	16 1/16 x 16 1/16	6, 8, 12	6800

## Natco Split Conduit



Natco Conduit in both single and multiple duct shapes and in all standard bores is supplied, scored or knifed, for splitting apart on the job, for repairing or replacing duct lines, without the necessity of removing cables.

These split sections may be also used to enclose cable joints or splices in place of building manholes.

'Bore Inches	No. of Duct Holes	Standard Length Inches	Short Lengths Inches
3 1/4, 3 1/2 or 4 1/4 Rd.	Sgl. Duct	18	6, 9, 12
3 1/4, 3 1/2 or 4 1/4 Sq.	Sgl. Duct	18	6, 9, 12
3 1/4 Sq.	2 or 3-Way	18 and 24	6, 9, 12
3 1/4 Sq.	4 or 6-Way	18 and 36	6, 9, 12
3 1/4 Sq.	9-Way	18	6, 9, 12
3 1/2 Sq.	2 or 3-Way	18 and 24	6, 9, 12
3 1/2 Sq.	4 or 6-Way	18 and 36	6, 9, 12
4 1/4 Sq.	2 or 3-Way	18	6
4 1/4 Sq.	4 or 6-Way	18	6
4 1/4 Sq.	9-Way	18	6

**Natco Mitred Conduit**

For Curve Construction



Natco Conduit, both single and multiple duct, in all standard bores, is supplied in mitred shapes, for building either simple or intricate curves in lines of clay conduit, for transposing narrow duct banks into wide ones or vice versa, or for splaying duct lines to enter manholes or service points.

Natco Mitred Conduit is made in one standard cut—3 degree and 10-foot radius. The radius of curves built of these sections, is varied simply by interposing straight short pieces between the mitred sections, and the arc of such curves is governed simply by the total number of pieces used.

True and easy curves from 10 to 30 foot radius, and ranging from 3 to 90 degrees, can thus be built.

In the 2, 3 and 6-way multiple conduit, the mitred sections are supplied in either a flat or edge position.

Mitred conduit also supplied scored for splitting apart.

Approximate length, 6x6<sup>5</sup>/<sub>8</sub> inches. Number of pieces in 90° curve, 30.

Bore Inches	No. of Duct Holes	Position
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> , or 4 <sup>1</sup> / <sub>4</sub>	Round	.....
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> , or 4 <sup>1</sup> / <sub>4</sub>	Square	.....
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> , or 4 <sup>1</sup> / <sub>4</sub>	Square	Flat or Edge
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> , or 4 <sup>1</sup> / <sub>4</sub>	Square	.....
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> , or 4 <sup>1</sup> / <sub>4</sub>	Square	.....
3 <sup>1</sup> / <sub>4</sub> or 4 <sup>1</sup> / <sub>4</sub>	Square	.....

**Natco Branch Conduit**

For Dividing Multiple Duct Main Lines



Natco Multiple Duct Conduit is supplied in branch shapes in all standard bores.

Natco Branch Conduit is a new shape, one end of which is the same shape and size as standard conduit, while at the opposite end, certain ducts are more widely separated by means of double webs, so as to permit alignment with abutting branch lines.

Branch conduit permits the division of multiple duct main lines into two or more branch lines, each having a smaller number of ducts than the main line. Such a division is highly advantageous in splaying main duct lines into central office buildings, manholes or cable vaults, or for turning laterals or service connections. It frequently saves the necessity of manholes.

Also supplied scored for splitting apart.

Length, 24 inches.

Bore Inches	No. of Duct Holes	Type	For Branching Into
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> or 4 <sup>1</sup> / <sub>4</sub>	2-Way	1-1	2 Single Duct
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> or 4 <sup>1</sup> / <sub>4</sub>	3-Way	1-2	1 Single and 1 Two-Way
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> or 4 <sup>1</sup> / <sub>4</sub>	3-Way	1-1-1	3 Single Duct
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> or 4 <sup>1</sup> / <sub>4</sub>	4-Way	2-2	2 Two-Way
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> or 4 <sup>1</sup> / <sub>4</sub>	6-Way	2-4	1 Two-Way and 1 Four-Way
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> or 4 <sup>1</sup> / <sub>4</sub>	6-Way	2-2-2	3 Two-Way
3 <sup>1</sup> / <sub>4</sub> , 3 <sup>1</sup> / <sub>2</sub> or 4 <sup>1</sup> / <sub>4</sub>	6-Way	3-3	2 Three-Way
3 <sup>1</sup> / <sub>4</sub> , or 4 <sup>1</sup> / <sub>4</sub>	9-Way	3-6	1 Three-Way and 1 Six-Way

**Natco Transposition Conduit**

For Transposing or Twisting 2, 3 and 6-Way Conduit Lines



Natco Multiple Duct Conduit is also supplied in transposition shapes in 2, 3 and 6-way multiples, with right or left-hand twist. The degree or angle of twist is 22<sup>1</sup>/<sub>2</sub>° for 3<sup>1</sup>/<sub>4</sub>-inch bore shapes, 18° for 3<sup>1</sup>/<sub>2</sub>-inch bore shapes and 15° for 4<sup>1</sup>/<sub>4</sub>-inch bore shapes, and the standard length is 24 inches.

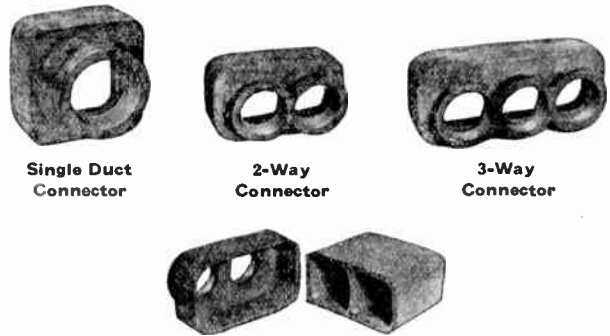
The number of pieces required to effect a quarter turn of 90° from a flat to an edge position, or vice versa, is four pieces in the 3<sup>1</sup>/<sub>4</sub>-inch bore, five pieces in 3<sup>1</sup>/<sub>2</sub>-inch bore or six pieces in the 4<sup>1</sup>/<sub>4</sub>-inch bore sizes.

These transposition shapes are of considerable advantage in changing the position or height of conduit lines, in order to avoid certain street obstructions, or to cross viaducts or bridges, or to change the position of cables on their approach to manholes or cable vaults, all of which frequently eliminates the need of manholes.

Bore .....	inches	3 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub>
Twist .....		22 <sup>1</sup> / <sub>2</sub> °	18°	15°
No. of Pieces in 1/4 Turn .....		4	5	6

Direction of twist, right or left hand.

**Natco Pipe Connectors**



Rear View of Connector Ready to Receive Conduit

For the purpose of connecting clay conduit lines to iron pipe lines as in pole risers or to enter buildings, Natco Pipe Connectors are available in the sizes shown below.

These connectors are made of cast iron, one end is shaped to receive the end of the clay conduit line, while the opposite end of the connector is tapped and threaded to receive the iron pipe lines.

For connecting to smaller sizes of pipe, ordinary pipe bushings can be screwed into these connectors to accommodate any standard size pipe.

**Single Duct Connector**

For 3<sup>1</sup>/<sub>4</sub>-inch bore conduit 3-inch pipe or 4<sup>1</sup>/<sub>4</sub>-inch bore conduit 4-inch pipe.

**2-Way Connector**

For 3<sup>1</sup>/<sub>4</sub>-inch bore conduit 3-inch pipe or 4<sup>1</sup>/<sub>4</sub>-inch bore conduit 4-inch pipe.

**3-Way Connector**

For 3<sup>1</sup>/<sub>4</sub>-inch bore conduit 3-inch pipe or 4<sup>1</sup>/<sub>4</sub>-inch bore conduit 4-inch pipe.

## No. 106 Natco Conduit



Illustrating the conversion of a 4-way multiple duct line into two 2-way multiple duct lines in an edge position, one of which is flexed or curved to one side in the direction of a pole and terminated in two riser iron pipe lines, ascending the pole, while the other 2-way line is transposed or twisted 90° from an edge to a flat position in a distance of 8 feet and then continued straight on in the form of standard 2-way multiple duct conduit—in a flat position.

### Specifications

**B**—One-piece 4-way type 2-2 branch conduit, 2 feet long (for dividing the 4-way line into two 2-way lines).

**E**—Six pieces 2-way mitred conduit—edge position—3° 10-inch radius—6¼ inches long, (for flexing or curving one of the 2-way lines to one side in the direction of the pole. The angle of flexure shown is 18° but any angle of flexure divisible by 3, may be attained by varying the number of mitred pieces).

**H**—One-piece 2-way standard conduit, 2 feet long (laid in edge position—to extend the flexed 2-way line on towards pole).

**R**—One cast iron 2-way connector for 3-inch wrought iron pipe.

**P**—Four pieces 2-way left-hand transposition conduit, 22½°, 2 feet long (for transposing the other 2-way line 90° from an edge to a flat position).

### Dowel Pins



Pressed steel pins, 5/16x3 inches, with an integral central flange or collar, are generally used for joining or aligning individual sections of multiple duct, also certain sizes of square bore single duct conduit together.

Two pins are used at each joint or for each piece of conduit.

### Joint Tape



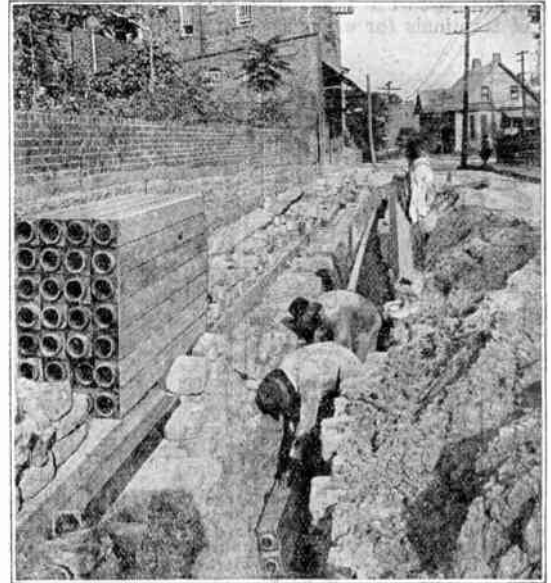
An especially prepared tape is frequently used for wrapping the joints of multiple duct conduit prior to the application of the joint mortar, also occasionally used for wrapping joints of single duct conduit in trench, subway or masonry structures, prior to the pouring of the concrete encasement.

This tape has an adhesive waterproof coating on one side, and is supplied in 4 and 6-inch widths, and put up in rolls of 25 linear yards.

Tape adheres closely and firmly to the glazed surface of the conduit and aids in sealing the joints.

In ordering, specify total number of linear yards required.

## Rainier Wood Conduit



This conduit is manufactured from yellow pine at the plant at Wilmington, North Carolina, and from Douglas fir at our plant at Centralia, Washington. An economical and satisfactory conduit for the carrying of all forms of lead cable and wires.

Comes in random lengths.

Outside Measurement... inches	5½x5½	5x5	4½x4½	3½x3½
Diameter Bore..... inches	4	3½	3	2

Each piece has a mortise at one end and a tenon on the other end.

It is in general use by the large telegraph companies and telephone companies all over the country and by many railroads.

Uses for which it is adapted:

**RAILROADS.**—Trunking, underground signal wires, high tension transmission lines, yard drainage where clay conduit is easily broken through, and system is usually placed on the surface of the ground.

**TELEPHONE COMPANIES.**—All underground work.

**TELEGRAPH COMPANIES.**—All underground work.

**POLICE AND FIRE ALARM SYSTEMS.**—For carrying wires, either high or low tension under ground.

**CENTRAL STATIONS.**—For distribution mains and services.

**SPECIFICATION CREOSOTED CONDUIT.**—Free from large, unsound or loose knots, or other defects which would impair strength. Creosoted steam and vacuum treatment, dead oil of coal tar under pressure either 12 pounds per cubic foot (full cell) or 8 pounds per cubic foot (empty cell) as ordered.

Any additional information regarding the practicability of installing this conduit will be furnished upon request.

Prices on application.



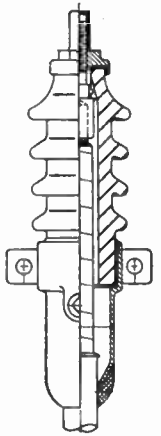
**General Cable Terminals**

Herewith are illustrated a few of the typical models of cable terminals made by the General Cable Corporation.

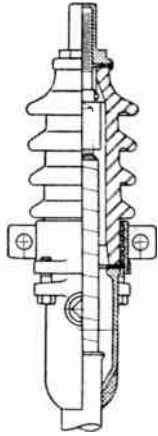
In addition to the types illustrated we offer a complete line of terminals for every type of cable installation. All

cable terminals are furnished in single conductor style. Multi-conductor terminals can be furnished in all styles except bolted gasket style. Various styles of cable entrances can be furnished, as illustrated.

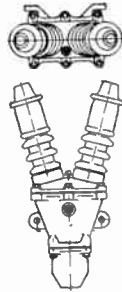
We welcome inquiries regarding cable problems.



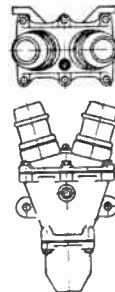
**Indoor and Outdoor Hoodnut Single Conductor (Outdoor Shown)**



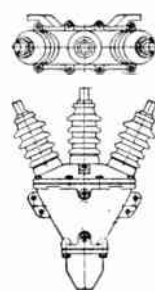
**Bolted Gasket Indoor and Outdoor Hoodnut Single Conductor (Outdoor Shown)**



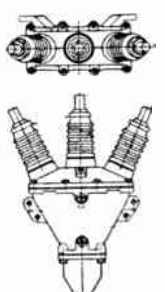
**Flat Straightaway Disconnecting 2-Conductor**



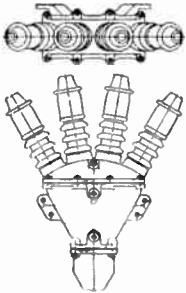
**Flat Straightaway, Open End Insulator 2-Conductor (For Indoor Use)**



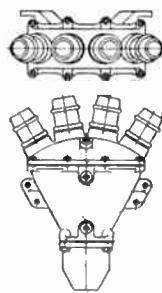
**Flat Straightaway Outdoor Closed Hoodnut 3-Conductor**



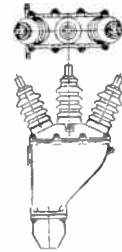
**Flat Straightaway Indoor Closed Hoodnut 3-Conductor**



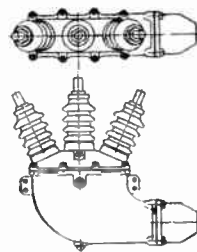
**Flat Straightaway Disconnecting 4-Conductor**



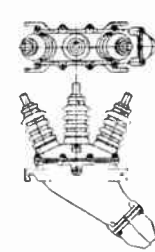
**Flat Straightaway, Open End Insulator 4-Conductor (For Indoor Use)**



**Flat Edgewise 3-Conductor**



**Right or Left Elbow 3-Conductor**

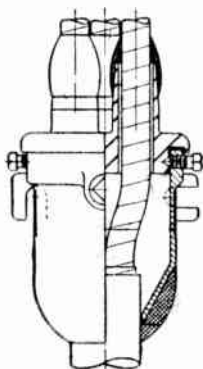


**45° Angular 3-Conductor**

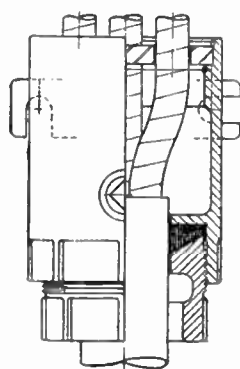


**Round 3-Conductor**

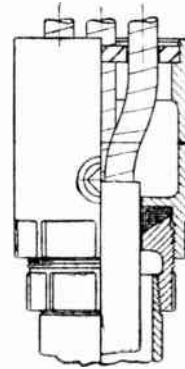
The Above Shapes Available in 2, 3 and 4 Conductors



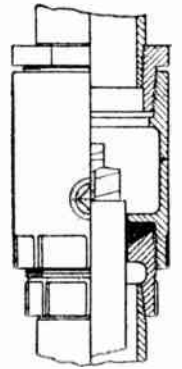
**Molded Cap with Taping Cones—Type A Bell (Wiping) 600-Volt Control Terminal**



**Flat Cap—Type B Bell (Stuffing Box) 600-Volt Control Terminal**



**Flat Cap—Type C Bell (Pipe Connected) 600-Volt Control Terminal**



**Bell Fitted with Pipe Connection on Both Ends 600-Volt Control Terminal**

**Cable Entrances**

These terminals are furnished in 3 types of cable entrances as shown above. In the case of the single conductor terminals, the entrances are integral with and really form the bell. In the multi-conductor terminals, they are separate and are bolted to the bell. They are interchangeable. As all types of entrances are drilled for the cable size, at the factory, it is necessary to fully specify the cable data when ordering.

Type A cable connection consists of plumber's wiped joint between cable sheath and terminal bell or wiping nipple.

Complete Information gladly furnished on request.

Type B cable connection consists of a stuffing joint between cable and terminal. This joint is made tight by compressing suitable packing material around cable, between a gland and a gland nut. It can be used with either leaded or non-leaded cable, lead wool being used as the packing in the first case and jute in the second.

Type C connection consists of the Type B stuffing box joint, plus a conduit fitting which clamps around the conduit. This conduit fitting requires no thread on the conduit but can also be used on a conduit which has already been threaded.

## G & W Potheads

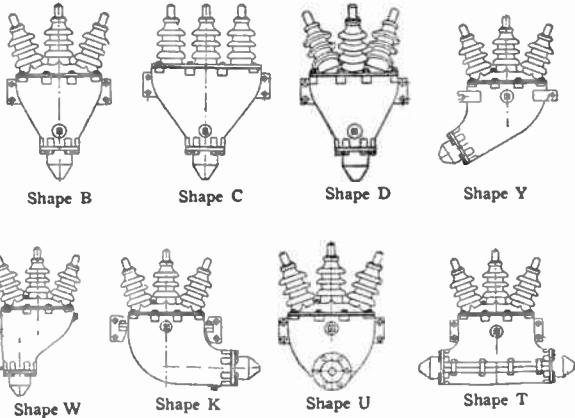


Designs of these potheads are the result of the co-operative effort of experienced distribution engineers.

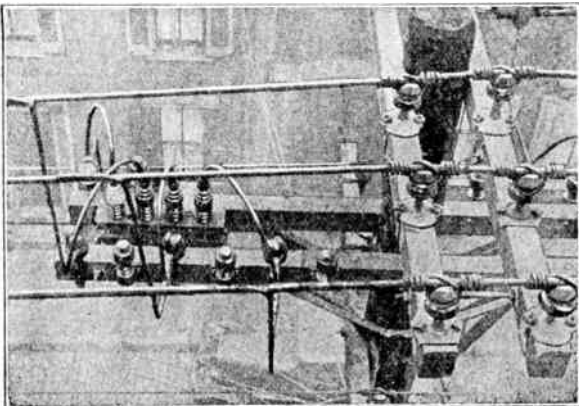
The wide machined flanges on body and lid are firmly clamped together with oil seal gasket between, using cap-screws evenly spaced all around. Suitable for upright or inverted installation. The interior of the potheads has been studied with the idea of proper balance of design, yet to provide generous creepage distances and spacings, and a large bending radius for multiple conductors. Holes for compounding are extra large and are closed with flanged and gasketed pipe plugs.

General use of porcelain of the counterbore design with gasketed flanges has proved successful in providing oil tightness. Porcelains are made by the vacuum process and are glazed inside and outside. Larger petticoats and relatively high percentage of wet to dry flashover are distinctive features.

### Pothead Shapes

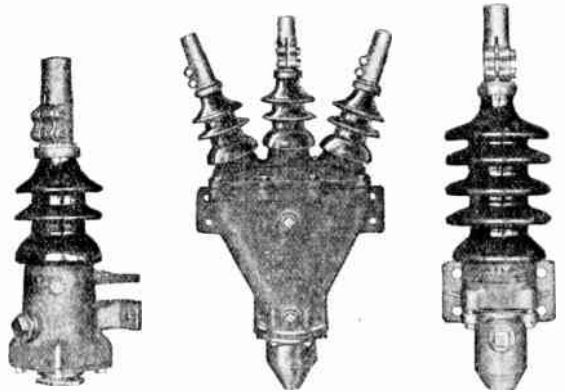


### Typical Applications of G & W Potheads in Overhead Distribution Systems



## G & W Type T Capnut Terminals

Definitely Oil-Tight Construction

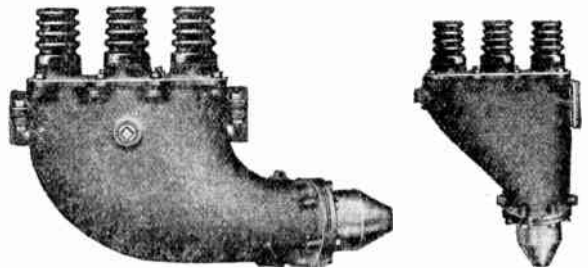


Modern cables are more highly impregnated with oil. The G & W Type T Outdoor, and Type NT Indoor Potheads are the ideal terminator for these cables as they provide a definitely oil tight seal.

Capnut terminals are extremely simple and effective. There are only 3 main parts. Non-rusting screws are used. Hoodnuts are locked and no threads are exposed. Several styles of interchangeable aerial lugs are available.

## Type N Indoor Potheads

Without Connections

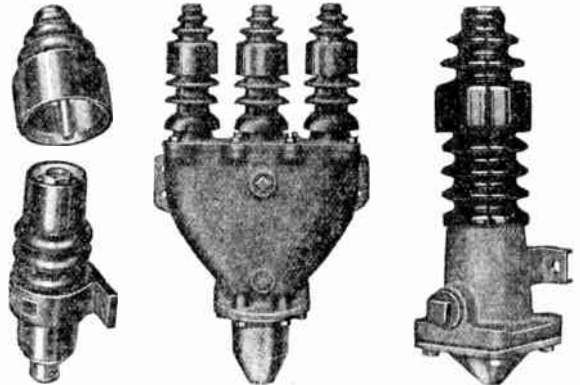


Type N Potheads are suitable for indoor use only. Standardized parts are used. Cable conductors are usually brought through the pothead without cutting and connected to devices beyond, which obviates the use of connectors.

There are several types of indoor potheads to fit various indoor installation requirements.

## G & W Disconnecting Potheads

With Porcelain Caps Enclosing Connectors

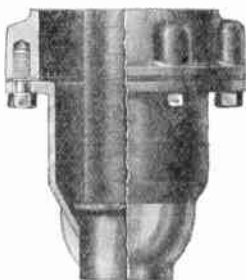


These disconnecting potheads are a simple means of giving a layout flexibility.

Disconnects and changes are made without cable cutting. Easy isolation is possible by simply lifting off the porcelain cap. No live parts exposed.

**Cable Entrance Fittings**

**Completely Interchangeable Wiping Sleeve**



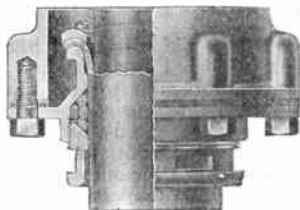
The wiping sleeve is of cast brass, suitable for making an ordinary wiped joint to lead sheathed cable.

The bottom part is conical shaped and is sawed off on the cone to fit the cable used.

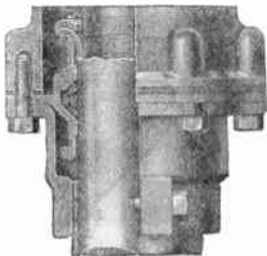
**Combination Clamping Ring and Stuffing Box**

The combination clamping ring and stuffing box gives the protective features of a wiped joint without requiring the time and skilled labor involved in wiping a joint.

It also provides a simpler installation when conduit couplings or armor clamps are used.



**Conduit Coupling**



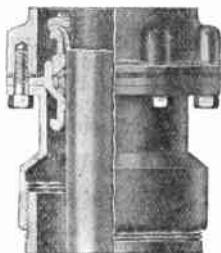
G & W conduit couplings are usually threaded to screw into standard steel or brass pipe.

They can be supplied reamed out to slip over fiber duct with set screws to hold in place.

**Armor Clamp**

The armor clamp is bolted to the pothead beneath the cable entrance.

The two halves are bolted together to firmly clamp the armored cable. Cannot be used with wiping sleeve unless specially arranged.



**Stuffing Box**



The plain stuffing box is cast with conical box and gland nut.

These parts are drilled for the cable.

This entrance is ordinarily supplied when cable diameter is not known and when couplings are used.

Also applicable to braided cable. Easily drilled out on the job.

**Plain Bushing**

The plain bushing essentially consists of a flanged plate and washer.

It can be used with multiple conductor cables or drilled with two or more separate holes for single conductor cables installed in a multiple conductor pothead.

For lead covered cables, the sheath is belled over and clamped on the plate with the washer.

For braid covered cables the holes are countersunk and provided with individual stuffing boxes for the single conductor cables.



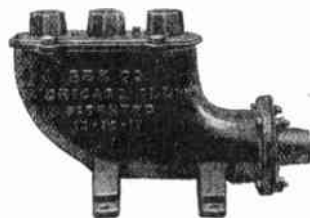
**Three E Cable End Bells**

Three E Cable End Bells, both indoor and outdoor, non-disconnecting and disconnecting, can be furnished in practically any shape and size to meet any installation condition.

When ordering, always specify the voltage of circuit, number of conductors, gauge of cable, exact overall diameter of cable, and type of joint required.



Type 10-F



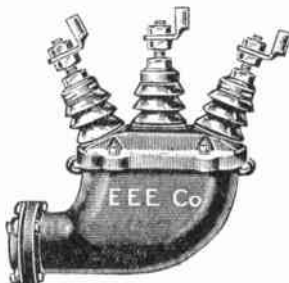
Type 19-FS



Type 21-FL



Type TC-82



Type TC-44



Type 24-F



Type 37-F



Type TC-50

Ask for Bulletin Giving Complete Information



## General Cable Unit Package Splicing and Jointing Materials



For convenience of customers, the complete materials required for splices and joints on all types of cable are put up in handy unit package form. By purchasing splicing and jointing materials in this manner, an accumulation of dead stock in the store room is prevented and the time and expense of buying the various items required for the work from more than one source is saved.

When ordering, specify number and size of conductors, thickness of insulation and lead sheath and voltage rating.

### Ozite B Filling Compounds



Ozite B is a black asphaltic compound recommended for filling joints, terminals and junction boxes operated at normal temperatures, and up to and including 25000 volts.

This compound is manufactured under an improved process which results in a product with a low carbon content. Formulated by expert cable engineers with many years of experience, this compound combines all of the desirable characteristics that a jointing or filling compound should have.

Prices and complete information upon application.

### No. 9145 Hubbard Dowel Pins

In laying multiple duct clay conduit, these dowel pins are inserted in holes provided in the ends of the lengths and thus keep adjacent lengths in proper alignment and insure the smoothness of the ducts. Made of 3/8-inch round steel, 3 inches long.



Cat. No.	Size Inches	Ship. Wt., Lbs. per 100	Price per 100
9145	5/16x3	8	\$1.30

### Diamond Screw Duct Rods

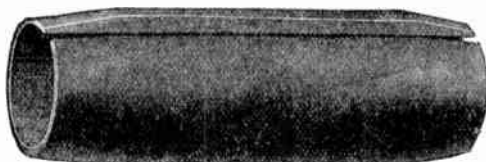
Couplings are made of government bronze. The hickory used in the shaft is selected stock, well seasoned. Threads are accurately cut to 3/4-inch U.S.S., 10 threads per inch. Rivets are countersunk. Hickory shafts are 7/8 inch in diameter.

3-Foot Length	each \$1.65
4-Foot Length	each 1.80

## National Split Tinned Copper Connectors

For Splicing Underground Power Transmission Cables

N.E.L.A. Specification



These sleeves are split their entire length to enable the hot solder to flow evenly around the cable and are covered with a coating of tin to permit easy soldering. The ends are beveled so that there will not be the possibility of the building up of a high potential occasioned by sharp corners.

Cat. No.	Size Cond.	Cable	DIAMETER, INCHES Approx. Inside Sleeve	Length Inches	Wt., Lbs. per 1000
325	12 A.W.G. Solid	.081	.086	1 1/2	5
326	10 A.W.G. Solid	.102	.107	1 1/2	5
327	10 A.W.G. Strand	.115	.120	1 1/2	5
328	8 A.W.G. Solid	.128	.133	1 1/2	6
329	6 A.W.G. Solid	.162	.169	1 1/2	8
330	6 A.W.G. Strand	.183	.189	1 1/2	12
331	5 A.W.G. Solid	.182	.189	1 1/2	12
332	5 A.W.G. Strand	.206	.211	1 1/2	15
333	4 A.W.G. Solid	.204	.211	1 1/2	15
334	4 A.W.G. Strand	.231	.237	2	20
335	3 A.W.G. Solid	.229	.237	2	20
336	3 A.W.G. Strand	.261	.265	2	25
337	2 A.W.G. Strand	.291	.297	2	25
338	1 A.W.G. Strand	.330	.337	2	40
339	0 A.W.G. Strand	.375	.378	2	50
340	00 A.W.G. Strand	.420	.423	2	65
341	000 A.W.G. Strand	.470	.475	2	85
342	0000 A.W.G. Strand	.530	.533	2 1/2	125
344	250000 C. M.	.575	.581	2 1/2	150
345	300000 C. M.	.630	.635	2 1/2	180
346	350000 C. M.	.679	.690	2 1/2	210
347	400000 C. M.	.728	.740	3	280
348	450000 C. M.	.770	.784	3	320
349	500000 C. M.	.819	.826	3	340
350	550000 C. M.	.855	.868	3	410
351	600000 C. M.	.891	.906	3 1/2	500
352	650000 C. M.	.927	.948	3 1/2	520
353	700000 C. M.	.963	.983	3 1/2	540
354	750000 C. M.	.999	1.018	3 1/2	580
355	800000 C. M.	1.035	1.052	4	620
356	850000 C. M.	1.062	1.083	4	690
357	900000 C. M.	1.092	1.115	4	750
358	950000 C. M.	1.125	1.145	4	840
359	1000000 C. M.	1.152	1.175	4 1/2	1030
360	1250000 C. M.	1.289	1.320	4 1/2	1200
361	1500000 C. M.	1.412	1.440	5	1650
362	1750000 C. M.	1.526	1.560	5 1/2	2100
363	2000000 C. M.	1.630	1.664	6	2725
364	2500000 C. M.	1.819	1.855	6 1/2	3300

### Empire Duct Rods

Furnished in 2 styles, tapered and straight. Tapered sticks are furnished when not otherwise

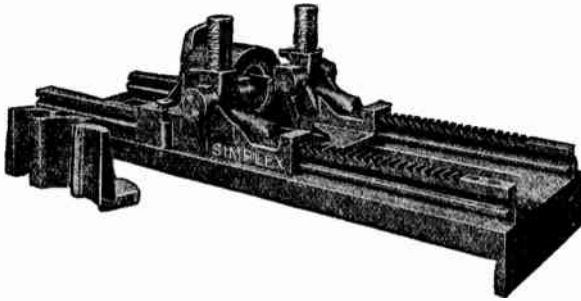


specified. They measure 1 1/4 inches at the middle of the rod and taper to 1 inch at coupling. Straight sticks are furnished of uniform diameter 1 inch throughout.

Couplings are malleable iron. Ends are interchangeable. Axles are machined from brass rod, solid head and shouldered on coupling. Wheels are machined at hub to fit axle and shaped to conform to curve of duct. The rod is made of best selected straight grain well seasoned hickory, tapering to 1 inch at coupling.

Length	..... feet	3	4
Price, with Wheels	..... each	\$1.45	\$1.60
Price, without Wheels	..... each	1.25	1.40

Simplex Pipe Pushing Jacks



Designed for pushing pipe through the most unfavorable soil conditions without crushing or distorting it. Can be operated by 2 or 4 men, depending upon soil conditions. When solid cribbing or blocking is difficult to obtain, it is then possible to hold the jack against the back pressure with one lever, while the other lever is being operated.

The duplex levers or sockets can be operated singly, alternately or together, depending on size of pipe, soil conditions and cribbing.

Each size of pipe requires a set of tapered jaws, as perfect gripping is necessary to avoid crushing the pipe.

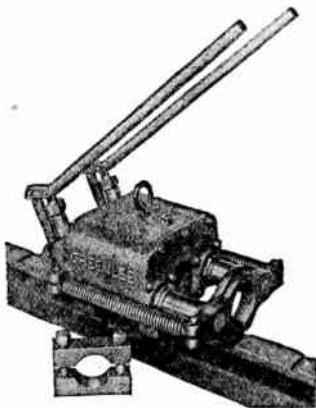
Furnished complete with one set of tapered jaws, two 1 1/4 x 42-inch steel lever bars and two 2-inch steel pipes for extending lever bars (5 feet long for No. 332 and 7 feet long for No. 334). Specify size tapered jaws required.

No.	Each	Extra Jaws per Set	Handles Pipe Diameter, Inches	Weight Pounds
332	\$110.00	\$12.00	3/4, 1, 1 1/4, 1 1/2 and 2	198
334	150.00	15.00	2, 2 1/2, 3, 3 1/2 and 4	305

Simplex Special Pilots

Size... inches	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Weight... pounds	1	1 1/4	3	5	7 1/2	10	11 1/2
Price... each	\$.75	1.00	1.25	1.75	2.50	2.75	3.00

No. 790 Greenlee Hydraulic Pipe Pushers



Eight operating speeds are available by changing location of rear pin in each lever. This gives various pressures, ranging from 6500 to 40000 pounds. One man can exert maximum pressure by pumping left-hand lever slow speed position. The other pressures and speeds are obtained by various combinations, using right or left-hand lever or both together.

Pipe can be pushed faster with this machine because it is only necessary to change pipe clamps every 4 to 7 feet, depending on length of rail used. Once

rail has been set in position, after being bolted to cross skids or long plank and supported by wood cross member to prevent creeping, setting is complete. Pusher can be run up and down rail as many times as necessary without changing setting.

Can be converted from a pipe pusher into a pipe puller by reversing it on the rail.

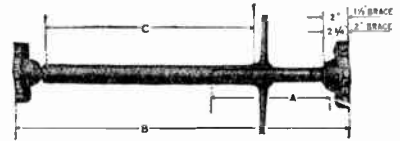
Capacity, 3 inch and smaller pipe. Equipment, in addition to rail, consists of a clamp for 1 1/4, 1 1/2, 2, 2 1/2 and 3-inch pipe, backing plate and pipe support casting.

Weight, exclusive of rail, 150 pounds.

No. 790, with 5 1/2-Foot Rail for 4-Foot Push...	each	\$275.00
No. 790, with 6 1/2-Foot Rail for 5-Foot Push...	each	280.00
No. 790, with 7 1/2-Foot Rail for 6-Foot Push...	each	285.00
No. 790, with 8 1/2-Foot Rail for 7-Foot Push...	each	290.00

For shorter or longer rails than standard deduct or add \$5.00 per foot.

Simplex Steel Trench Braces



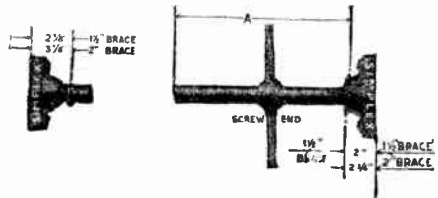
Simplex Trench Braces provide a safe, practical and economical bracing on all trench jobs. Ball and socket joints at each end permit quick adjustment and tight gripping at all angles. Once placed, a few turns of the screw handle fasten the brace tightly against the sheeting. In trenches that contain sandy soil or water, there is a tendency for sheeting to become loose and a few additional turns of the screw handle secure again a firm bracing.

Screws are steel and fittings malleable iron.

Can be unscrewed and used over and over. Adapted to any width of trench by substituting a different size tubing or pipe for that furnished and drilling a hole at one end for the insertion of a cotter pin.

No.	Pipe and Screw Diam.	DIMENSIONS, INCHES			Safe Extension of Screw	Weight Pounds per Dozen	Price per Dozen	
		Screw A	Brace Closed B	Brace Open C				
1	1 1/2	10	16	22	8 1/2	6	190	\$46.00
2	1 1/2	12	18	25	10 1/2	7	198	46.00
3	1 1/2	14	21	30	13 1/2	9	215	48.00
4	1 1/2	14	24	33	16 1/2	9	224	48.00
5	1 1/2	16	27	37	19 1/2	10	240	52.00
6	1 1/2	16	30	40	22 1/2	10	246	52.00
7	1 1/2	18	36	47	28 1/2	11	270	54.00
8	1 1/2	18	42	53	34 1/2	11	285	56.00
9	1 1/2	18	48	58	40 1/2	10	300	58.00
10	2	18	36	46	26	10	517	102.00
11	2	18	42	52	32	10	538	104.00
12	2	18	48	58	38	10	560	106.00
13	2	18	54	64	44	10	590	108.00
14	2	18	60	70	50	10	604	110.00

Simplex Trench Brace Fittings



Simplex Trench Brace Fittings are furnished to contractors who wish to put on pipe to suit conditions. The addition of a piece of standard gas pipe, cut to the required length, with a small hole drilled in one end to receive a cotter pin, completes the brace.

The cotter pin may be removed and shorter or longer pipe substituted, to make the brace suit any width of trench desired.

In close quarters, where the regular lever nut cannot be used to advantage, a special lever nut with 3 holes to fit a 1-inch rod can be furnished at no extra charge.

Screw is steel and fittings malleable iron.

No pipe is furnished.

No.	Diameter Screw Inches	Length Screw A Inches	Safe Extension of Screw Inches	Weight Pounds per Dozen	PRICE, PER DOZEN	
					Complete	Screw Ends Only
15	1 1/2	10	6	165	\$40.00	\$30.00
16	1 1/2	12	7	175	40.00	30.00
17	1 1/2	14	9	180	42.00	32.00
18	1 1/2	16	10	190	44.00	34.00
19	1 1/2	18	11	196	46.00	36.00
20	2	18	10	415	90.00	66.00



## Reliable Single Eye Cable Grips

Hard Wire



Duplex hard tough wire grip for attaching pulling line to the end of a cable. Resists wear in rough, sandy conduits. Large sizes used on aerial cable.

Cat. No.	Size Inches	For Cable Diam. Inches	Cat. No.	Size Inches	For Cable Diam. Inches
802	3/4 x 22	3/4 to 7/8	812	3/4 x 30	3/4 to 7/8
803	1 x 22	1 to 1 1/8	813	1 x 30	1 to 1 1/8
804	1 1/2 x 22	1 1/2 to 1 7/8	814	1 1/2 x 30	1 1/2 to 1 7/8
805	2 x 22	2 to 2 3/8	815	2 x 30	2 to 2 3/8
806	2 1/2 x 30	2 1/2 to 2 7/8	816	2 1/2 x 45	2 1/2 to 2 7/8
807	3 x 30	3 to 3 3/8	817	3 x 45	3 to 3 3/8
808	3 1/2 x 30	3 1/2 to 3 7/8	818	3 1/2 x 45	3 1/2 to 3 7/8

## Reliable Single Eye Cable Grips

Soft Wire



Soft wire grips with soft eyes for attaching pulling line to end of cable.

Soft eye slips easily through aerial rings.

Cat. No.	Size Inches	For Cable Diam. Inches	Cat. No.	Size Inches	For Cable Diam. Inches
822	3/4 x 24	3/4 to 7/8	832	3/4 x 36	3/4 to 7/8
823	1 x 24	1 to 1 1/8	833	1 x 36	1 to 1 1/8
824	1 1/2 x 24	1 1/2 to 1 7/8	834	1 1/2 x 36	1 1/2 to 1 7/8
825	2 x 24	2 to 2 3/8	835	2 x 36	2 to 2 3/8
826	2 1/2 x 24	2 1/2 to 2 7/8	836	2 1/2 x 36	2 1/2 to 2 7/8

## Reliable Double Eye Luffing Cable Grips



Used for pulling slack or removing old cable. Shortest body permits longest pull in cramped manhole. Pull is evenly distributed on all wires giving long life.

Cat. No.	Size Inches	For Cable Diam. Inches	Cat. No.	Size Inches	For Cable Diam. Inches
842	3/4 x 18	3/4 to 7/8	852	3/4 x 24	3/4 to 7/8
843	1 x 18	1 to 1 1/8	853	1 x 24	1 to 1 1/8
844	1 1/2 x 18	1 1/2 to 1 7/8	854	1 1/2 x 24	1 1/2 to 1 7/8
845	2 x 18	2 to 2 3/8	855	2 x 24	2 to 2 3/8
846	2 1/2 x 18	2 1/2 to 2 7/8	856	2 1/2 x 24	2 1/2 to 2 7/8
847	3 x 18	3 to 3 3/8	857	3 x 24	3 to 3 3/8
848	3 1/2 x 18	3 1/2 to 3 7/8	858	3 1/2 x 24	3 1/2 to 3 7/8

## Reliable Double Eye Split Cable Grips



Used for pulling slack in working cables. Can be attached and removed without cutting cables. Strong hooks which are easily fastened and unfastened eliminate trouble of lacing grip with rawhide. Designed so that less than half as many hooking operations are necessary to connect the two sides of grips as if a conventional hooking scheme were used.

Cat. No.	Size Inches	For Cable Diam. Inches	Cat. No.	Size Inches	For Cable Diam. Inches
862	3/4 x 18	3/4 to 7/8	872	3/4 x 24	3/4 to 7/8
863	1 x 18	1 to 1 1/8	873	1 x 24	1 to 1 1/8
864	1 1/2 x 18	1 1/2 to 1 7/8	874	1 1/2 x 24	1 1/2 to 1 7/8
865	2 x 18	2 to 2 3/8	875	2 x 24	2 to 2 3/8
866	2 1/2 x 18	2 1/2 to 2 7/8	876	2 1/2 x 24	2 1/2 to 2 7/8
867	3 x 18	3 to 3 3/8	877	3 x 24	3 to 3 3/8
868	3 1/2 x 18	3 1/2 to 3 7/8	878	3 1/2 x 24	3 1/2 to 3 7/8

## Klein's Furnaces

1-Gallon Capacity

Burns Gasoline or Kerosene



Sturdy construction made especially for field use.

Quick starting is ensured by multi-coil burner which is economical and vaporizes the fuel thoroughly, producing an intensely hot fire. Simple cleaning device to remove carbon deposit without taking burner apart.

Weight, 12 1/2 pounds.

No. 3010 Windshield, extra, is shipped with furnace unless otherwise ordered.

No. 3529, Pump Built in.....each \$33.50

## Shields for Klein Furnaces



Made of heavy gauge sheet steel. Top edge is rolled and bottom is reinforced with a heavy ring.

All joints welded.

Weight, 3 pounds.

For furnace No. 3529.

No. 3010.....each \$4.00

## No. 3000 Pumps for Klein Furnaces and Torches

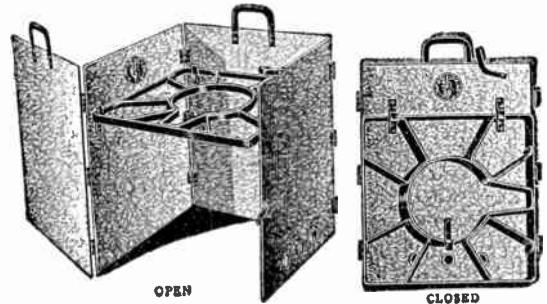


Has brass barrel and plunger.

Weight, 1/2 pounds.

No. 3000.....each \$2.50

## Klein's Folding Windshields



Made of heavy galvanized sheet steel in four leaves each 24 inches high and 18 inches wide hinged together. Hinges are securely riveted. Grate made of 3/16 x 3/4 inch steel, welded and swings on one leaf of the shield.

Grate designed so that it can be used with melting pot or the larger sizes of wax kettles.

Weight each, 40 pounds.

No. 3020, With Welded Grate.....each \$25.00

## Wrought Steel Melting Ladles

Double Lip, Extra Deep



No. ....	10	20	30	40	60	80
Size.....inches	2 1/2	3	3 1/2	4	5	6
Price.....each	\$1.00	1.20	1.40	1.60	2.10	2.40



**B & L Star Brand Pulling-In Frames**



The pulling-in frame is constructed to help install cable in underground ducts.

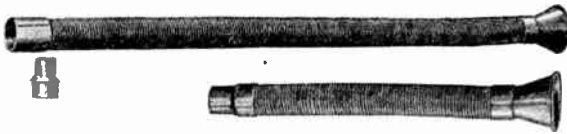
The sheave support consists of two 13-foot sections of 6-inch steel channels, fastened together at each end by two sections of 4-inch steel channels. Each 13-foot section is provided with 24 holes on 6-inch centers in order to allow the two sheaves to be adjusted to the proper position on the sheave support for any cable installation.

Two sheaves are used with each sheave support, one large aluminum sheave and a small steel sheave which have diameters of 20 inches and 5 3/4 inches respectively. The diameter and groove of the large sheave are of sufficient size to allow a cable to be pulled over it, without harming the cable sheath, when this procedure is necessary to obtain sufficient cable in the manhole for splicing. An important feature is that each sheave is provided with a Metaline bushing which makes the use of a lubricant unnecessary.

Approximate weight, 260 pounds.

Prices and further information upon application.

**B & L Star Brand Cable Feeders**



Designed to protect and guide underground cables into ducts particularly in congested manholes.

Feeder consists of a 7-foot and a 3-foot length of 4-inch galvanized flexible metal hose which may be joined to make an uninterrupted length. Standard feeder will fit 3 1/4-inch ducts.

A nozzle extension is provided to reduce the opening sufficiently to enter the end of smaller ducts. Special nozzles can be furnished for various size ducts. Extra 3-foot lengths of hose may be obtained for increasing the length of the cable feeder for use in large or deep manholes.

Approximate weight, 100 pounds.

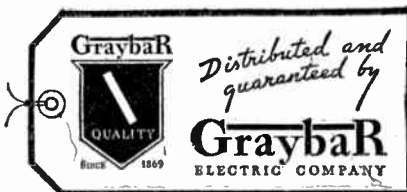
**Cable Sheave and Shackle**



The cable sheave and shackle may be used in place of the pulling-in frame when it is possible or advisable to locate the rear of the truck directly over the manhole. The device is attached to the manhole pulling iron and the winch line goes over a roller or sheave at the rear of the truck then down and under the cable sheave and shackle and thus into the duct. The sheave is made of special aluminum alloy for light weight, 20 inches in diameter, with a groove large enough to take a 3 1/2-inch cable. The hook is drop-forged.

Approximate weight, 51 pounds.

Prices and further information upon application.



**Manhole Guards**

Open, 50x50x42 in.; closed, 3 1/2x50x42 in.

Ship. wt., 43 lbs.

Price, Manhole Guards... each \$25.00



**Manhole Skids and Sheaves**

Price, 9-foot... per set \$60.00

Extra lengths, \$3.00 per foot.



**Manhole Frames and Covers**



**Square**

Cat. No.	Size, Inches		Ht. In.	Wt., Lbs. Each	Price Each
	Opening	Flange			
229	17x22	31x36	6	340	\$25.00
271	18x30	26x38	5	375	26.00
278	28x32	38x42	7 1/4	620	49.00

**Round**

202	23	36	9	540	\$30.50
204	23	36	9	450	29.00
206	23	36	9	400	27.50
208	23	35	7	350	24.00
211	23	36	6	315	22.50
212	22	30	5 1/4	265	20.00

**Diamond Manhole Cover Hooks**

This is a useful tool for the subway construction force. It is designed to easily raise a heavy manhole cover by prying the wedged point end of the hook under the groove provided in the cover for the purpose.

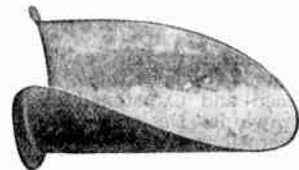
The hook is made of an excellent quality of electric tool steel suitably hardened at and adjacent to the hook to prevent its bending, and at the same time sufficiently tough to prevent breaking off.

Price... each \$1.50



**Hubbard Cable Duct Shields**

Zinc and Hot Galvanized Steel



Used to protect cable sheaths at entrance of ducts. As cable expands and contracts the wear comes on the shield rather than on the lead sheath. May be installed, if desired, after the cable is pulled in.

Cat. No.	Per 100	Material	Size, Inches		Std. Pkg.	Wt., Lbs. per 100
			Diam.	Length		
9140	\$19.20	20-Ga. Sheet Steel...	3	6	100	61
9141	19.20	18-Ga. Zinc...	3	6	100	58
9142	29.50	12-Ga. Sheet Steel...	2 5/8	9	50	170

## Hubbard Manhole Ladders

Hot Galvanized



The 6½, 8, 10 and 12-foot lengths have sides of 1½x¾x¾-inch channel and rungs of ½-inch round open hearth steel. The 14-foot ladder is made of channel 2½x½x¾-inch sides. The rungs pass through the sides and are riveted over on the outside. They are 12 inches apart spaced from the bottom rung which is placed 12 inches from the bottom of the ladder.

Standard package, 5.

Cat. No.	Length Feet	No. of Rungs	Rung Spacing Inches	Width Inside Inches	Shp. Wt., Lbs. Each	Price per 100
9111	6½	6	12	12	24½	\$419.60
9112	8	7	12	12	30	516.30
9113	10	9	12	12	38	645.20
9115	12	11	12	12	46	774.00
9117	14	13	12	12	53	903.30

## Hubbard Pulling-In Irons for Manholes

Hot Galvanized



Pulling-in irons are set into the concrete or brick walls of street vaults opposite all duct entrances to provide a convenient and strong attachment for the pulling-in blocks for installing or removing cables. They are made of ½-inch steel in accordance with the A. T. & T. Company's specifications, and are so designed as to straddle the brick.

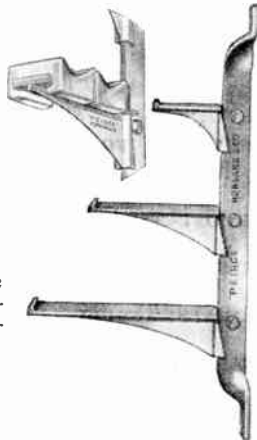
Cat. No.	Size Steel Inches	Extension from Wall Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
9119	¾	9	5	500	\$83.30
9120	¾	12	5	600	96.60

## Hubbard Locktype Cable Racks

Hot Galvanized

Racks are made of 1¾x¾-inch flat steel, with 7/8x¾-inch mounting holes, in lengths to accommodate 1 to 4 of the hooks listed.

The certified malleable iron hooks have rack attachment lugs and overlaps which prevent wobbly fits and insure minimum movement. High grade dry process grooved porcelain insulators with smooth glazed surfaces lock to the hooks.



### Racks

Cat. No.	Per 100	No. of Holes	DIMENSIONS, IN.			Shp. Wt., Lbs. per 100
			Hook Hole Spacing	Length Over All	Bolt Hole Spacing	
2281	\$66.60	1		14¾	13	225
2282	91.60	2	7	21¾	20	350
2283	108.30	3	7	28¾	27	475
2284	133.20	4	7	35¾	34	575

### Hooks

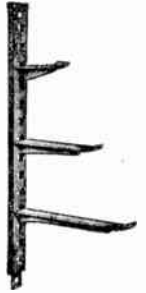
Cat. No.	Per 100	DIMENSIONS, IN.		Shp. Wt., Lbs. per 100
		Extension	Width	
2254	\$56.70	4¼	2	135
2258	71.60	8¾	2	210
2262	101.60	12¼	2	270

### Insulators

Cat. No.	Per 100	Radius for Cable Inches	Size Inches	Shp. Wt., Lbs. per 100	Price
					per 100
2122	\$18.30	1½	3x3	95	
2123	30.00	2¼	3x4	125	

## Hubbard Presteel Cable Racks

Hot Galvanized



For manhole and interior cable work.

The rack sections are made in three lengths which can be combined into almost any desired length.

These sections are made from 1½x¾x¾-inch open hearth steel channel, with ample strength to support the heaviest cables. They should be fastened to manhole walls with ½x4-inch Peirce Expansion Bolts.

### Rack Sections

Cat. No.	No. of Holes	Hole Spacing	DIMENSIONS, INCHES		Wt., Lbs. per 100	Price per 100
			Length Over All	Bolt Hole Spacing		
2124	8	1½	15	13¾	150	\$26.40
2125	14	1½	24	22½	260	47.00
2126	18	1½	30	28½	310	55.40

### Hooks

Cat. No.	DIMENSIONS, INCHES Extensions From Face of Rack	Thickness of Plate	Wt., Lbs. per 100	Price
				per 100
2131	4	1½x1¼x¾	55	\$21.70
2132	7½	1½x1¼x¾	107	30.90
2133	10	1½x1¼x¾	130	37.80

## No. 2120 Hubbard Cable Rack Insulators

Standard Type

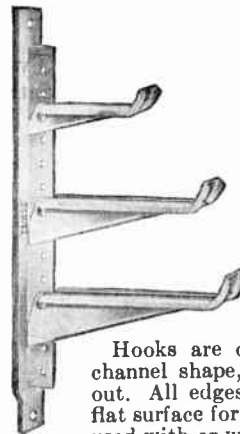


These insulators, used on Hubbard cable rack hooks, provide a smooth, well rounded surface which permits cable creepage without injury to lead sheaths. Also provide insulation between cable and rack. Width, 2¾ inches. Std. pkg., 50. Weight per 100, 100 pounds. Price, No. 2120, for 1½-Inch Cable.....per 100 \$19.80

## Hubbard Underground Cable Racks, Hooks and Insulators

For Heavy Cable Work

Hot Galvanized



Rack section is 2¼x2¼x¼-inch steel T section, offset at lower end for overlapping when combining two racks. Any desired length of cable racks can be made in this manner. Racks have ½-inch mounting hole at top and bottom and are fastened to new manhole walls with No. 2246 anchor bolt which is cemented into the wall. ½x4-inch Peirce expansion bolts are used for attaching to manholes not provided with anchor bolts.

Hooks are one-piece ¾-inch steel pressed to a channel shape, insuring uniform strength throughout. All edges are rounded and there is a smooth flat surface for the cable to rest upon. Hooks can be used with or without an insulator.

Insulators fit snugly on the cable hooks and the weight of the cable holds them in place.

### Racks

Cat. No.	No. Holes	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Hook Hole Spacing	Length Over All	Bolt Hole Spacing			
2225	14	1½	27½	25½	5	780	\$100.00
2246	Anchor Bolt-½x6-Inch.				250	74	10.80

### Hooks

Cat. No.	DIMENSIONS, INCHES		Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Width			
2231	5	2½	150	178	\$56.70
2232	9½	2½	33	337	71.70
2233	14	2½	45	502	101.70

### Insulators

Cat. No.	Radius for Cable, Inches	Width Inches	Std. Pkg.	Wt., Lbs. per 100	Price
					per 100
2121	2⅝	¾	50	110	\$21.70

# GENERAL ELECTRIC PRODUCTS



General Electric Street Lighting Equipment, Transformers, Watthour Meters, Motors and Control for standard installations are listed on the following pages. Lamps and other General Electric material are listed in other sections of this catalog. Space would not permit listing any but standard items, but full information will be furnished on any special items upon application to one of Graybar's 73 houses.

ARRESTERS: Lighting

BALANCER SETS

BRAKES: Electric

CAPACITORS

CIRCUIT BREAKERS: Air—Dead Front, Reverse Current, Underload. Oil—For Motor Service, Pole Mounted

CLOCKS: Contact Making

COMPENSATORS: Automatic for Synchronous Motors CR-7061, Hand for Synchronous Motors CR-1135

CONTACTORS: A.C. and D.C.—CR 4002 and CR 7002

CONTROLLERS: Crane and Hoist, Dial Type, Drum Type, Fire Pump, Remote Indicating Speed, Wound Rotor Motors

CONVERTERS: Frequency, Synchronous

COUPLINGS

CUTOUTS: Primary

DEMAND METERS

ELECTRIC FOUNTAINS

FUSES: D & W

FUSE BOXES FOR CONTROLLERS CR-2901

GENERATORS: A.C. and D.C., Belted, Direct Connection

HEATING: Industrial, Devices, Cartridge Units Cast-In Hot Plates, Immersion Heaters, Metal-Melting Pots, Sheath-Wire Heating Units

INSTRUMENTS: Demand Indicators, Frequency Meters, Ground Detection, Microammeters, Milliammeters, Millivoltmeters, R.V.A. Meters

LAMPS: Mazda

LIGHTING: Street (Novalux)

MOTORS: A.C.—Built In, Explosion Proof, Multispeed, Phonograph, Slip Ring, Totally Enclosed; D.C.—Adjustable Speed, Enclosed, Ventilated, Protected; Gear—Fractional Horsepower, Special Purpose

MOTOR: Generator Sets—Battery Charging, Booster, Projector

REACTORS

RECTIFIERS: Copper Oxide

RECTIFIERS: Tungar & Bulbs

RELAYS

RESISTORS FOR D.C. AND WOUND ROTOR Motors

RHEOSTATS: Field, Speed Regulating

SELSYN DEVICES

SIGNALS: Traffic

STARTERS: Drum Type CR-3900, Definite Time, Dust Tight, For Slip Ring Motors CR-1028, For Synchronous Motors, Resistor Type CR-1042, Reversing

SWITCHES: Dial Type, Emergency Throw-over, Jack Type Disconnecting, Knife, Limit, Master, Motor Circuit, Motor Speed Changing, Overload Protective, Primary, Short Circuiting

THERMOSTATS

VALVES: Electrically Operated

WIRE: Deltabeston



## American Concrete Lighting Standards

American Concrete Lighting Standards are manufactured by the centrifugally-spun process.

### Curing

Spun-crete standards are cured for 28 days by a steam process.

During curing the most favorable conditions are obtained by maintaining the correct temperature in the curing room and regulating the amounts of water taken up by the product.

Careful curing insures the ultimate in strength, wear-resistance, bond-strength, and water-tightness.

When emergency shipment of less than 30 days is required, Spun-crete standards of equal strength may be obtained in 7 days by the use of a high early strength cement at an increased cost.

### Core

When desired, a 2-inch galvanized pipe core may be

obtained in the finished standard at a nominal increase in cost.

### Finish and Aggregate

Flat surfaced standards are water-polished giving a glossy smooth surface showing the beauty of the granite aggregate.

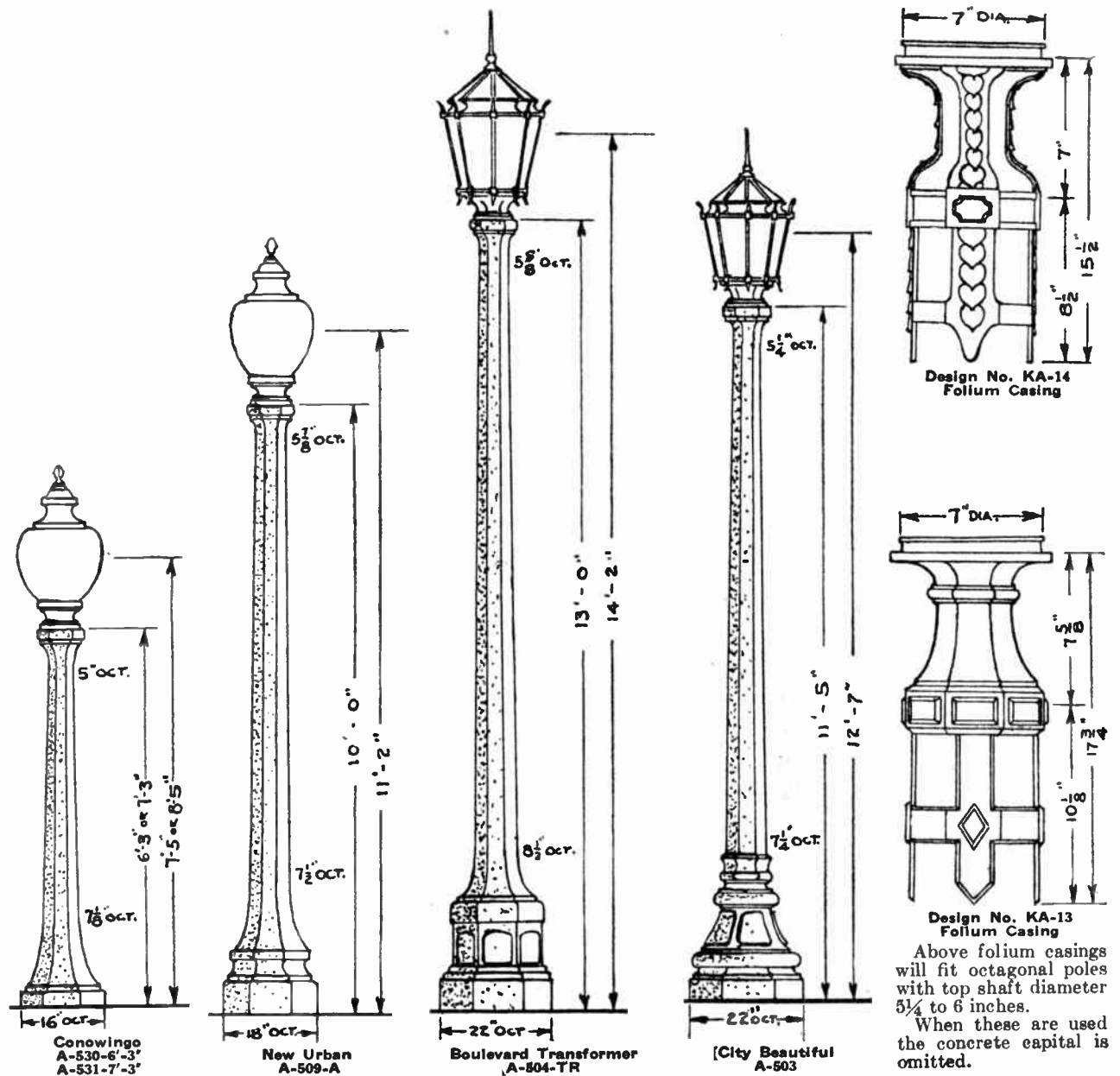
Standards having round, fluted or irregular surfaces can not be water-polished but are acid-etched.

Flat surfaced standards may also be acid-etched at no increased cost.

Spun-crete standards are furnished in black and white aggregate as standard.

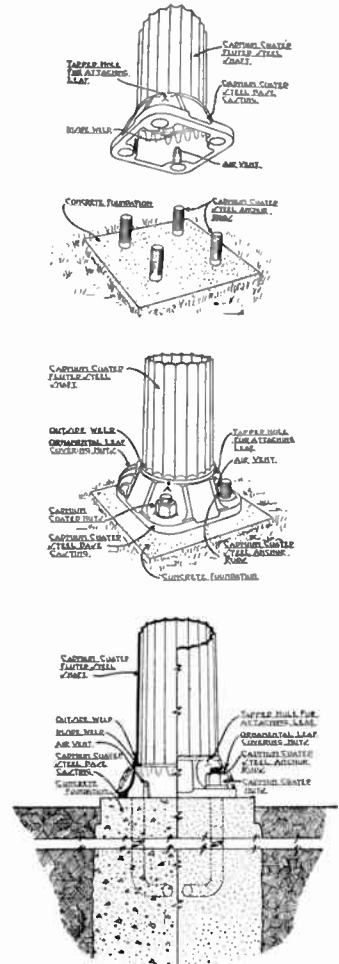
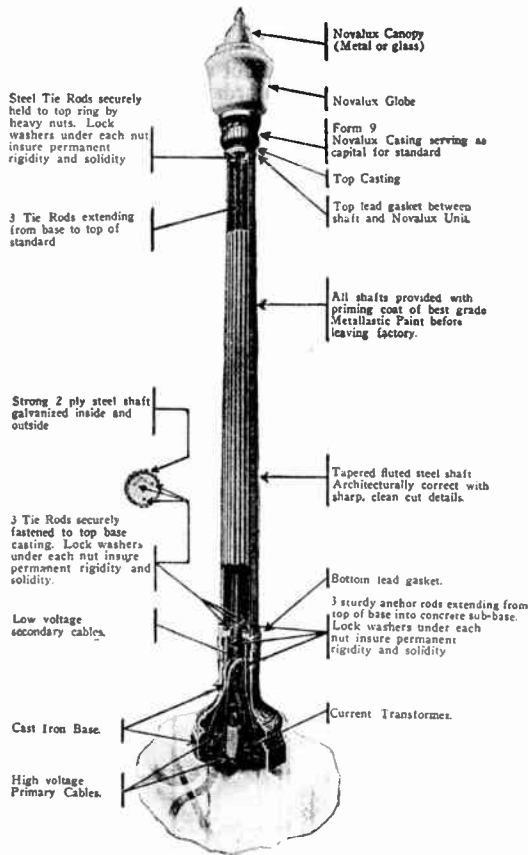
Red and white aggregate can be furnished at no increase cost upon request.

Green and white aggregate can be furnished at a slightly increased cost.



Complete Information and Prices Furnished on Receipt of Specifications

Union Metal Steel Lighting Standards



Sectional View of Union Metal Fluted Steel Pole Showing Method of Anchorage for Heavy Gauge Shaft Construction

Light Weight Shaft Construction

Union Metal lamp standards are built like a modern skyscraper. Three sturdy anchor rods extend from the top of the ornamental base into the concrete sub-base and securely anchor the lower section of the standard to the ground.

Likewise every standard is provided with three steel tie rods, passing from the base through the shaft and into the topmost part of the capital or head.

The scientific tripod or steel truss construction coupled with the pressed metal shaft provides the important engineering requirements of great strength, light weight, and low center gravity. In case of severe impact they will bend but will not break and fall heavily to the ground.

Standards are made with shafts of two or three thicknesses of No. 22 U. S. gauge copper bearing steel. Double lock-seams. Plies pressed firmly together with no solder or

rivets. Seams rolled on the inside so that both inside and outside of pole are smooth. Galvanized with lead and zinc spelter both inside and out. Painted inside and out with best grade of metallastic paint.

Shafts available with outer lamination of 16 ounce cold rolled sheet copper, fluted and pressed into place at an increased cost.

Available in natural copper, verd-antique, oxidized copper or statuary bronze finish. Standards available with bronze castings at an increased cost.

Anchor rods, galvanized steel, vary from 5/8 inch to 1 1/4 inches depending upon size of standard. Tie rods vary from 1/2 to 5/8 inch depending upon size of standard. Lock washers are used to prevent loosening of nuts due to service vibration.

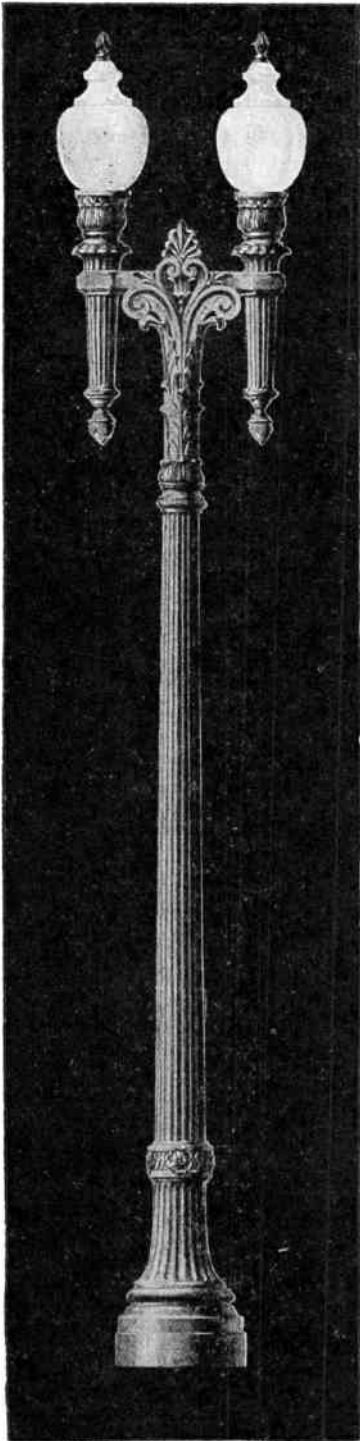
Heavy Gauge Shaft Construction

Union Metal steel standards are also furnished employing heavy gauge steel shafts, fabricated from highest grade open hearth steel.

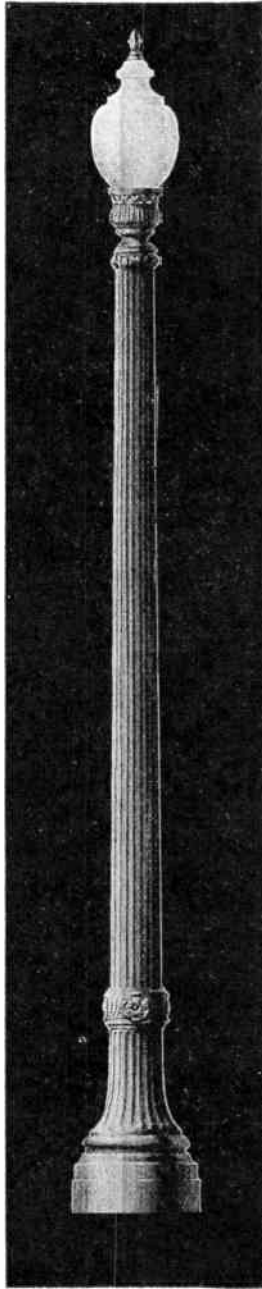
The thickness depends upon the strength requirements. A heavy cast steel base of special analysis is attached to the lower end of the shaft with a double electric weld.

Bulletins Giving Complete Information Gladly Furnished on Application

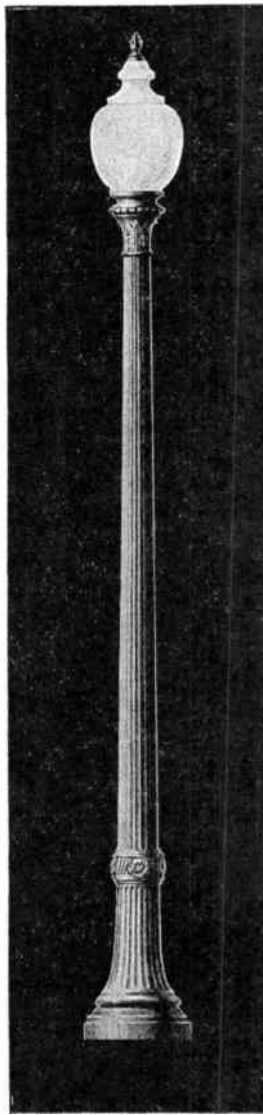
## Union Metal Steel Lighting Standards Columbian Design



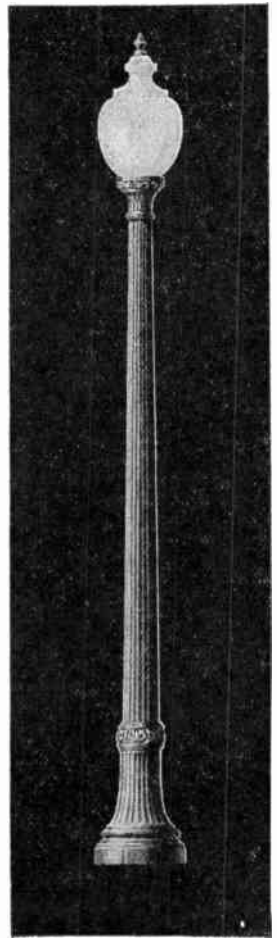
Design No. 9014



Design No. 2515



Design No. 807

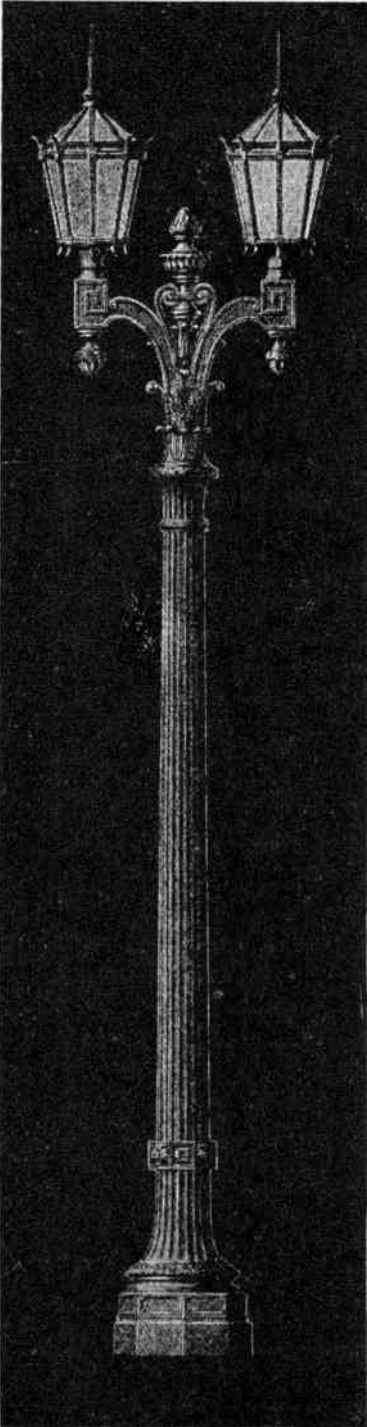


Design No. 1571

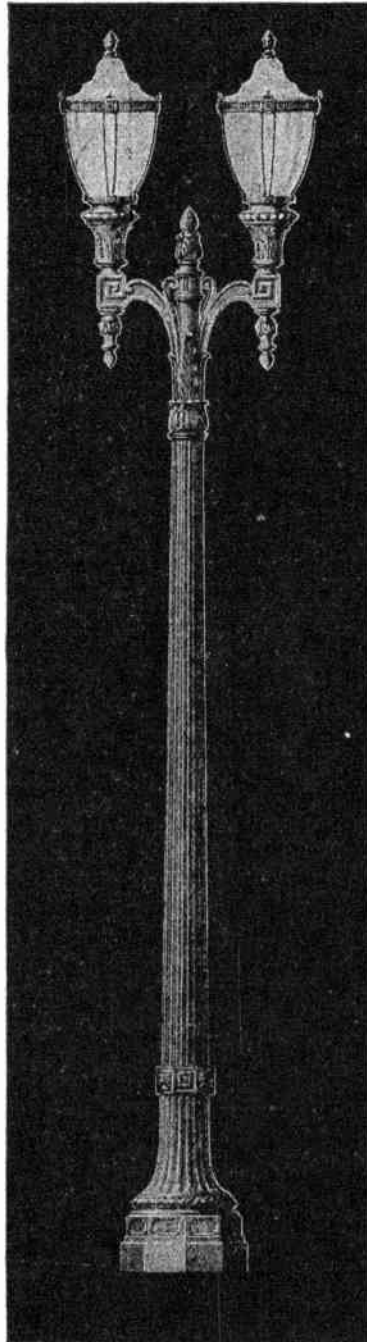
Bulletins Giving Complete Information Gladly Furnished on Application



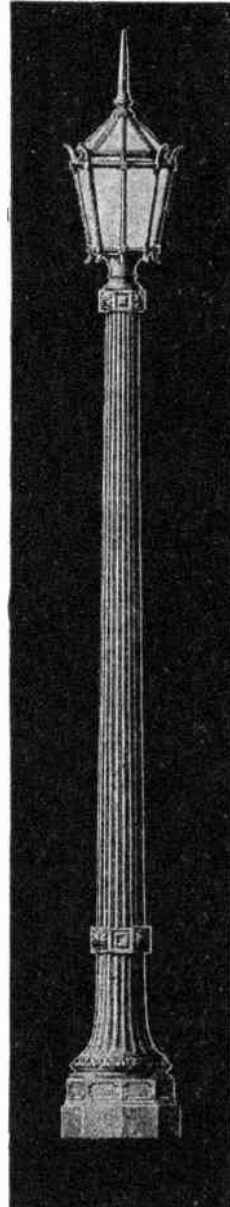
Union Metal Steel Lighting Standards  
Metropolitan Design



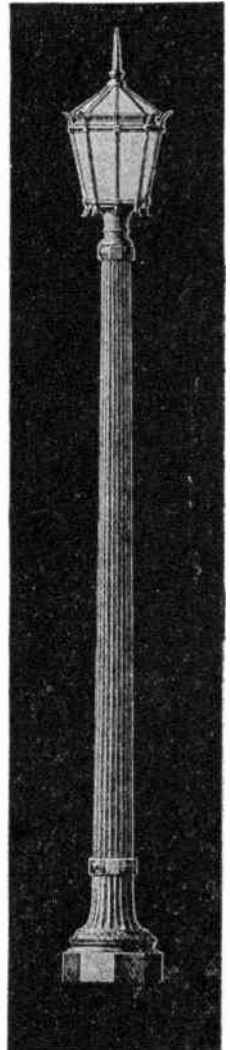
Design No. 1193



Design No. 8182



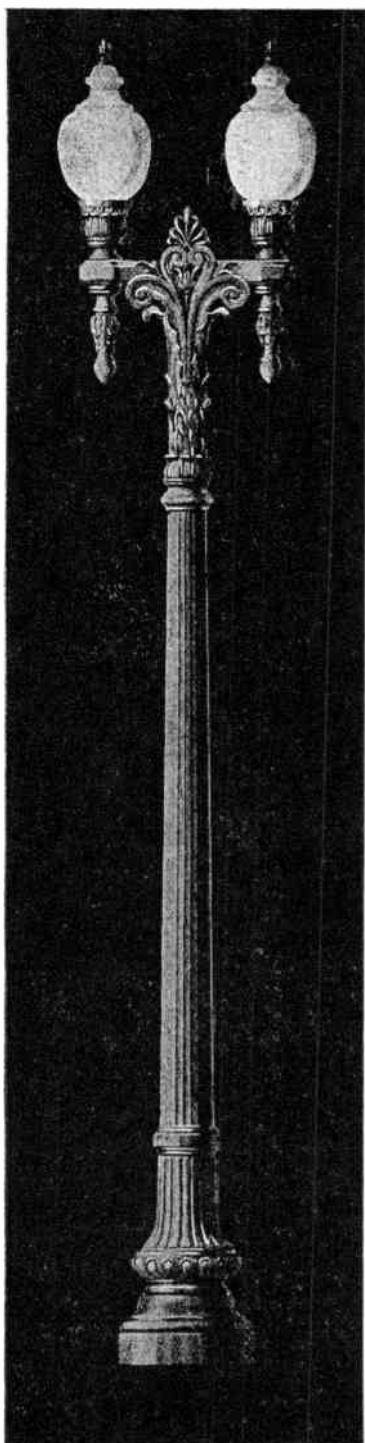
Design No. 1195



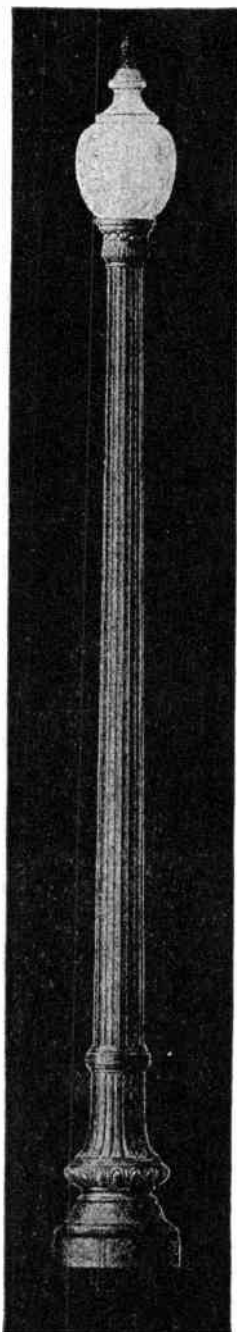
Design No. 1194

Bulletins Giving Complete Information Gladly Furnished on Application

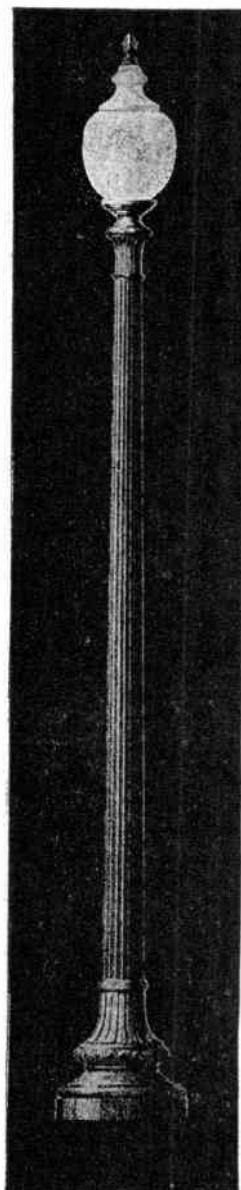
Union Metal Steel Lighting Standards  
National Design



Design No. 9027



Design No. 1926



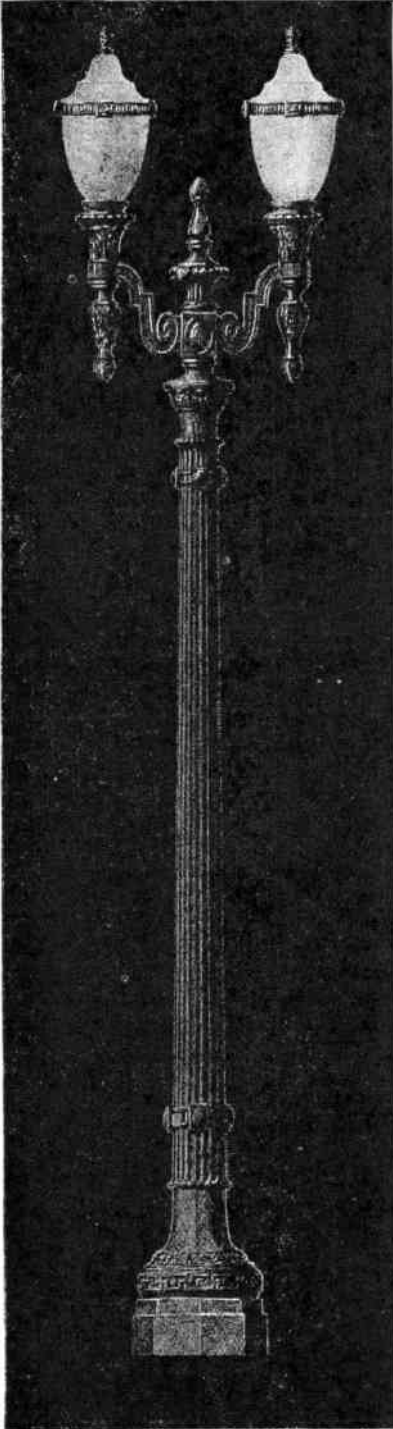
Design No. 1925



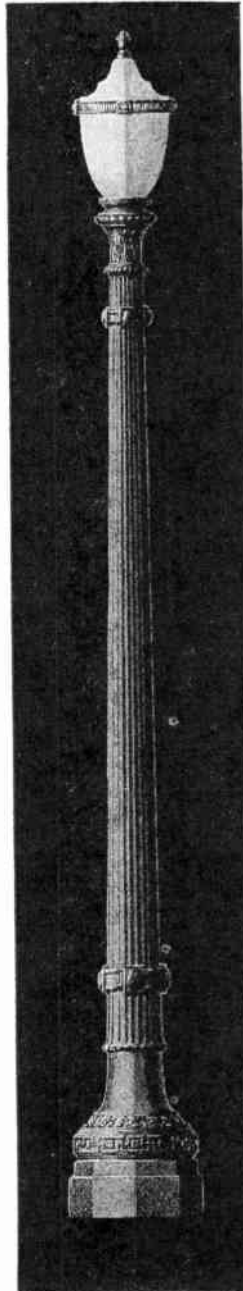
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Bulletins Giving Complete Information Gladly Furnished on Application

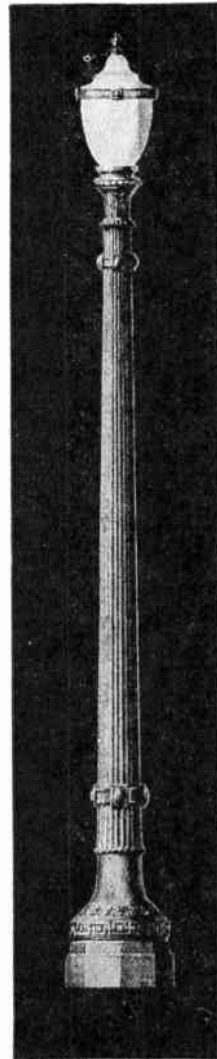
Union Metal Steel Lighting Standards  
Pacific Design



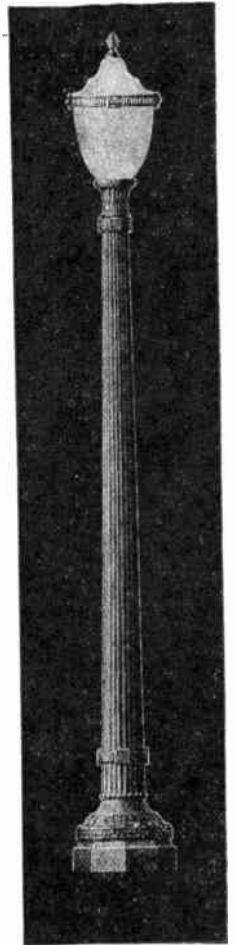
Design No. 1747



Design No. 1775



Design No. 3534

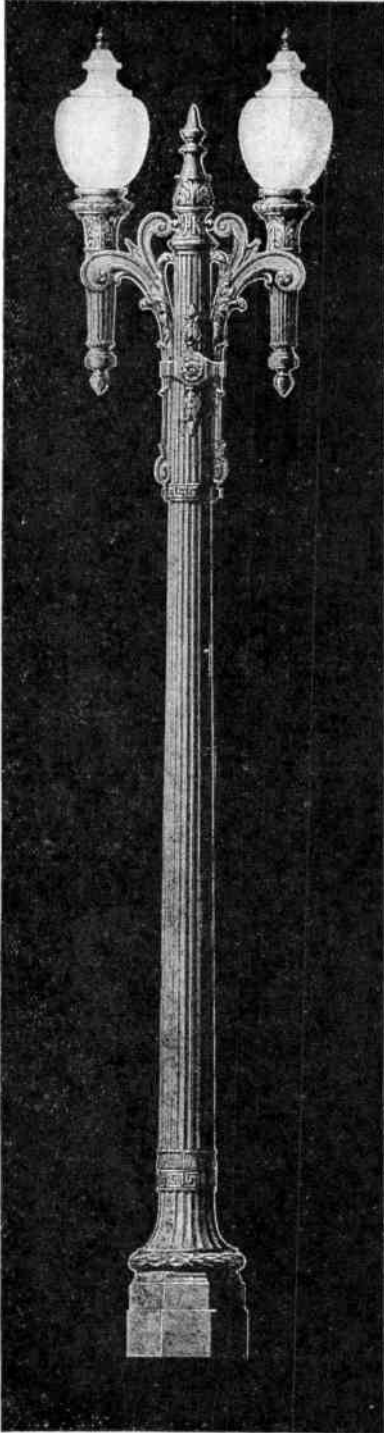


Design No. 2000

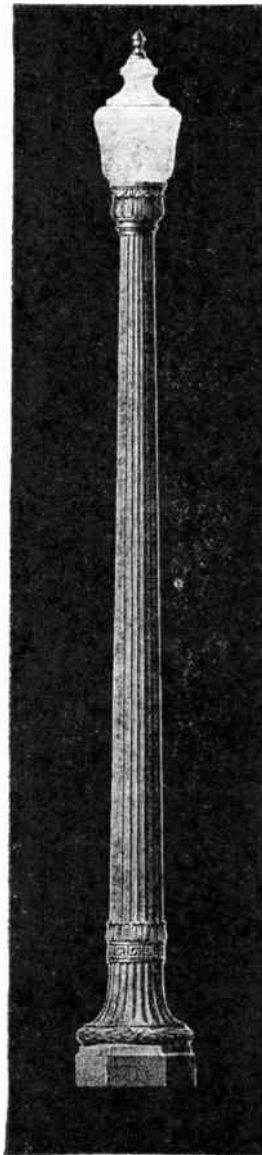
Bulletins Giving Complete Information Gladly Furnished on Application



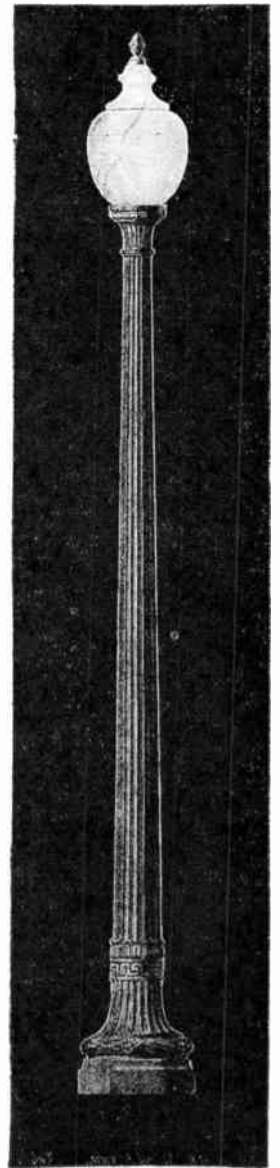
Union Metal Steel Lighting Standards  
Empire Design



Design No. 1655



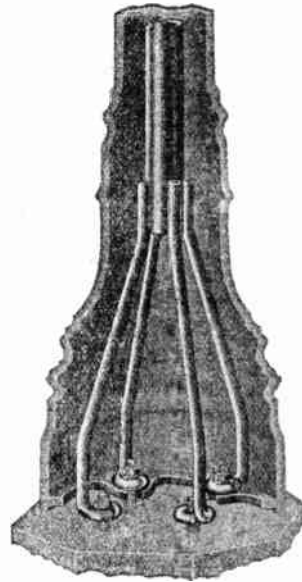
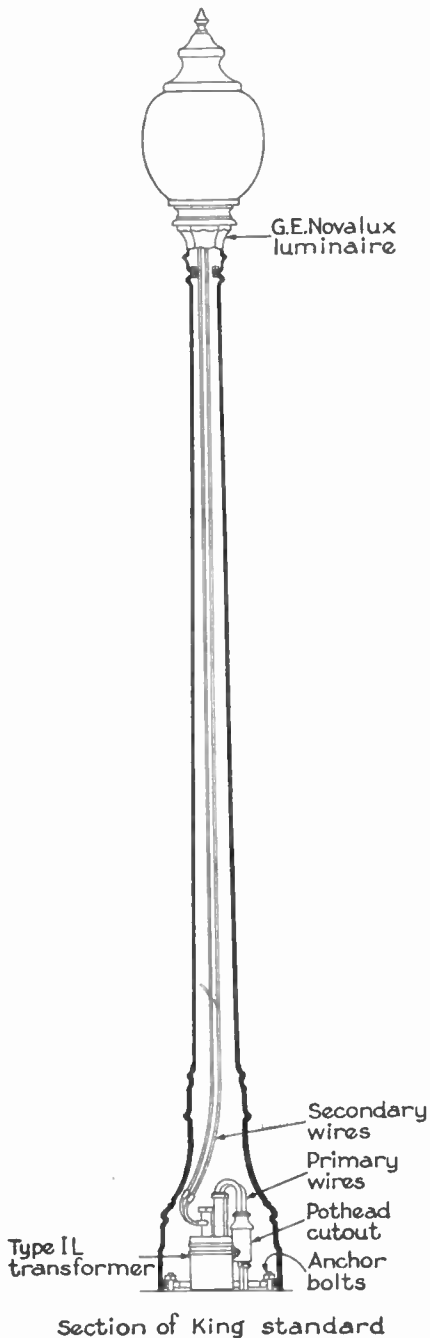
Design No. 792



Design No. 2216

Bulletins Giving Complete Information Gladly Furnished on Application

## King Ferronite Cast Iron Lighting Standards



Designs available in groups of similar designs to meet all requirements in one locality.

#### Construction

Made from aluminum patterns in iron flasks.

Ferronite is a special composition of greater strength than ordinary cast iron.

Ferronite insures all delicate details of design to be smooth, clean cut, deep and perfect. The inside of standards is as smooth as the outside which prevents damage to cable insulation.

Wall thickness of standards is uniform and weight is distributed uniformly which increases strength of standards.

Standards are given a shop priming coat of special hard skin paint. Final finish is to be put on by customer after installation.

Door in base of standard permits ready access for anchoring, making electrical connections, installing transformers, testing and inspecting.

#### Safety Spiders

Used to prevent and limit the fall of standard on violent impact.

Recommended on heavily traveled thoroughfares.

Provided at increased cost on special order only, where not listed.

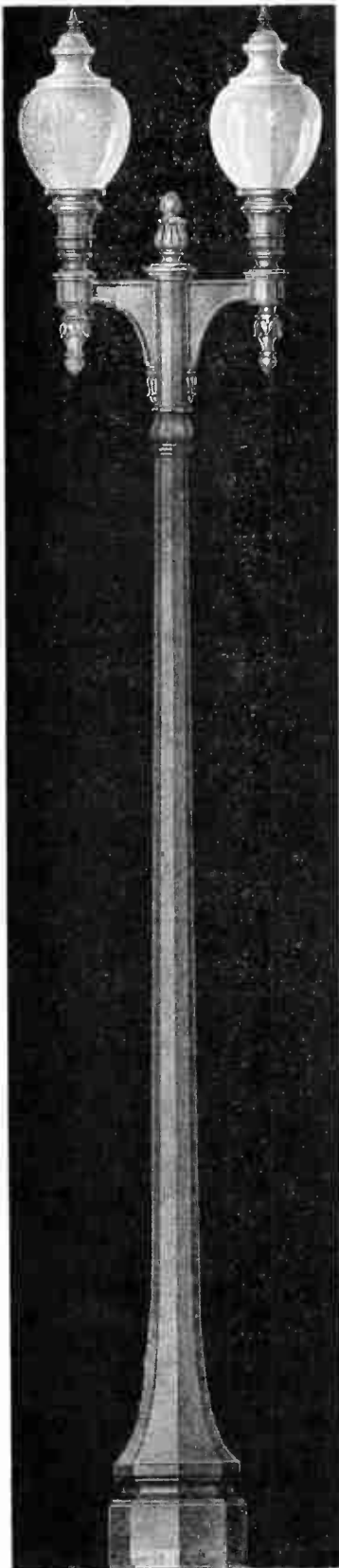
Pipe reinforcement furnished on some designs.

Safety spider available to permit use of transformers in base of standard.

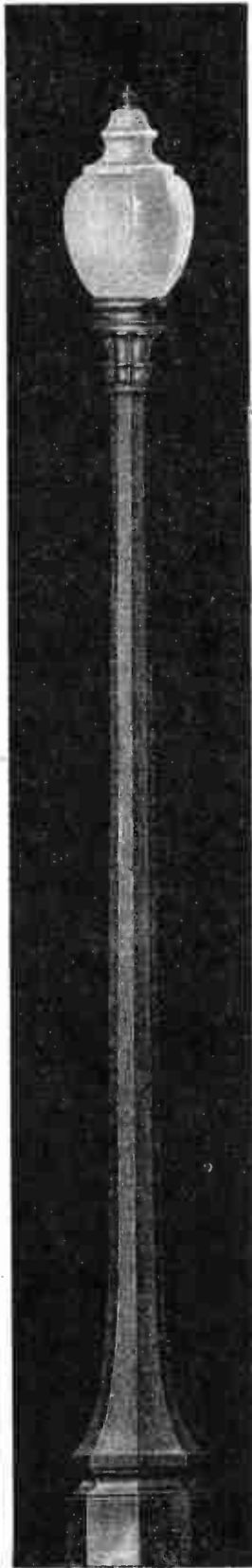




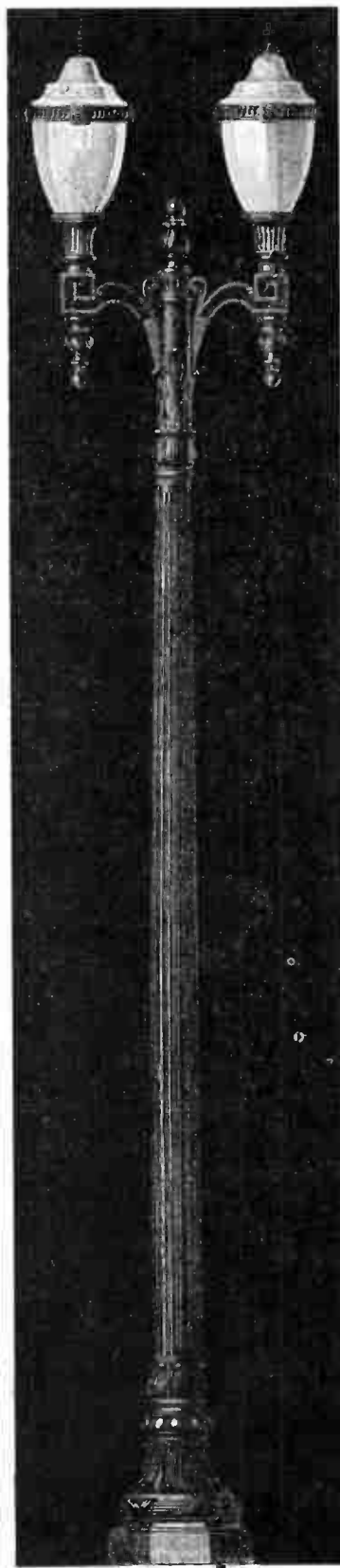
King Ferronite Cast Iron Lighting Standards  
Community Design                      Georgian Design



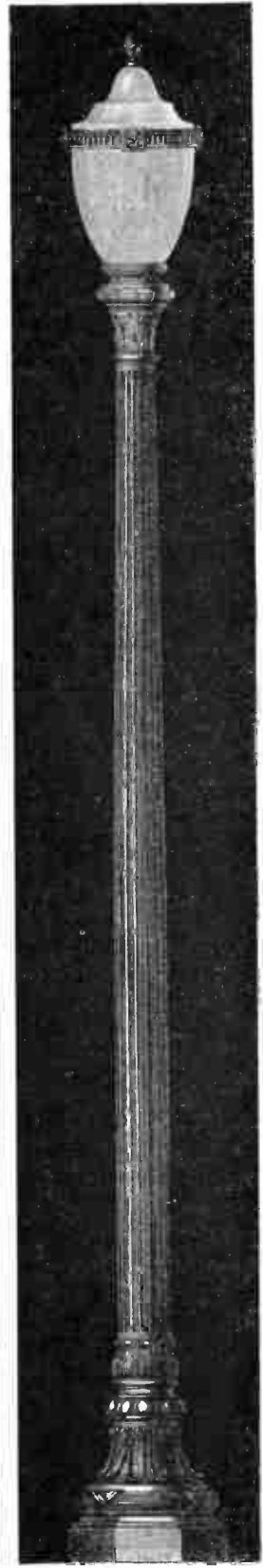
Design Nos. K-129,  
K-1842



Design Nos. K-16, K-17,  
K-77, K-79, K-1559



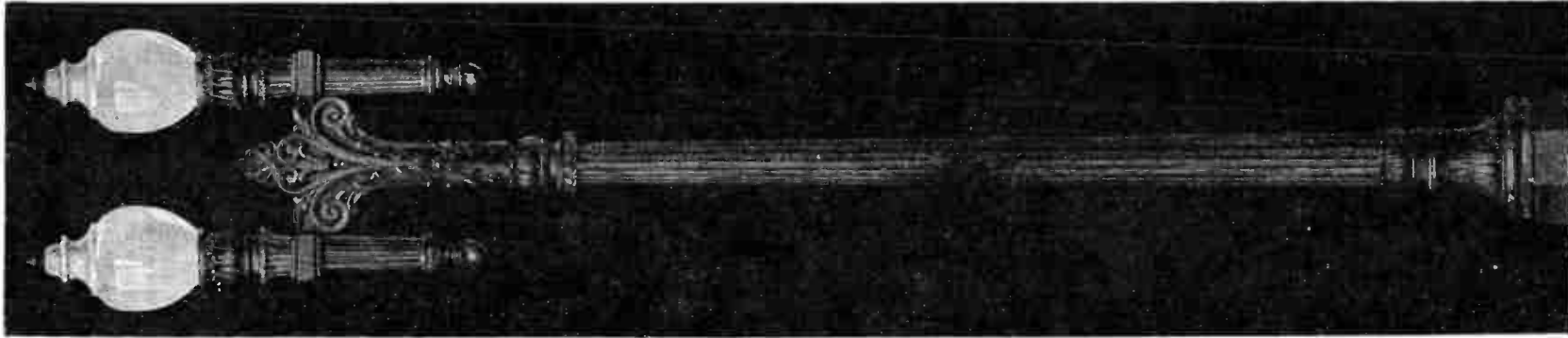
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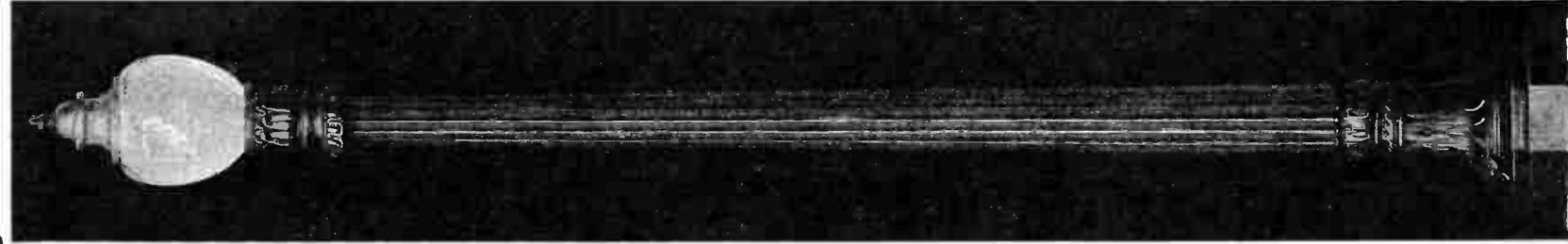
Design Nos. K-85, K-86

Bulletins Giving Complete Information Gladly Furnished on Application

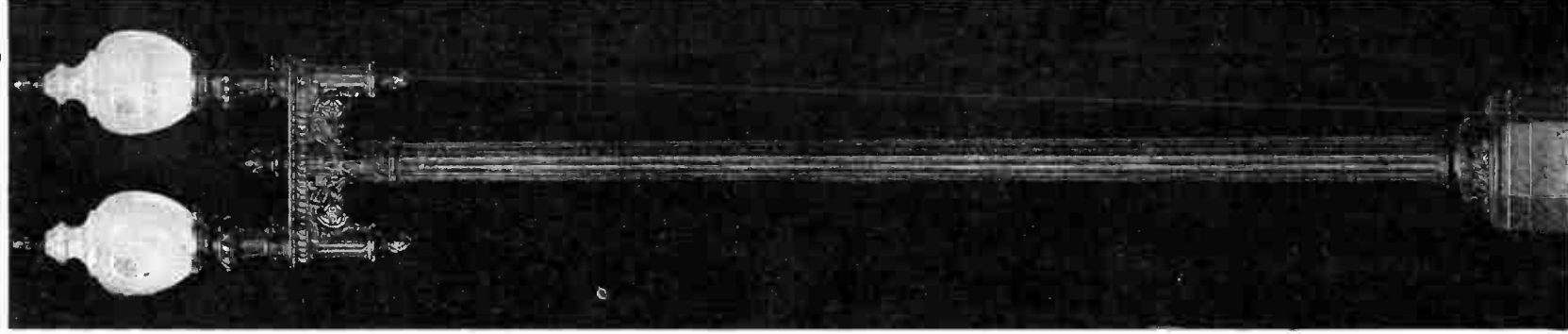
## King Ferronite Cast Iron Lighting Standards Washington Design



Design No. K-70



Design Nos. K-73, K-145,  
K-168, K-1666



Design No. K-101



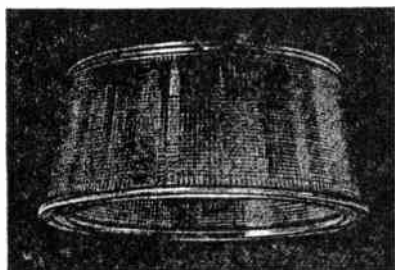
Design No. K-103

Bulletins Giving Complete Information Gladly Furnished on Application

**G-E Holophane Refractors**

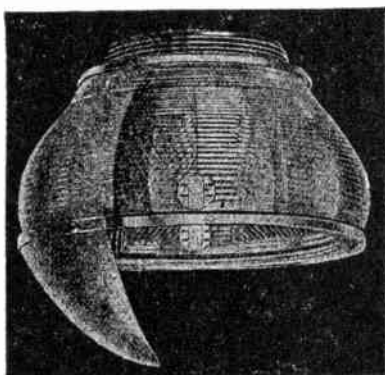
These refractors conserve the light in the upper hemisphere, which for some classes of lighting is not required, and redirects it to the street where it will be useful.

**Band Refractors**



For use where a totally enclosed unit is not desired.

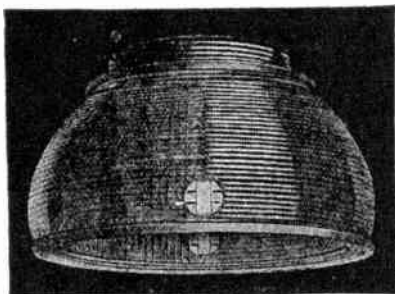
**Sym-etric Dome Refractors**



**Dome Refractor with Light Shield on House Side**

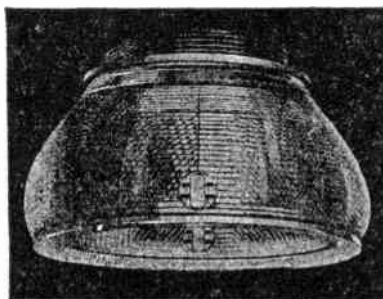
For use within an enclosing globe. Light shields for attaching to all types of dome refractors are available. These shields reduce the light on the house side.

**A-Sym-etric Dome Refractors**



Designed for units mounted at the side of the street. An A-Sym-etric Dome Refractor reduces the light on the house side which is an advantage in residential districts.

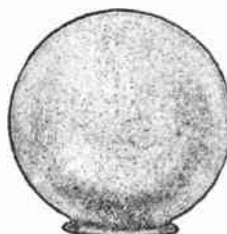
**G-E B-Sym-etric Holophane Dome Refractors**



Conserves the light in the upper hemisphere, which for some classes of lighting is not required, and redirects it to the street where it will be useful.

For units mounted at the side of the street. Reduces the light on the house side, which is an advantage in residential districts.

**Street-Lighting Ball Globes**



**With Plain Collar**



**With Spun Aluminum Protector**

Snow-white is a pure white diffusing glass. It does not show any lamp filament nor bright spot on the globe surface. Inlite is a fine semi-translucent glass and very white for this character of glass.

Inland C. R. I. (crystal roughed inside) is a clear glass sand-blasted inside. Inland ruby and green are solid and true colored.

Furnished in snow-white, C. R. I., Inlite and with plain collar spun aluminum protector as illustrated.

Cat. No.	Size In.	Snow White Each	Ruby and Green Each	For Drilling One Hole	Std. Pkg.	Pkg. Wt. Lbs.
2436	4 x10	\$1.54	\$3.08	\$.16	4	19
2438	5 x10	1.54	3.08	.16	4	19
2440	6 x10	1.54	3.08	.16	4	19
2442	7 x10	1.54	3.08	.16	4	19
2448	5 x12	2.32	4.62	.26	1	8
2450	6 x12	2.32	4.62	.26	1	8
2452	7 x12	2.32	4.62	.26	1	8
2454	8 x12	2.32	4.62	.26	1	8
2464	6 x14	3.52	7.04	.26	1	11
2468	7 x14	3.52	7.04	.26	1	11
2470	8 x14	3.52	7.04	.26	1	11
2474	6 x16	4.96	9.90	.34	1	12
2476	7 x16	4.96	9.90	.34	1	12
2478	8 x16	4.96	9.90	.34	1	12
2480	9 x16	4.96	9.90	.34	1	12
2482	6 x18	8.80	17.60	.50	1	14
2486	8 x18	8.80	17.60	.50	1	14
2492	8 1/2 x20	15.40	30.80	1.00	1	16

An additional charge of 30 cents per globe is made when equipped with spun aluminum protector ring.



## G-E Form 8 Novalux Ornamental Luminaires



**Cross-Section of Globe and Canopy Showing Internal Canopy and Refractor Holder**

Recommended for whiteway lighting for towns and villages and ornamental lighting on boulevards, parkways, residential streets and less important business streets of larger cities.

This luminaire has been designed particularly for use with 1000 to 6000-lumen, 6.6-ampere series or 200 to 500-watt multiple Mazda C lamps. Since the Form 8 casing will not contain an auto-transformer, high-current series lamps in 4000, 6000 and 10000-lumen sizes operated at currents of 15 or 20 amperes can be used in this unit only in connection with a Type II transformer in the base of the standard.

Casing is of cast iron and has two cast lugs to support a porcelain receptacle or supports for a multiple socket. Globe seat is embodied in casing and drip holes are drilled in globe seat to drain off rain water.

Two types of casings can be furnished having the same external appearance and differing only in method of attachment to pole. Type F and 3 casings rest upon top of pole and are bolted in place; K and 2-K casings slip over shaft and are fastened by set screws.

Internal canopy holder for glass canopy is fastened to upper lip of globe by set screws. Canopy holder has a swinging arm which projects through hole in glass canopy and is drilled on end for combined pinnacle and weather shield.

Design of casing is architecturally constructed for use with fluted poles. Internal canopy holder with swinging arm holds canopy securely to globe and acts as a support for canopy during cleaning.

Alabaster rippled glassware diffuses light and has high transmission characteristics.

## G-E Form 9 Novalux Ornamental Luminaires



**Cross-Section of Complete Luminaire Showing Auto-Transformer and Internal Parts**

Recommended for whiteway lighting, main boulevards and secondary business streets.

Straight series, straight multiple, or high-current series lamps can be used with this fixture. The high-current lamps can be operated from Type II transformers or auto-transformers. The 6000, 10000 or 15000-lumen lamps are recommended for best results.

The standard dome or A-Symmetric dome refractors can also be used with rippled glassware.

The luminaire consists of a cast iron casing, a porcelain receptacle which acts as a support for the series socket, a globe, and canopy. The casing is designed to accommodate an auto-transformer which, when used, is mounted on the under side of porcelain insulating plate. The globe seats in a groove on the top of the casing

and is held firmly in place by three clips. The casing is fastened to the pole by three screws.

The architectural design of the casing enables it to be used on fluted poles.

On account of the short casing, this makes a good luminaire for bracket mounting.

The internal canopy holders with swinging arms hold the canopy securely to the globe and act as a support for the canopy during cleaning.



**With No. 127 Globe, No. 1127 Glassware**



**With No. 109 Globe, No. 1109 Glassware**



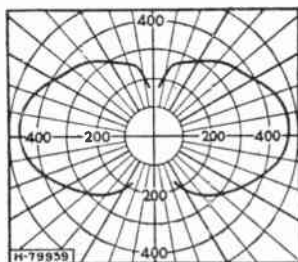
**With No. 123 Globe, No. 1123 Glassware External Straps**



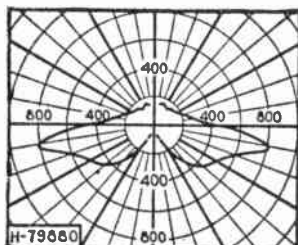
**With No. 107 Alabaster Rippled Globe, No. 1107 Rippled Canopy**



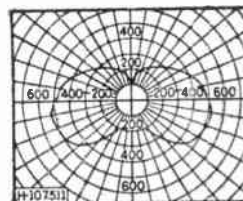
**With No. 118 Alabaster Rippled Globe, No. 1118 Alabaster Rippled Canopy**



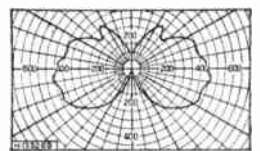
**Typical Distribution Curve of Luminaire with Rippled Glass Globe and Canopy, and 6000-Lumen Lamp**



**Typical Distribution Curve of Luminaire with Rippled Glass Globe and Canopy, Dome Refractor and 6000-Lumen Lamp**



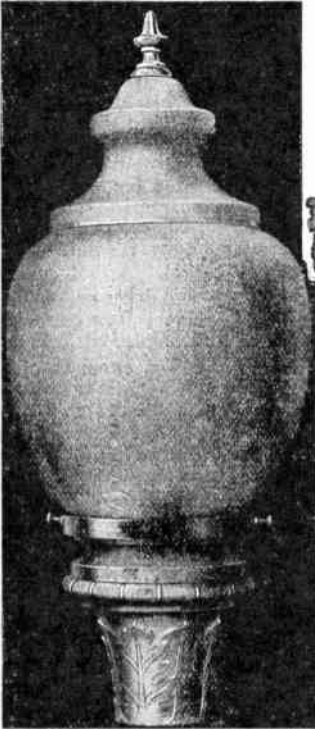
**Typical Distribution Curve of Luminaire with Rippled Glass Globe and Rippled Canopy with 6000-Lumen Lamp**



**Typical Distribution Curve of Luminaire with 8-Panel Globe and 6000-Lumen Lamp**

G-E Form 12 Novalux Ornamental Luminaires

G-E Novalux Ornamental Luminaires



With No. 118 Alabaster Rippled Globe, No. 1118 Alabaster Rippled Glass Canopy, Form N Casing



With No. 123 Alabaster Rippled Globe, No. 1123 Alabaster Rippled Canopy and External Straps



Form 13—With No. 109 Alabaster Rippled Globe and No. 1109 Alabaster Rippled Canopy

Made for use on octagonal poles with 4-inch top. The 2500, 4000, 6000 or 10000-lumen series and 300 or 500-watt multiple Mazda C lamps can be used in this fixture.



With No. 123 Alabaster Rippled Globe, No. 1123 Alabaster Rippled Glass Canopy Form O Casing

Designed for use with 4000 and 6000-lumen, 6.6-ampere series; 4000, 6000, 10000, 15000 and 25000-lumen high-current lamps or 300 to 2000-watt multiple Mazda C lamps. High-current series lamps, except 25000-lumen size, can be operated from self-contained auto-transformers or Type II transformers.

The 1500 or 2000-watt and 25000-lumen sizes can be only used with 126 globe and 1126 canopy.

Cast iron casing, standard with green paint finish, has been designed for a slender pole having a 5-inch top diameter. For the No. 103 and 123 globe, a 7" adapter is used, forming the O casing. For No. 104 and 124 globe, an 8" adapter is used, forming the M casing. For No. 118 globe, a 10" adapter is used forming the N casing. For 126 globe an 11" adapter is used.

Canopies for Nos. 103, 104, 123, 124 and 126 globes are held by an internal support which fastens to casing.



Form 16—With No. 118 Alabaster Rippled Globe and No. 1118 Alabaster Rippled Glass Canopy

A replica of the Form 13 luminaire on a larger scale. For use with 6000 to 10000-lumen, 6.6-ampere series; 6000 to 15000-lumen, 20-ampere series; 300 to 1000-watt multiple Mazda C lamps.



## G-E Form 18 Novalux Ornamental Lantern Luminaires



The Form 18 Novalux lanterns are available in two sizes which meet every requirement of ornamental street lighting besides being useful for the ornamental lighting of certain types of buildings.

The Form 18A small size is for use with 300 and 500-watt, 2500, 4000 and 6000-lumen, 6.6-ampere series or 4000, 6000 and 10000-lumen high-current series lamps.

The Form 18B large size is made for use with 300, 500, 750 and 1000-watt, 4000 or 6000-lumen, 6.6-ampere series or 4000, 6000, 10000 and

15000-lumen high-current series lamps. These high-current series lamps can be operated from Type 1L transformers in the small lantern and auto-transformers or Type 1L transformers in the larger lantern.

## G-E Form 19 Novalux Ornamental Lantern Luminaires



Designed for suspension from ornamental bracket arms. Useful for parkways, boulevards and residential streets.

Form 19A small size is used with a 300 or 500-watt Mazda C lamp.

Form 19B large size is used with a 750 or 1000-watt Mazda C lamp.

Made of grey cast iron. The different members are held together with brass screws, nuts and lock washers, thus eliminating any chance of corrosion of tapped holes and screws.

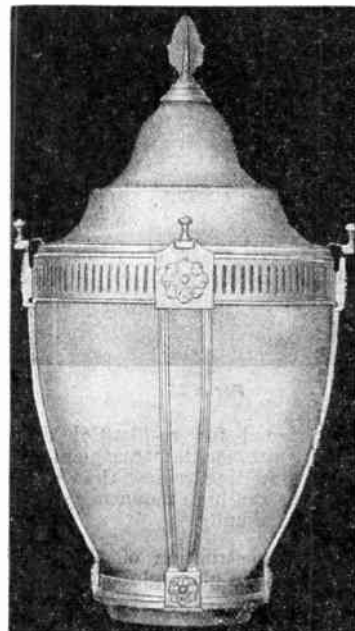
Bottom is a grid casting which carries a flat octagonal glass panel

to provide light directly underneath unit.

## G-E Form 33 Novalux Luminaires Suitable for Use with Concrete Standards



With No. 109 Globe and No. 1109 Canopy



With No. 124 Globe and No. 1124 Canopy with Ornamental Side Arms

For ornamental lighting on boulevards, parkways, residential streets and less important business streets of the larger cities.

## G-E Form 27 Novalux Ornamental Luminaires



Cross-Section of Globe and Canopy Showing Internal Canopy and Refractor Holder

Form 27 luminaire is ideal for whiteway lighting in small towns or villages or for the minor business streets of larger cities.

For use with 1000 to 6000-lumen 6.6-ampere series, or 200 to 1000-watt multiple Mazda C lamp and, since the casing does not permit the use of an auto-transformer, a Type 1L series transformer is mounted in the base of the standard.

Holophane Sym-etric dome, A-Sym-etric and B-Sym-etric dome refractors redirect a portion of the upward light to the street surface. They can be used with Form 27 luminaires and are often desirable along boulevards and parkways where the amount of upward light is of less importance.

Consists of a cast iron casing, a porcelain receptacle which acts as a support for the series socket, a globe and canopy. Casing slips over shaft of pole and is held by three set screws. Globe seats in a groove on top of casing and is held firmly in place by four clamps. Canopy is held to globe by an internal canopy holder with three lugs which set over lip of globe and which is held fast by three screws that go under inside of upper globe fitter.



Small Lantern Luminaire

For use with Mazda C lamps, 1000 to 6000-lumen, 6.6-ampere series lamps, or 200 to 500-watt multiple lamps. Casing will not contain an auto-transformer, therefore, high-current series Mazda lamps in 4000, 6000, 10000 and 15000-lumen sizes, operated at currents of 15 or 20 amperes, can be used in this unit only in connection with a Type 1L transformer in the base of the metal standard, or in concrete vaults for use with concrete standards.

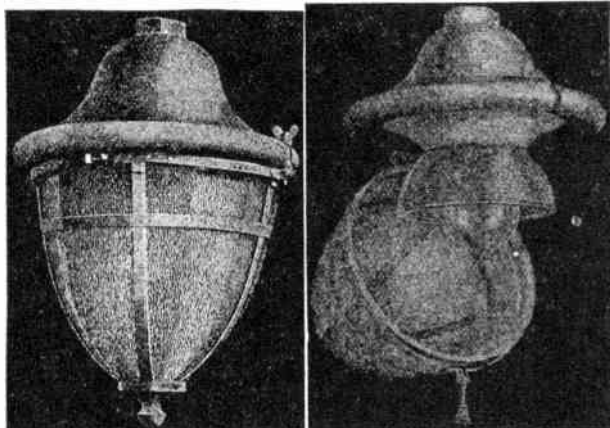
The Sym-etric, A-Sym-etric or B-Sym-etric dome refractors can be used with rippled glass-ware.

Casing consists of a globe fitter and a pole adapter.

For all but the Nos. 1123 and 1124 canopies, the internal canopy holder for the glass canopy is fastened to the upper lip of the globe by set screws. Canopy holder has a swinging arm which projects through hole in glass canopy and is threaded on end for combined pinnacle and weather shield.



### G-E Form 25 Novalux Suspension Luminaires



Form 25

Form 25 with Globe Open

Designed for residential districts where surroundings justify ornamental treatment, where wide streets require curb mounting rather than center suspension, where long spacing and high mounting are needed to economize in the number of units.

The construction of these units involves only a one-piece rippled glass globe supported by a basket formed of copper bands.

Top of luminaire is a single iron casting, painted green, which supports socket and porcelain enameled reflector and to which the copper basket is hinged. Reflector also serves as a holder for holophane dome refractor.

Top casting of luminaire is tapped to screw on end of a 1¼-inch pipe. Bracket consists of standard pole plates, pipes and scrolls used with street-system brackets.

#### Form 25-A

No. 116 light alabaster rippled globe, Sym-etric or A-Sym-etric dome refractor. Mounting height, 16 feet approximately. Spacing, 250 to 300 feet. Lamps—100, 150 or 200-watt multiple or 1000-lumen straight series.

#### Form 25-B

No. 108 light alabaster rippled globe, dome or A-Sym-etric dome refractor. Mounting height, 20 feet approximately. Spacing, 300 to 400 feet. Lamps—300 or 500-watt multiple or 4000, 5000 and 10000-lumen straight series or Type IL transformer types.

#### Form 25-C

An ornamental suspension fixture in which lamps up to 500-watt multiple and 15000-lumen series may be used. Applicable on boulevards, highways and any other place requiring a pendent unit with excellent appearance and high efficiency.

No. 193 alabaster rippled globe, Sym-etric, A-Sym-etric or B-Sym-etric dome refractor.

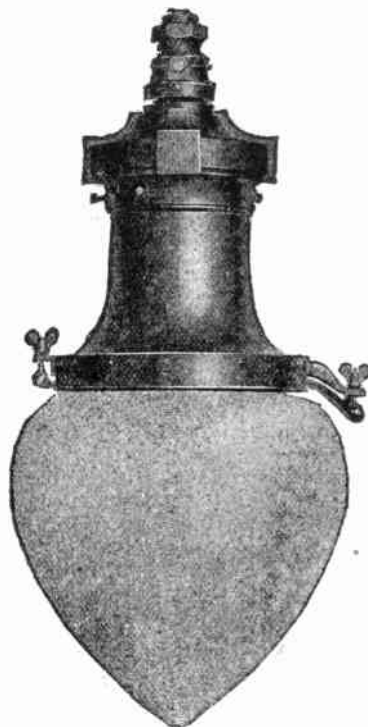
May be installed on 6.6-ampere series systems using lamps from 2500 to 15000 lumens. Since the 4000 to 15000-lumen lamps operate more efficiently on 15 and 20-ampere circuits, the use of Type

IL transformers to provide higher current is recommended.

The efficiency of the luminaire is increased by the use of a steel internal reflector with reflecting surface of white porcelain enamel.

### G-E Form 32 Novalux Suspension Luminaires

Bracket Suspension—Green Finish



With No. 146 Alabaster Rippled Globe

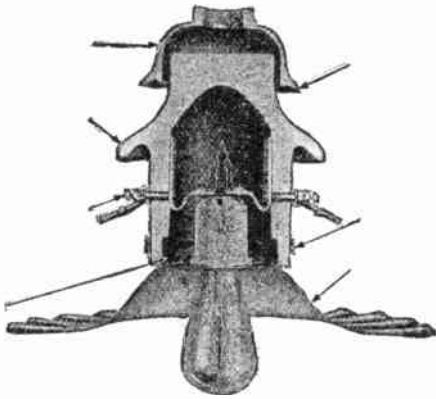
The Form 32 Novalux suspension luminaire is recommended for ornamental lighting, with lighting standards and with ornamental brackets for installation with underground wiring.

With different shapes of rippled globes, with and without dome refractors and with the various types of bowl refractors, this luminaire may be recommended for main thoroughfares, secondary business streets, residential streets and park roadways where high intensity illumination is required.

This luminaire is designed for use with Mazda C incandescent lamp. The straight series lamp of 2500, 4000 or 6000-lumen, 6.6-ampere rating and the multiple lamp of 300 or 500 watts are most commonly used with the glass-ware listed, except the No. 146 globe. The 6000, 10000 or 15000-lumen series and 750 or 1000-watt multiple lamps are best suited for use with the large No. 146 globe. The 15000-lumen, 15 or 20-ampere series or 750 and 1000-watt multiple lamps may be used with the No. 162 globe without refractors, or for 10000-lumen series, 300 or 500-watt multiple lamps with refractors. This globe is rectangular in shape and has been designed for use with a light shield to keep light on the house side from being objectionable to residential owners.

Since the 4000, 6000 and 10000-lumen lamps operate more efficiently on 15 or 20 amperes than on 6.6-ampere circuits, the use of an auto-transformer or Type IL transformer, for the purpose of stepping up the current, is recommended in these instances. Provision is made for mounting an auto-transformer within the casing of the luminaire. The IL transformer type of installation is particularly desirable because of its protection, which allows low-voltage wiring to the luminaire. When the Type IL transformer is used, it is usually mounted on the wood pole, in the base of the ornamental standard, or buried in the ground.

## G-E Novalux Suspension Luminaires For Use on All Series Circuits



Sectional View of Form 45-H with Sheet Metal Reflector

Suitable for installation in residential sections and on secondary business streets.

All parts are interchangeable. Changes in lamps and glassware accommodations are readily accomplished to meet all requirements that may develop in the community served.

A flexible and serviceable arrangement is provided for supporting sheet metal or cast iron reflectors with glassware to insulator without the use of adapters. Three heavy brass supporting and positioning screws, mounted in a bronze ring, impinge against a concentrically grooved copper collar on sheet metal reflector, or against conical depressions in lugs of cast iron reflector. This clamping arrangement forms a firm support for the reflector and acts as a protection for the insulator, as the possibility of radial stress on insulator is eliminated.

Reflector is made of high grade enameling steel and is finished in white fired vitreous enamel on the reflecting surface and green fired vitreous enamel on the outside surfaces. A concentrically grooved copper collar is provided, against which supporting screws impinge, relieving the enameled surface from undue strain.

An ornate cast iron reflector is available which can be furnished either with green paint, hot-dip galvanized, or green fire-enameled finish. The vitreous fire-enameled finish provides a lustrous surface of high efficiency, long life, low maintenance, and excellent appearance. This reflector also serves as a support for glassware by the addition of non-ferrous hinge and latch fittings.

Cast iron hood is tapped for a 1 1/4-inch pipe.

Overhanging skirt on wet-process porcelain insulator increases creepage distance and provides additional dry surface.

Binding post passes through tie lug, insulator and receptacle clip supports. Light centers are adjusted by changing supports on binding posts. Copper collar relieves enamel surface from undue strain.

Water dripping from overhang on cast iron hood strikes insulator just above skirt. This feature greatly increases wet flashover voltage.

Clamping ring with three set screws holds reflector without radial pressure on porcelain. Contour of sheet metal reflector greatly increases strength and prevents flexing and consequent chipping of enamel.

### Form 45-H

Consists of a cast iron hood, wet-process porcelain insulator, series socket, sheet metal fire-enameled, radial-wave reflector, or a cast iron reflector with refractor holder and refractor, a globe holder and globe as required.

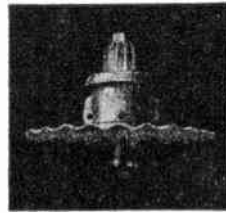
Main insulator is made of wet-process porcelain, finished in green glaze, provides high mechanical and dielectric strength, is non-hygroscopic and is equipped with non-ferrous contact parts and supporting elements.

### Form 45-M

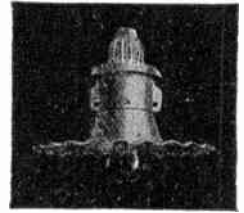
Form 45-M1 is similar to Form 45-H4 fixture with all the combinations of reflectors and glassware except that the insulator is of dry-process porcelain.

## G-E Form 45-H4 Novalux Suspension Luminaires

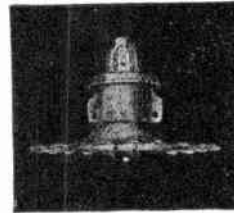
With Wet-Process Porcelain Insulator for Use on All Series Circuits



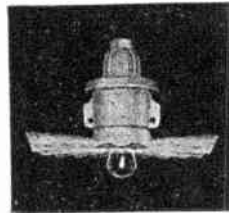
With 20-Inch Flat Radial-Wave Reflector



With 20-Inch Deep Dome Radial-Wave Reflector



With 18 or 20-Inch Dome Radial-Wave Reflector



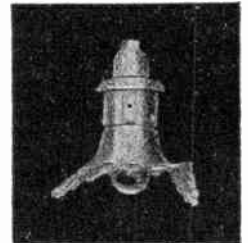
With 20-Inch Asy-Radial-Wave Reflector



With 20-Inch Asy-Radial-Wave Reflector, Long Collar



With 20-Inch Dome Radial-Wave Shading Reflector



With 20-Inch Deep Dome Radial-Wave Shading Reflector



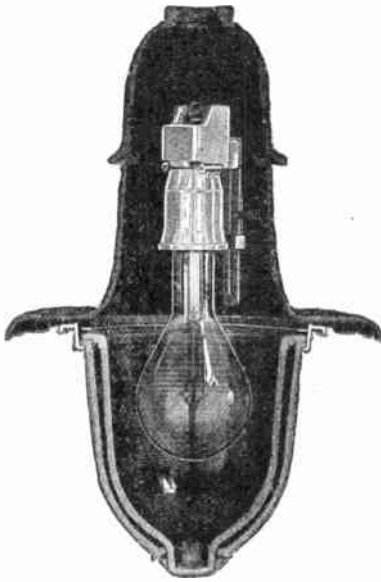
With 20-Inch Concentrating Asy-Radial-Wave Reflector



With 20-Inch Concentrating Asy-Radial-Wave Reflector, with Long Collar



**G-E Form 45-L Novalux Suspension  
Luminares**



**Sectional View**

Recommended for installation in residential sections, on main thoroughfares and on secondary business streets or highways. Suitable for use on any overhead lighting circuit of less than 5000 volts; readily adapted for series, multiple or Type IL transformer distribution.

Consists of a cast iron hood, reflector, series or multiple socket, and refractor or enclosing globe.

Four cast iron hoods are provided, one with a straight 1 1/4-inch pipe tap, one with a right angle 1 1/4-inch pipe tap, and two similar hoods with bushings for external wiring. Hoods finished in green fire enamel, hot-dip galvanized or green paint.

The sheet metal, radial-wave reflectors are made of high grade enameling steel finished in white and green, fired, vitreous enamel.

Cast iron reflectors, both shallow and deep, can be furnished with fire enamel, hot-dip galvanized or painted finish.

On series circuits up to 5000 volts, a receptacle is furnished for necessary insulation and to receive series socket. When used with a hood and sheet metal or shallow, cast iron reflector, the receptacle is mounted in the hood on a small non-adjustable support and when used in the deep cast iron reflector, an adjustable support provides adjustment for 5 3/8, 7 or 9 1/2-inch light center lamps.

On multiple circuits, a medium screw base socket on an adjustable support is mounted in hood and used with sheet metal or shallow cast iron reflector, permitting operation of multiple lamps up to and including 200 watts. For 300 to 500-watt lamps a Mogul screw base socket is mounted on an adjustable support in deep cast iron reflector.

Bowl and band refractor holders consist of a cast aluminum ring, with rigid hinge and latch fittings. Nos. 166 and 176 globes have a holder similar to refractor holder and with all the advantages of a refractor holder. It is of sufficient diameter to allow the globe to swing by the dome refractor.

If a dome refractor is required, a holder is provided and may be attached to cast iron reflector by screws that hold hinge and latch fitting. With the new design of rigid hinge and snap-latch fittings, it is possible to relamp luminaire from ground with a lamp picker.

**G-E Form 45-L Novalux Suspension  
Luminares**

For Series Circuits Under 5000 Volts



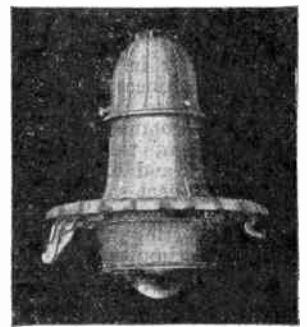
**With 18 or 20-In. Dome  
Radial-Wave Reflector**



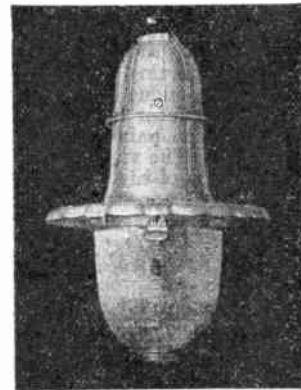
**With 20-Inch Deep Dome  
Radial-Wave Reflector**



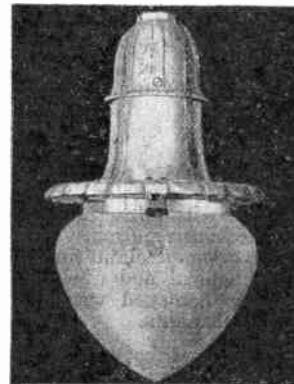
**With 14-Inch Deep Cast  
Iron Reflector**



**With 14-In. Deep Cast Iron  
Reflector and 8-Inch Band  
Refractor**



**With 14-In. Deep Cast Iron Reflector and Sym-etric,  
B-Sym-etric or Hi-Way Bowl Refractor**



**With 14-Inch Deep Cast Iron  
Reflector and No. 166 Ala-  
baster Globe**



**With 14-Inch Deep Cast Iron  
Reflector and No. 176 Ala-  
baster Globe**



## G-E Form 47 Novalux Eternalite Suspension Luminaires

For Use on All Series Circuits, Multiple or Type IL Transformer Circuits

For 300-Watt Multiple or 2500, 4000 or 6000-Lumen Series Lamps



Reflector Only



With 8-Inch Band Refractor



With Sym-etric, B-Sym-etric or Hi-Way Bowl Refractor



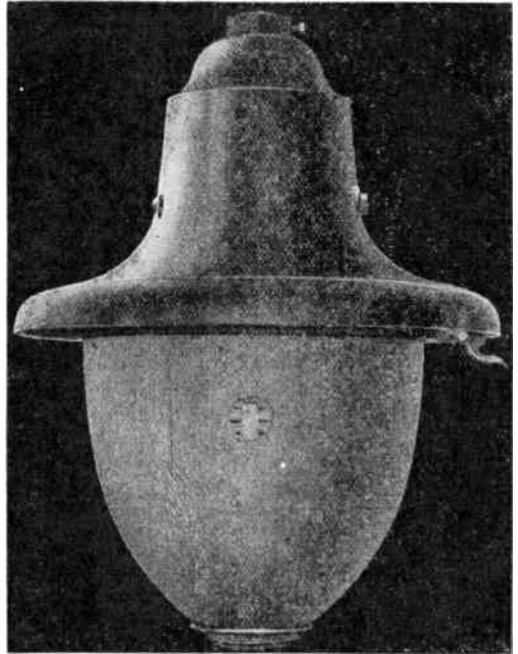
With No. 166 Alabaster Globe and Sym-etric, A-Sym-etric or B-Sym-etric Dome Refractor



With No. 176 Alabaster Globe and Sym-etric, A-Sym-etric or B-Sym-etric Dome Refractor

## G-E Form 52 Novalux Suspension Luminaires

For Operation on Multiple and Series Circuits Up to 5000 Volts



Luminaire with 11-Inch Refractor

Designed particularly to utilize the increased efficiency obtained by using the new 11-inch refractor. This unit may be applied to good advantage on boulevards, main thoroughfares, highways and any other place where a pendent unit with excellent appearance and high efficiency is required.

May be installed on series systems using 2500, 4000 or 6000-lumen lamps for operation on 6.6-ampere circuit; since the 4000, 6000 and 10000-lumen lamps operate more efficiently on 15 and 20 amperes than on 6.6-ampere circuits, the use of IL type transformers for the purpose of stepping up the current is recommended in these instances. Lamps rated as high as 15000 lumens may be used in this unit on series circuits. On multiple-circuits, lamps rated as high as 500 watts may be used. The fact that these large size lamps are applicable in this unit puts it in step with the present trend of good lighting practice.

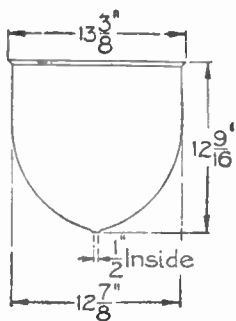
The hood or casing is a casting which may be furnished in cast iron, painted green or in galvanized or cast aluminum in natural finish or painted.

Hood is also equipped with an external adjusting mechanism which permits the adjustment of the lamp to the proper light center with respect to the refractor—a consideration that is essential for correct distribution. The new rigid hinge and latch refractor holder is incorporated in the design of this fixture. This holder insures an insect-tight fit for the refractor against the casing. It is also notched, which prevents the refractor from slipping out of position because of vibration or relamping. The new hinge and latch permits relamping from the ground with the assistance of a lamp replacer. The 11-inch refractor with peephole is an essential feature of this fixture. It is highly efficient and the peephole makes possible positive adjustment.

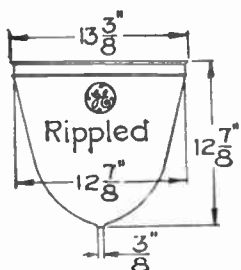
G-E Street Lighting Glassware

Outer Globes

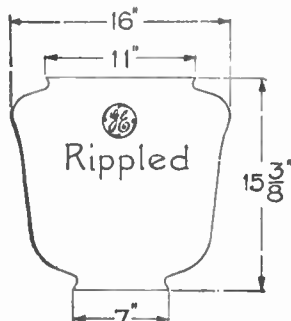
Dimensions



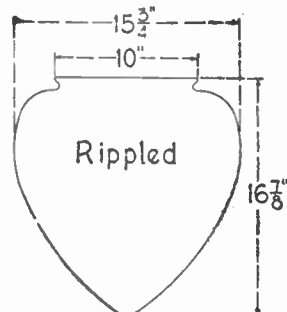
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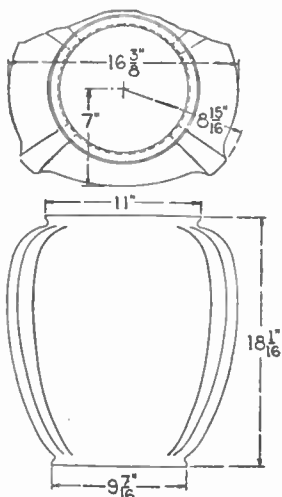
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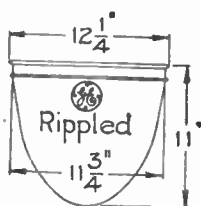
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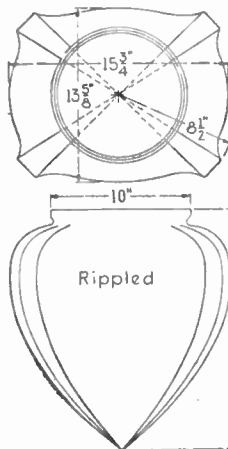
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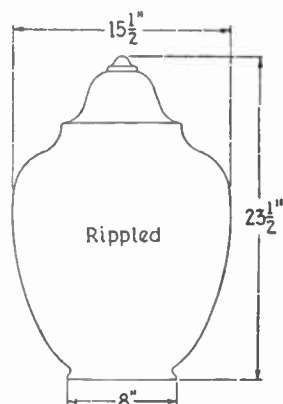
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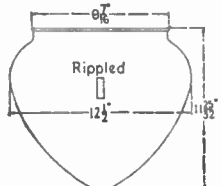
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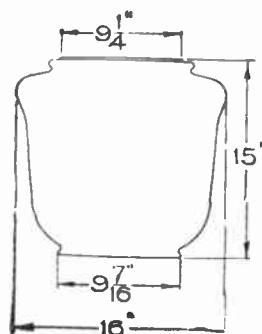
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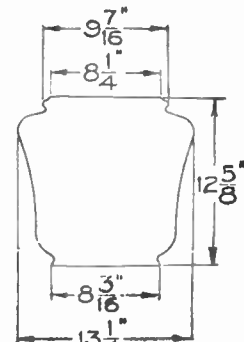
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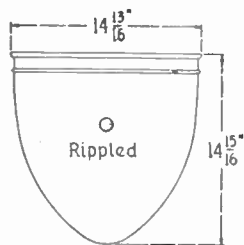
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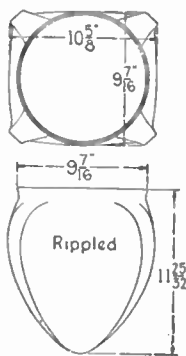
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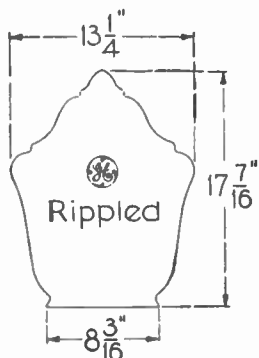
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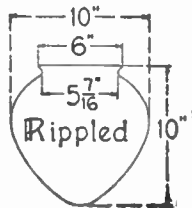
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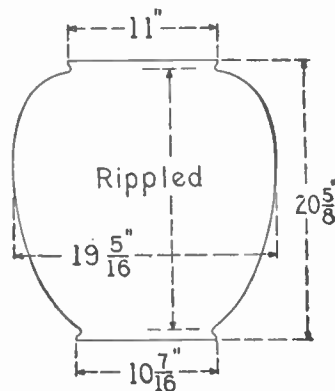
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No. 154



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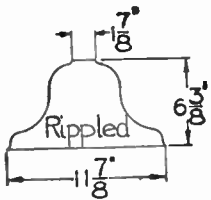


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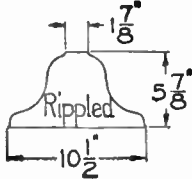
## G-E Street Lighting Glassware

### Outer Globes with Companion Canopies

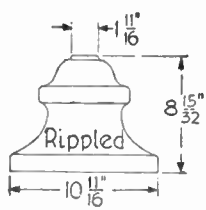
#### Dimensions



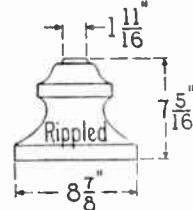
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Patent Applied for



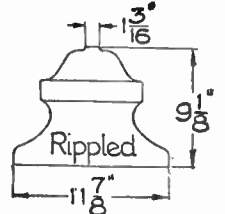
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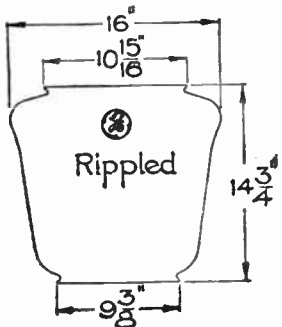
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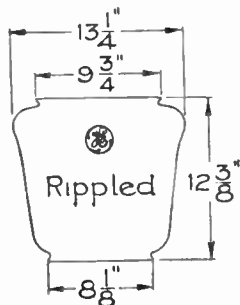
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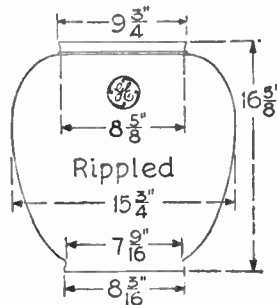
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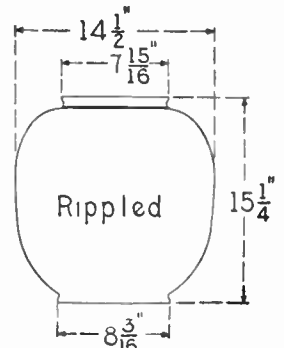
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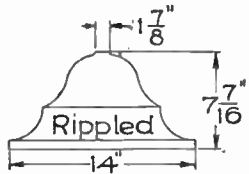
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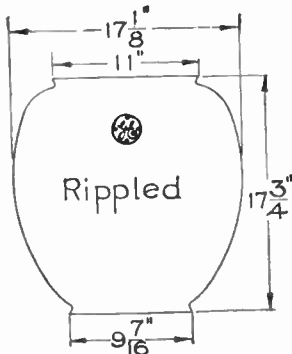
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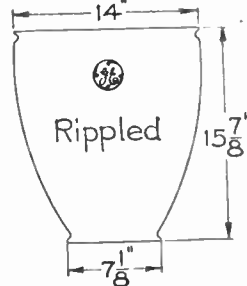
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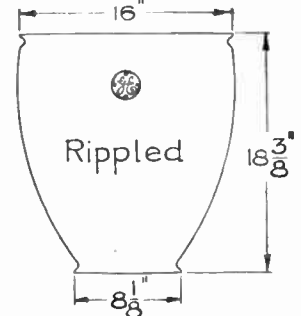
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Design Patent 55165



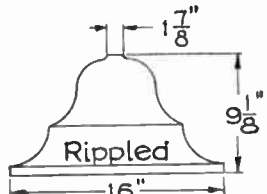
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Design Patent 50192



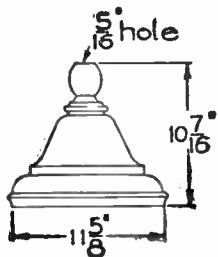
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Design Patent 57462



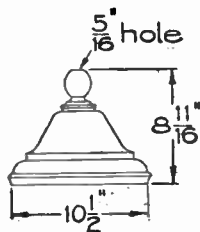
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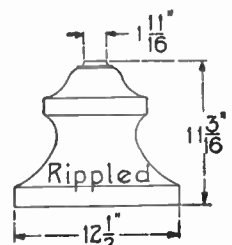
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Design Patent 55165



No. 1037  
Design Patent 55303



No. 1039  
Design Patent 55303



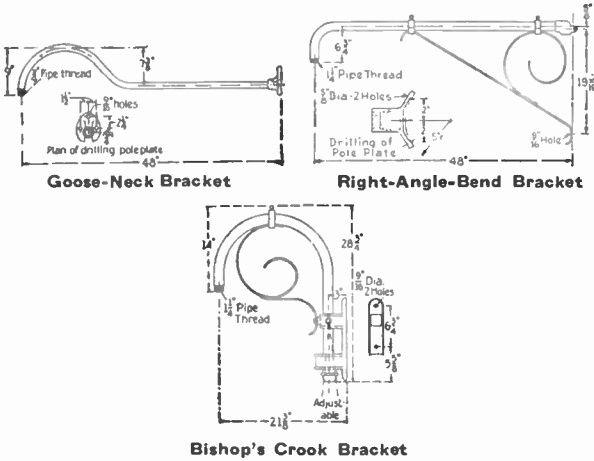
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**G-E Novalux Brackets**  
For Novalux Suspension Luminaires

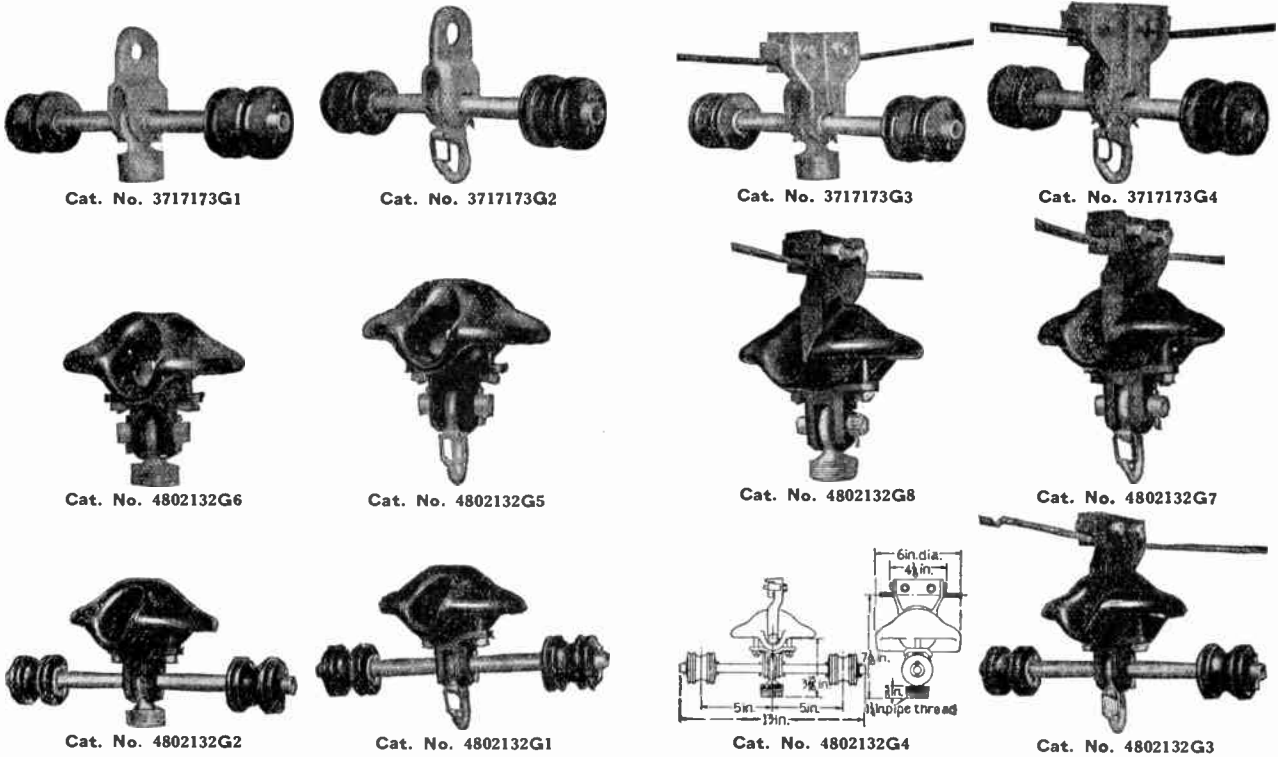
Pipe is steel and not conduit.  
Angle of bracket with pole is adjustable on Bishop's Crook, right-angle-bend and straight pipe brackets.  
Pole plates are malleable iron.

The 1 1/4-inch brackets are available with either 2 or 3-hole pole plates.  
Scroll clamps and set screws are galvanized. On painted brackets, clamps are painted over galvanizing.

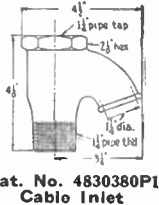
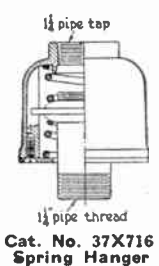


CAT. No.		Description	Pipe Bracket Diam. In.	Lgth. In.	Wt. Lbs. Net Ship.
Green Paint Finish	Galvan- ized Finish				
1229475G22	1229475G21	Goose-Neck	3/4	48	7 8
1229475G40	1229475G39	Goose-Neck with 1 1/4-Inch Adapter	3/4	48	7 8
1229475G26	1229475G25	Goose-Neck	1	48	8 9
1229475G15	1229475G16	Bishop's Crook	1 1/4	21 3/8	...
1229475G79	1229475G80	Right-Angle-Joint with Scroll and 3-Inch Hole Pole Plate	1 1/4	47 1/4	22 24
1229475G 3	1229475G 4	Right-Angle-Bend with Scroll	1 1/4	48	21 23

**G-E Novalux Hangers**  
For Novalux Suspension Luminaires



Cat. No.	Description	Wt. Lbs. Net	Shipping
3717173G1	Eye-Suspension with Stud and Crossarm	3	4
3717173G2	Eye-Suspension with Hook and Crossarm	3	4
3717173G3	Clamp-Suspension with Stud and Crossarm	4	5
3717173G4	Clamp-Suspension with Hook and Crossarm	4	5
4802132G6	Eye-Suspension with Stud and Insulator	4	9
4802132G5	Eye-Suspension with Hook and Insulator	4	9
4802132G8	Clamp-Suspension with Stud and Insulator	6	11
4802132G7	Clamp-Suspension with Hook and Insulator	6	11
4802132G2	Eye-Suspension with Stud, Crossarm and Insulator	6	11
4802132G1	Eye-Suspension with Hook, Crossarm and Insulator	6	11
4802132G4	Clamp-Suspension with Stud, Crossarm and Insulator	8	13
4802132G3	Clamp-Suspension with Hook, Crossarm and Insulator	8	13
114013	Suspension Eye for Main Insulators	..	..



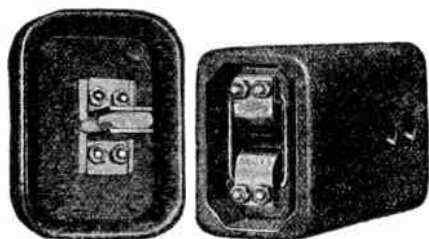
## G-E Sockets and Receptacles



Multiple Socket Mogul Base				Series Receptacles			
Cat. No.	Description	Std. Pkg.	Ship. Wt. Lbs. Std. Pkg.	Cat. No.	Description	Std. Pkg.	Ship. Wt. Lbs. Std. Pkg.
45X841	Skeleton Type	100	35	4815794G5	Porcelain for Ornamental Luminaires.	20	25
45X850	Skeleton Type for Form 45-L Units	100	35	4815089G1	Porcelain for Form 45-L Units	20	25
129804	Porcelain	100	65	*39X348	Porcelain for Suspension Units	100	75
159377	Porcelain with 1/2-Inch Pipe Tap	50	80	*39X330	Porcelain with Iron Yoke (1/8 Inch, 18 Thread)	20	20
129803	Porcelain	100	35	1257712G4	Porcelain with Iron Yoke (1/8 Inch, 18 Thread) and Spacers	20	25
28795	Porcelain Type for Form 45-L Units	100	35	<b>Combination Series Socket and Receptacle</b>			
GE427	Porcelain with Yoke for 1/2-Inch Pipe	100	50	*4830217G1	Consists of Cat. Nos. 39X348, 4815866G1 and Yoke Cat. No. 25714.	25	50
<b>Series Socket Mogul Base</b>				1257712G3	Same as Above but with Spacers	25	50
4815866G1	Porcelain	100	80	<b>Adapters</b>			
4815845P1	Porcelain Shell Only	50	18	GE070	For Operating Medium Screw Base Lamps from Mogul Socket	100	25
4815866G2	Composition (Black)	50	45	20X45	Mogul Extension—2 1/2 Inches	50	16
4815845P2	Composition Shell Only (Black)	50	18	<b>Yokes</b>			
4815866G3	Composition (White Finish)	50	45	25714	Iron Yoke Only (1/8 Inch, 18 Thread) with 2 Screws Cat. No. 48X758, Used with Cat. No. 39X330	100	35
4815845P3	Composition Shell Only (White Finish)	50	18	*Cannot be used in old type bracket and suspension luminaires using bell-type hoods, Cat. No. 46218 or Cat. No. 189625.			
12X491	Extension—Porcelain	50	50	<b>G-E Film Cutouts</b>			
60X161	Contact Shell and Prong Assembly Only	50	15	<b>For Use with G-E Series Sockets on Series Incandescent Circuits</b>			
25720	Porcelain	50	50	<b>Enclosed Copper-Oxide Disc Type</b>			
4815233G1	Porcelain for Ornamental and Form 52 Luminaires	20	25	<b>Enclosed Copper-Oxide Disc Type</b>			

Cat. No.	Probable Limits of Breakdown in Volts	Color of Washer	Diameter Inches	Std. Pkg.	Ship. Wt. Oz. Std. Pkg.	Cat. No.	Probable Limits of Breakdown in Volts	Color of Washer	Diameter Inches	Length Inches	Std. Pkg.	Ship. Wt. Oz. Std. Pkg.
4815602G2	50-90	Brown	3/4	50	2	4815920G3	250-350	Red	9/16	...	50	1 1/2
4815602G1	100-200	Black	3/4	50	2	4815603G2	50-90	Brown	27/64	...	100	1 1/2
4815602G3	250-350	Red	3/4	50	2	4815603G1	100-200	Black	27/64	...	100	1 1/2
4815920G2	50-90	Brown	9/16	50	1 1/2	<b>Magazine Type</b>						
4815920G1	100-200	Black	9/16	50	1 1/2	15X729	100-250	...	3/16	1 3/16	500	1/2

**G-E Form F-100-B Novalux Pothead Cutouts  
For Ornamental Street-Lighting Units**



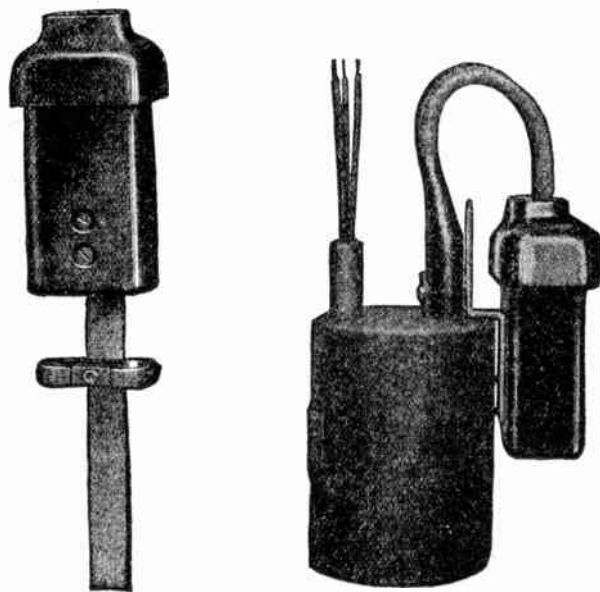
Cat. No. 3732073G1

For use with ornamental series street-lighting circuits for mounting in the base of the smaller lighting standards.

Consists of two sections, the box and plug, both made of special process porcelain. Plug is equipped with flat contact strips, insulated from each other. Provision is made at top part of plug so that insulating compound can be poured in round the leads. Box contains four flat phosphor-bronze springs. Contacts are assembled within an air expulsion chamber.

If it is desired to use cutout for disconnecting several lamps, this chamber may be filled with G-E No. 21 Oil.

At the top of box, a hole is provided through which insulating compound can be poured. Two holes are provided in bottom of contact of cutout for parkway cable.



Cutout with Spade Bracket and Cable Clamp, Cat. No. 3732073G2

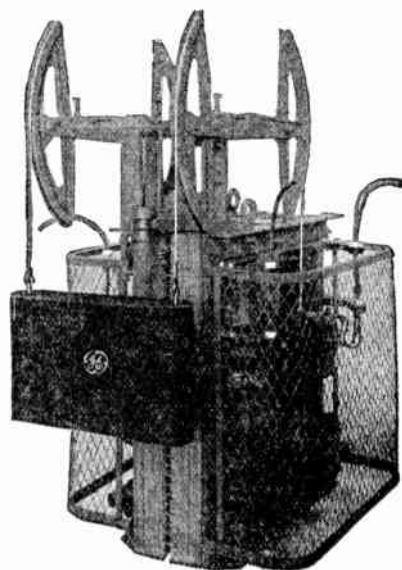
Cutout with Strap for IL Transformer Mounting, Cat. Nos. 3732073G5 or 3732073G6 Mounted on Side

Cat. No.	Description	*Ship. *Net		
		Std. Pkg.	Std. Pkg.	Wt. Lbs. Ea.
3732073G1	Pothead Cutout Only.....	10	125	9
3732073G2	Cutout with Spade Bracket and Cable Clamp for Mounting in Base of Ornamental Pole.....	10	200	13
3732073G7	Cutout with Spade Bracket, Less Cable Clamp, for Mounting in Base of Ornamental Pole.....	10	...	12
3732073G5	Cutout with Bracket for Mounting on Type IL Transformer with 5 1/4-Inch Diameter Can.....	10	140	10
3732073G6	Cutout with Bracket for Mounting on Type IL Transformer with 5 1/4-Inch Diameter Can.....	10	140	10
3732073G4	Cutout with Bracket and Gasket, for Mounting on Ornamental Pole.....	10	140	10

\*Without compound,

**G-E Non-Automatic Station Type  
RV-2 Novalux  
Constant-Current Transformers  
For Operating A.C. 6.6-Ampere Series Lighting  
Loads**

2300 Volts (with 80 Per Cent Load Tap)—60 Cycles



A non-automatic, station type, constant-current transformer designed for use in central stations or substations where an operator is in attendance.

Because of the general adoption of the series system for street lighting installations, it is necessary to have a transformer that will convert constant potential energy to a constant-current energy. This requires a regulating device with a floating coil.

In many instances it is desirable to install a constant-current transformer in a station that is always attended. The Type RV-2 transformer is non-automatic and admirably serves this purpose.

Transformers are built in standard sizes ranging from 5 to 70 kw. output, or in special sizes for any commercial secondary current or frequency, or for any primary potential up to and including 13200 volts. The standard rating is 60 cycles, 2300 volts on the primary, and 6.6 amperes on the secondary.

The exceptionally fine regulation of the constant-current transformers insures rated lumen output, and full life of lamp. The transformer will maintain the secondary current within 1 per cent above or below normal from full load to short circuit, provided the primary potential and frequency remain at rated values.

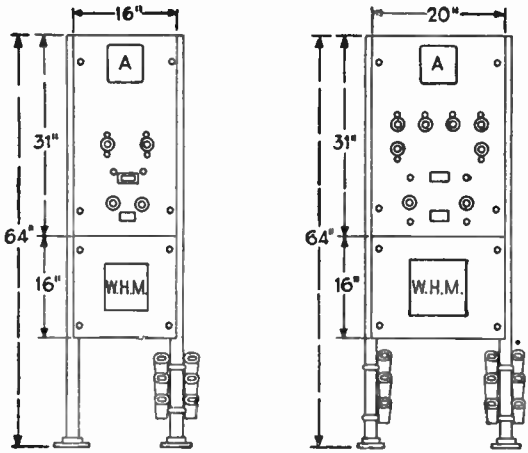
Cat. No.	Normal Kw. Rating	Primary Amp.	Primary Kv-a. Input	Normal Secondary Load Volts	Secondary Open Circuit Volts	Shipping Wt. Lbs.
3167600	5	2.68	6.17	758	910	600
3167602	10	5.35	12.30	1515	1820	825
3167604	15	8.02	18.45	2275	2725	1050
3167606	20	10.68	24.60	3030	3630	1225
3167608	25	13.40	30.80	3790	4550	1425
3167610	30	16.05	37.00	4550	5455	1625
*3167614	40	21.40	49.25	6060	7275	1925
*3167616	50	26.80	61.70	7580	9110	2250
*3167618	60	32.20	74.10	9100	10910	2750
*3167620	70	36.80	84.70	10600	12500	3075

\*Built with multi-circuit secondary. Can be operated either single or multi-circuit.



## G-E Plug Switch Panels

For Non-Automatic Station Type RV-2 Novalux Constant-Current Transformers  
6.6 or 7.5 Secondary Amperes, 2300 Volts



For 1 Transformer and 1 Lamp Circuit

For 1 Transformer and 2 Lamp Circuits

The panels and subbase are asbestos-ebony, 1½ inches thick with ¼-inch bevel, and are mounted on a self-supporting framework of 1¼-inch pipe 64 inches high. Blue Vermont marble may be substituted for asbestos-ebony at a slight increase in price.

Instruments and meters have the G-E Company's standard dull-black finish, while the supporting framework is black japanned.

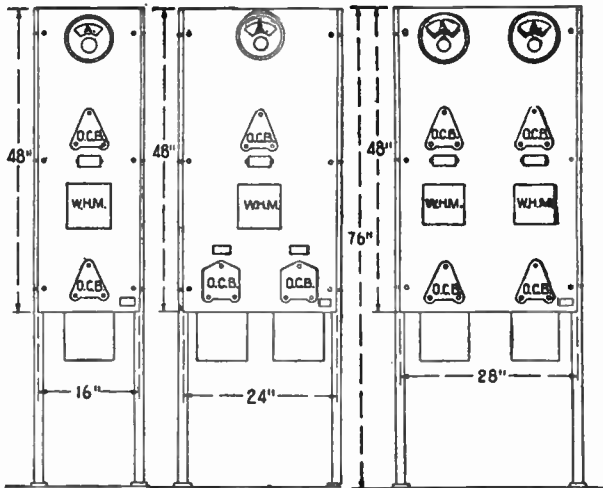
Lightning arresters are recommended for each lamp circuit. They are not included with these panels and must be ordered separately.

Each panel Cat. No. includes one panel with framework, a 5-ampere Type AD ammeter with 10-ampere scale, current transformer, fused primary plug switches, secondary plug switches, necessary plugs, plug racks, card holders and nameplate.

Each wathour meter Cat. No. includes one subbase with pipe fittings, 110-volt, 5-ampere Type IS-8 single-phase wathour meter, current transformer, and potential transformer with fuses and supports.

## G-E FK-41 Oil Circuit Breaker Panels

For Non-Automatic Station Type RV-2 Novalux Constant Current Transformers  
6.6 or 7.5 Secondary Amperes, 2300 Volts



For 1 Transformer and 1 Lamp Circuit

For 1 Transformer and 2 Lamp Circuits

For 2 Transformers with 1 Lamp Circuit per Transformer

Designed for the control of one single-circuit secondary or multi-circuit secondary constant current transformer and either one or two lamp circuits per transformer. Lamp circuits may be either arc or incandescent. Panels are for separate installation near the transformers they are to control and are not suitable for assembly in a switchboard.

Each panel Cat. No. includes panel with framework, 5-amp. Type AD ammeter with 10-amp. scale, current transformer, necessary oil circuit breakers mounted on back of panel, enclosed primary fuses, card holders and name plate.

Each wathour meter Cat. No. includes 110-volt, 5-amp. Type IS-4 single-phase wathour meter, current transformer and potential transformer with fuses and supports. Wathour meter is mounted on front of main panel and instrument transformers and fuses on the back.

### Panels for 1 Transformer and 1 or 2 Lamp Circuits

Normal Kw. Rating	Primary Fuses (Main Panel)	Current Transformer (Wattour Meter Subbase)	Panels for 1 Lamp Circuit		*Panels for 2 Lamp Circuits	
			Main Panel Cat. No.	Wattour Meter Subbase Cat. No.	Main Panel Cat. No.	Wattour Meter Subbase Cat. No.
5	4.0	10	2X518	2X538	2X528	2X548
10	6.0	20	2X519	2X539	2X529	2X549
15	10.0	30	2X520	2X540	2X530	2X550
20	12.0	40	2X521	2X541	2X531	2X551
25	15.0	50	2X522	2X542	2X532	2X552
30	20.0	60	2X523	2X543	2X533	2X553
40	25.0	80	2X524	2X544	2X534	2X554
50	30.0	80	2X525	2X545	2X535	2X555
60	40.0	100	2X526	2X546	2X536	2X556
70	40.0	125	2X527	2X547	2X537	2X557

Panel for 1 Transformer with 1 Lamp Circuit...each \$380.00

Panel for 1 Transformer with 2 Lamp Circuits...each 540.00

Subbases with Wattour Meters, for 1 or 2-Circuit

Panels.....each 240.00

\*Two-circuit panels up to and including 30 kw. are for transformers with single-circuit secondaries. Above 30 kw. panels are arranged for multi-circuit secondary transformers.

### Pellet Arresters—For Outdoor Service Only

Sgl. Pole Cat. No.	Normal Kw. Rating	Approx. Ship. Wt. Lbs.	Sgl. Pole Cat. No.	Normal Kw. Rating	Ship. Wt. Lbs.
9LA10A2	\$14.00	5-15	11	9LA10A6	\$46.00
9LA10A4	26.00	20-30	18	2596671G3	60.00
2596671G2	34.00	35 & 40	37		60 & 70

### Panels for 1 Transformer and 1 or 2 Lamp Circuits

Normal Kw. Rating	Primary Fuses (Main Panel)	Current Transformer (Wattour Meter Equipment)	Panels for 1 Lamp Circuit		*Panels for 2 Lamp Circuits	
			Main Panel Cat. No.	Wattour Meter Equipment Cat. No.	Main Panel Cat. No.	Wattour Meter Equipment Cat. No.
5	4.0	10	2X438	258606	2X450	258606
10	6.0	20	2X439	258607	2X451	258607
15	10.0	30	2X440	258608	2X452	258608
20	12.0	40	2X441	258609	2X453	258609
25	15.0	50	2X442	258610	2X454	258610
30	20.0	60	2X443	258611	2X455	258611
35	20.0	60	.....	.....	2X456	258612
40	25.0	80	.....	.....	2X457	258613
50	30.0	80	.....	.....	2X458	258614
60	40.0	100	.....	.....	2X459	258615
70	40.0	125	.....	.....	2X460	258616

Panel for 1 Transformer and 1 Lamp Circuit...each \$380.00

Panel for 1 Transformer and 2 Lamp Circuits...each 245.00

Wattour Meter Equipment for 1 Transformer with

1 or 2 Lamp Circuits per Transformer.....each 100.00

### Panels for 2 Transformers with 1 Lamp Circuit per Transformer

5	4.0	10	2X444	258617	.....
10	6.0	20	2X445	258618	.....
15	10.0	30	2X446	258619	.....
20	12.0	40	2X447	258620	.....
25	15.0	50	2X448	258621	.....
30	20.0	60	2X449	258622	.....

Panel for 2 Transformers with 1 Lamp Circuit per

Transformer.....each \$350.00

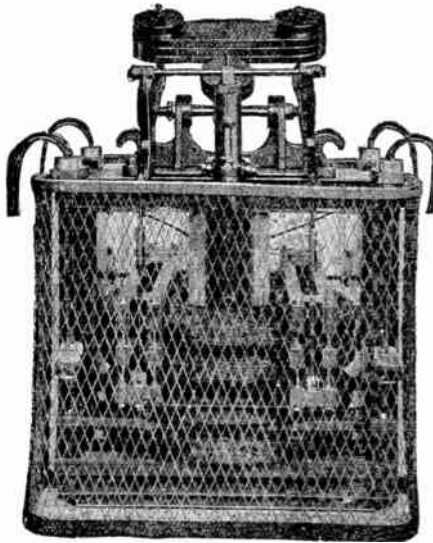
Wattour Meter Equipment for 2 Transformers with

1 Lamp Circuit per Transformer.....each 540.00

\*Two-circuit panels up to and including 30 kw. are for transformers with single-circuit secondaries. Above 30 kw. panels are arranged for multi-circuit secondary transformers.

**G-E Automatic Station Type RF Novalux Constant-Current Transformers**

For Operating A.C. 6.6-Ampere Series Lighting Loads  
 †2300 Volts (No Taps)—60 Cycles



Type RF with Cage

Designed for use in an unattended substation. Can be used for any indoor installation.

Built in practically any capacity and for any commercial voltage, frequency and secondary current; but it is recommended that, on account of the high secondary voltage, capacities not exceeding 20 kw. be operated with single-circuit secondary. Sizes from 25 to 70 kw. are furnished with multi-circuit secondary.

Can be started up automatically with coil together and with only one lamp on circuit, regardless of capacity of transformer. Current surge not sufficient to destroy lamp.

Transformers are not provided with any taps, either for voltage or for partial load operation. Because constant voltage is maintained in the stations, no primary voltage tap is necessary. Because of high inherent reactance of transformers, if a partial load tap is furnished, operating characteristic will be impaired.

Equipped with protective screening of expanded metal. Balancing mechanism supported on ball bearings.

Cat. No.	Each	Normal Kw. Rating	Primary Amp.	Trans. Kv-a. Input	Secondary Load Volts	Secondary Open Cr. Volts	APPROX. Wt. Lbs. Ship.	Net
3200500	\$960.00	5	3	6.9	758	1035	600	400
3200501	1120.00	10	6	13.8	1515	2070	750	575
3200502	1260.00	15	9	20.7	2275	3100	950	750
3200503	1340.00	20	12	27.6	3030	4130	1100	875
3200504	1560.00	25	15	34.5	3790	5175	1300	1050
3200505	1720.00	30	18	41.4	4550	6200	1650	1300
*3200506	2180.00	40	24	55.2	6060	8260	1850	1500
*3200507	2480.00	50	30	69.0	7580	10350	2200	1850
*3200508	2700.00	60	36	82.8	9100	12400	2550	2150
*3200509	3080.00	70	42	96.6	10600	14500	3000	2500

\*Built with multi-circuit secondary. Can be operated either single or multi-circuit.

†All of these transformers will operate from 2200 to 2400 volts. No primary voltage tap or partial load tap provided. If 80 per cent load tap is desired, add 10 per cent.

**G-E Pole Type RO Novalux Constant-Current Transformers**

For Operating 6.6-Amp. Series Lighting Loads  
 \*2300 Volts (with 2000-Volt Tap)—60 Cycles



The Type RO is a constant current transformer which operates automatically. It can be mounted on poles in remote districts or where subdivided downtown lighting circuits are desired. It can be controlled by Novalux controllers, time switch, or main oil switch at the station.

Built in sizes ranging from 1 to 30 kw., to operate at any commercial primary voltage and frequency or secondary current, but the standard transformer is for 60 cycles, 2300 volts on the primary and 6.6 amperes on the secondary. The 2300-volt transformer will operate satisfactorily on from 2200

to 2400 volts and a tap is provided on the primary for operation at 2000 volts without reduction of output.

The RO Transformer is positive and automatic in action, requiring no attendant or substitution for starting or shutting down. A Novalux controller or similar remote control device can be used for operating the transformer. These features are combined with the same current regulation through as wide a range as offered by the best station-type-constant-current transformer. This feature alone practically guarantees the normal life of the Mazda lamps operating on a circuit controlled by such a transformer. The efficiency is almost the same as for the station-type transformer and the power-factor is 80 per cent at maximum load.

The high internal reactance of the transformer serves to protect the lamps at starting and acts instantaneously to check surges on the line which would otherwise tend to shorten the life of the lamps.

The moving secondary coil with its high repulsion gives almost perfect regulation from full load to dead short circuit. This feature not only protects the lamps from changes in current, because of changes in secondary load, but also protects the lamps from fluctuations in primary voltage.

Prices include oil.

Lightning arresters must be used on transformers on both primary and secondary for protection.

Cat. No.	Each	Normal Kw. Rating	Primary Amp. at Any Load	Trans. Kv-a. Input at Any Load	Normal Secondary Load Volts	Secondary Open Circuit Volts	APPROX. Wt. Lbs. Ship.	Net
*3167901	\$580.	1	.66	1.52	152	225	260	200
*3167902	600.	2	1.26	2.90	303	430	275	215
**3167903	630.	3	1.93	4.44	454	660	360	285
**3167904	680.	5	3.15	7.25	757	1080	410	330
***3167905	720.	7.5	4.67	10.74	1137	1600	490	405
***3167906	800.	10	6.08	13.98	1515	2090	540	455
†3167907	920.	15	8.97	20.60	2272	3090	760	615
†3167908	1060.	20	11.94	27.46	3030	4115	835	700
†3167909	1230.	25	14.84	34.13	3787	5110	1085	950
†3167910	1360.	30	17.80	40.94	4545	6130	1210	1055

For special voltages other than 2300, information upon application. For special frequency (25, 30 or 40 cycles) in ratings up to and including 20 kw., add 30 per cent.

For 50 cycles, use 60-cycle prices.

For special frequency and special voltage, information upon application. For special secondary current only (from 5.5 to 20 amperes) use 6.6-ampere prices.

No. 10-C oil included in price: \*17 gallons; \*\*33 gallons; \*\*\*40 gallons; †65 gallons; †85 gallons.

‡Weight of oil not included; add 7 pounds per gallon.

†The 2300-volt tap is good for operation from 2200 to 2400 volts and an extra tap is provided for operation at 2000 volts.

**Hanger Hooks**

For Transformers...kw.	1, 2, 3, 5	7.5, 10	15, 20	25, 30
Wt., per Pair	30	40	50	60

## G-E Subway Type RO Novalux Constant-Current Transformers

For A.C. 6.6-Ampere Series Lighting Circuits  
Single-Circuit Secondaries



A constant-current transformer designed to operate automatically and be mounted in subways or manholes. It can be controlled by Novalux controllers or by any of the present methods of remote control.

Since poles carrying circuits overhead are being removed from many of the city streets, it was found desirable to use some type of transformer which could be mounted underground and thereby connected directly to the underground feeder circuits and to the underground street lighting circuits. This requirement resulted in the development of a subway type RO transformer.

This transformer is almost identical with the pole type, except that it is enclosed in a specially designed cast iron water-proof tank. It is necessary on the 25

and 30-kw. size subway transformer to construct it in a double-deck type, because of the necessity for the transformers to be narrow enough to be lowered and installed in a manhole, the cover of which is only 32 inches in diameter, maximum. The four leads are each brought out at a separate terminal.

Subway transformers are equipped with oil indicating plugs installed in the tanks to indicate the oil level without requiring the removal of the cover. The tanks should be filled with the top oil plug open until the oil runs out and then the plug should be closed. To test for oil level at any time the lower indicating plug should be opened. In case the oil does not flow out, this plug should be closed again and the top plug opened, additional oil being poured in until it flows therefrom. The plug should then be closed again.

If the primary circuit leads into the subway from overhead, pole-type cutouts can be used. If, however, the primary circuit is entirely underground, the D and W subway fuse cutouts must be used.

Prices include oil and hanger hooks.

Cat. No.	Each	Normal Kw. Rating	Primary Amp. at Load	Trans. Kv-a. at Load	Secondary Input Volts	Secondary Load Volts	Secondary Open Circuit Volts	Approx. Wt. Lbs.	
								Ship.	Net
*3200781	\$900	1	.66	1.52	152	225	640	440	
*3200782	920	2	1.26	2.90	303	430	675	475	
*3200783	940	3	1.93	4.44	454	660	705	505	
**3200784	980	5	3.15	7.25	757	1080	1025	825	
**3200785	1010	7.5	4.67	10.74	1137	1600	1100	900	
**3200786	1070	10	6.08	13.98	1515	2090	1150	950	
***3200787	1250	15	8.97	20.60	2272	3090	1310	1070	
***3200788	1500	20	11.94	27.46	3030	4115	1455	1155	
†(A)3200789	1710	25	14.84	34.13	3787	5110	1760	1560	
†(A)3200790	1830	30	17.80	40.94	4545	6130	1850	1700	
†(B)3200791	1710	25	14.84	34.13	3787	5110	2700	2475	
†(B)3200792	1830	30	17.80	40.94	4545	6130	2700	2475	

For special voltages other than 2300, information upon application.

For special frequency only (25, 30 or 40 cycles) in ratings up to and including 20 kw., add 30 per cent.

For 50 cycles, use 60-cycle prices.

For special frequency and special voltage, information upon application. For special secondary current only (from 5.5 to 20 amperes) use 6.6-ampere prices.

Fuses and cutouts not included in Cat. No. or price.

Lightning arresters must be used on all transformers for protection, if supply and load circuits are not entirely underground.

No. 10-C oil included in price: \*20 gallons; \*\*50 gallons; \*\*\*65 gallons; †95 gallons; ‡90 gallons.

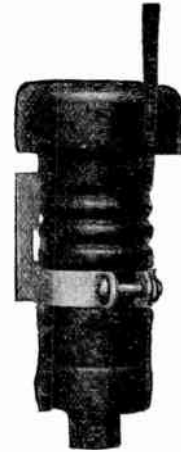
§Weight of oil not included; add 7 pounds per gallon.

2300-volt tap is good for operation from 2200 to 2400 volts; extra tap provided for operation at 2000 volts.

(A) single deck. (B) double deck.

## G-E Type RO Pellet Lightning Arresters

Pole and Subway Type—Outdoor Service Only



Recommended for protection of both the primary and secondary sides of constant-current transformers.

Pellet arresters are single-pole, for outdoor use on both the constant potential side and the load side of constant-current transformers. Each design has a minimum and maximum voltage rating and under no circumstances should it be applied to a circuit the voltage of which can exceed the arrester's maximum rating as shown in the table. Where selection of arresters for the protection of the load side of the transformer is to be made, the arresters should never be applied to a transformer of a larger kilowatt rating than shown in the table.

### For Protection of Primary Side of Transformers

Where Transformer Is Connected to a System, the Neutral of Which is Not Grounded

*Cat. No.	Each	Circuit Voltage	No. of Arresters Required at Installation	Std. Pkg.	Approx. Ship. Wt. Lbs.
9LA10A2	\$14.00	1900-3000	2	12	11
9LA10A4	26.00	3000-6000	2	12	18
2596671G2	34.00	6000-9000	2	6	37

### Where Transformer is Connected to a System with a Solidly and Dead Grounded Neutral

*Cat. No.	Each	Circuit Voltage	No. of Arresters Required at Installation	Std. Pkg.	Approx. Ship. Wt. Lbs.
9LA10A2	\$14.00	3000-5000	†	12	11
9LA10A4	26.00	6000-9000	‡	12	18

### For Protection of Load Side of Transformers

*Cat. No.	Each	**Kw. Rating of Transformers	Std. Pkg.	Approx. Ship. Wt. Lbs. Each in Std. Pkg.
†2906822G2	\$6.00	1, 2, 3	24	4
9LA10A2	14.00	5, 7.5, 10, 15	12	11
9LA10A4	26.00	20, 25, 30	12	18
2596671G2	34.00	35, 40	6	37
9LA10A6	46.00	50	6	37
9LA10A7	60.00	60, 70	6	47

\*Only for installations at altitudes below 6000 feet. For altitudes above 6000 feet, obtain special recommendations.

\*\*Secondary amperes 6.6 and 7.5.

†Compression chamber type.

‡where transformer is connected between an outside wire and neutral, use one pellet arrester on outside wire. Use also on neutral wire a compression arrester, Cat. No. 146187 (\$3.50 each, shipping weight 1.3 pounds; standard package 24) if voltage to ground is not over 300 volts; if, because of unbalancing, voltage is between 300 and 750 volts, use Cat. No. 2906822G3 (\$6.00 each, shipping weight 4 pounds; standard package 24). Use two arresters at an installation made between outside wires.



## G-E Novalux Protectors

## G-E Type CR7841-C Novalux Remote-Control Apparatus

For Use with Type RO Transformers and Novalux Controller



Open circuits in series street lighting systems are unavoidable, especially on aerial circuits, and it is desirable from the standpoint of "safety first", that when an open circuit does occur, the primary of the main transformer be de-energized. This Novalux protector has been developed to operate in conjunction with a CR7841 Novalux controller, and its function is to open up the switch in the controller as soon as an open circuit takes place.

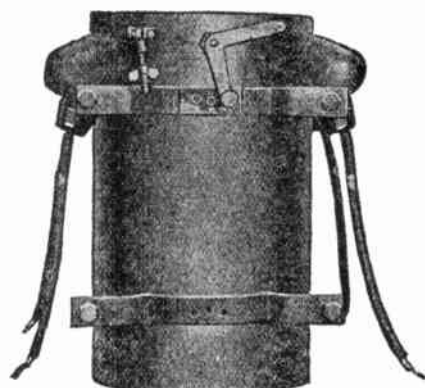
The mechanism of the Novalux protector consists of two relay contactors with armatures connected together through a horizontal dashpot. One of the relays is energized by the controlling circuit, the other by the load circuit to be protected. Under operating conditions, the contacts of the series control type are open and the contacts on the multiple control type are closed. When an "open" occurs in the load circuit, the relay in the load circuit becomes de-energized and the control relay contacts are closed on the series type (opened on the multiple type) thus de-energizing the operating coil of the controller. This allows the controller contacts to open, de-energizing the primary of the constant-current transformer.

After the "open" in the load circuit has been repaired, the protector can be reset (reconnecting the transformer to the main system) by means of a push rod conveniently located at the top of the protector.

The protector is housed in a cast iron casing. The working parts are submersed in oil for insulating and dampening purposes.

Cat. No.	Each	COIL RATING			*Ship. Wt. Lbs.
		Control Circuit	Protected Circuit Amperes	Type of Control Circuit	
3045291	\$132.00	6.6 Amps.	6.6	Series	60
3045292	132.00	6.6 Amps.	7.5	Series	60
3045293	132.00	7.5 Amps.	7.5	Series	60
3045294	132.00	7.5 Amps.	6.6	Series	60
3045295	132.00	110 Volts	6.6	Multiple	60
3045296	132.00	110 Volts	7.5	Multiple	60

\*Less Oil.



Pole Type Without Top

Designed to control Type RO pole or subway transformers by means of an adjacent series circuit or a multiple pilot-wire control circuit. With either series operating coil rated from 2.5 to 20 amperes at any frequency or with shunt operating coil at 110, 220, 440 volts, 50 or 60 cycles or 110, 220 volts, 25 cycles; in three types—normally operated, normally closed, latched-in. Also furnished for subway mounting when necessary. Switch is for use on any voltage up to and including 7500 volts and the most popular voltages with current ratings are as follows: At 7500 volts switch will break 15 amperes; 6600 volts, 25 amperes; 4500 volts, 35 amperes; 2300 volts, 50 amperes or 220 volts, 100 amperes. Operates at any frequency.



Subway Type

The wattage of operation coil is such that enough heat is generated to overcome any congealing effect and switch may be used in almost any weather condition which will be encountered in the northern hemisphere, without sluggish operation. The high-potential test on this controller is 25000 volts from power to control from power to ground, or from control to ground.

Pole type switch is mounted in pressed metal casing with cast iron cover which is not connected to switch mechanism.

Three moving parts—two readily replaceable contact tips and solenoid, together with necessary levers.

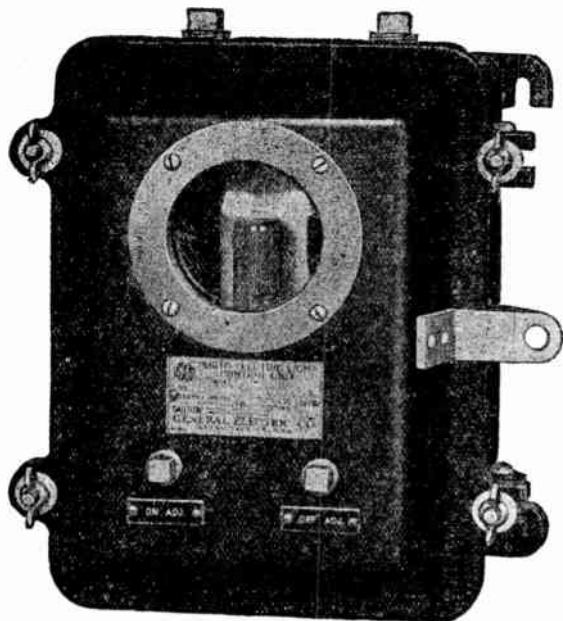
Subway design switch is same as pole type in respect to electrical characteristics. Tank and cover are cast iron. All connectors are arranged for wiped joints.

## All-Night Latch Type

Identical with the CR7841-C rated 7500 volts, 15 amperes, except that it is equipped with a special latch with following operation: When control circuit, either series or multiple, is first turned on, controller will engage and lock in. If control circuit fails or is disconnected, controller still remains engaged. If control circuit is again energized, controller still remains engaged but will be unlatched. When control circuit is again de-energized, controller will drop out. This is designated as the all-night latch type, CR7841-C5-11 (with series operating coil) and CR7841-C6-12 (with shunt operating coil).

The hand lever may be used to close the controller manually, and the controller may be disconnected by operating the control coil by means of the hand lever.

## G-E Type CR7505-H5 Novalux Photoelectric Controllers



For controlling sign lights, floodlights, street lighting circuits, airway and airport lighting. An efficient master of the lighting circuits which it controls by responding to changes in daylight intensity.

Cover has a window of clear glass which allows light to fall on phototube.

The device consists of phototube, Pliotron amplifying tube with associated apparatus, sensitive relay, thermal timer, CR2820-1713 relay and CR2810-1265 contactor. Controlling element is the phototube. With a voltage of proper magnitude and polarity applied between the two elements, the device passes a current proportional to the amount of light falling on it. The current (a few micro-amperes) which is set up in the phototube is amplified by a tube of the G-E Pliotron type. A sensitive relay is connected in plate current circuit of Pliotron, and is energized or de-energized in accordance with amount of light on phototube. Contactor is picked up and dropped out only when sensitive relay is in extreme "in" or "out" position, and then only after a few seconds time delay caused by thermal timer. With two adjustments, one of which controls intensity at which unit picks up in evening; the other controls intensity at which unit drops out in morning.

Contact ratings of 1265 relay: 15 amperes rating at 110 volts a.c.; 15 amperes, 220 volts a.c.; 10 amperes, 125 volts, d.c.; 5 amperes, 250 volts d.c.; 2.4 amperes, inductive load, 125 volts d.c.; 1.2 amperes, inductive load, 250 volts d.c. Rating of 1265 contactor would be 4 amperes at 110 volts a.c. with a lamp load.

Complete information and prices on application.

## G-E Type SL Novalux Series Transformers Subway and Aerial Types Protective Device and Film Cutouts

For 60-Cycle, 6.6-Ampere Constant-Current Circuits



Pole Type

The Type SL Transformer is an insulating transformer, the primary winding of which is energized from a long series circuit and the secondary of which is used for supplying current to a small number of lamps connected in series and located where the high potential of the ordinary current series circuit would be objectionable.

Certain classes of lighting require a lower potential than is found on long series lighting circuits, and yet as they function similarly, it is desirable to control them simultaneously with the street lights.

The Type SL Transformer affords an ideal method for this control as the low-voltage series circuit is turned on and off with the closing or opening of the main constant current transformer circuit.

Fixtures with series sockets and film cutouts must be used on these transformers.

The 0.04 to 1-kw. sizes contain no compound; 1 to 5-kw. sizes are compound filled; both are air-cooled. The 5, 7.5 and 10-kw. sizes are oil-filled.

Suspension hooks are furnished with all Type SL Transformers which have a capacity of over 4 kw. If cross arm suspension is required, specify hanger brackets.

Protective devices are included with the transformers except as noted. On subway-type transformers of 0.25 to 4-kw. capacity, the protective device is assembled in the cap of the transformer.



Subway Type

Kw. Output at Unity P-f. Load	Aerial Type			Subway Type		
	Cat. No. (6.6-Amp. Prim. and Secondary)	Each	Ship. Wt. Lbs.	Cat. No. (6.6-Amp. Prim. and Secondary)	Each	Ship. Wt. Lbs.
0.04	†195588	\$27.00	20	†195608	\$27.00	32
0.10	†195589	31.00	24	†195609	31.00	34
0.25	247012	48.00	36	†224345	48.00	47
0.50	247013	51.00	38	†224346	51.00	53
1.00	247014	66.00	68	†224347	66.00	75
2.00	247015	78.00	83	†224348	78.00	97
3.00	247016	100.00	126	†245953	100.00	140
4.00	15x863	142.00	174	†15x865	142.00	180
5.00	247018	191.00	290	247031	306.00	500
7.50	247019	234.00	400	247032	336.00	540
10.00	247020	264.00	470	247033	366.00	570

†Can also be furnished with 7.5-amp. primary and secondary; or 6.6 or 7.5-amp. primary and 15 or 20-amp. secondary.

‡Protective device not required and not included in these Cat. Nos. All other Nos. include protective device.

### Protective Device and Film Cutouts

Protective device and film cutout are the same for either 6.6 or 7.5-ampere secondary.

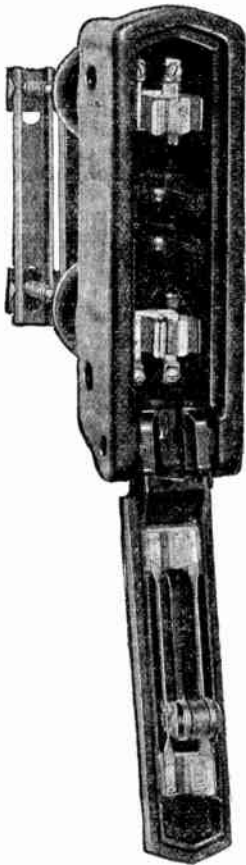
Protective devices are included in Cat. No. of SL transformer except as noted. This information is for ordering separate devices and film cutouts.

Transformer Output Kw.	Pole Type Protective Devices			Film Cutouts		
	Cat. No.	Each	Shipping Wt. Lbs.	Cat. No.	Each	Approx. Shipping Breakdown Wt., Lbs. per 100 Voltage
0.25	247063	\$7.50	10	4815602G2	\$6.50	50-100 1/4
0.50	247063	7.50	10	4815602G1	6.50	100-200 1/4
1.0	247064	7.50	10	4815602G3	6.50	250-350 1/4
2.0	6X605	7.50	10	6X611	30.00	350-525 3
3.0	6X606	7.50	10	6X612	30.00	525-790 3
4.0	6X607	7.50	10	6X613	30.00	700-1050 3
5.0	6X608	7.50	10	6X614	30.00	875-1310 3
7.5	6X609	7.50	10	6X615	30.00	1310-1950 3
10.0	6X610	7.50	10	6X616	30.00	1750-2625 3
Subway Type Protective Devices						
5.0	247069	\$24.00	10			
7.5	247070	24.00	10			
10.0	247071	24.00	10			



**G-E Novalux Cutouts**

For Type SL Transformers and Loop Sectionalizing Application



Cutout with Thyrite By-Pass

Disconnecting switch for Type SL transformers rated up to 10 kw., 6.6 to 20 amperes primary; 7.5 kw., 5 amperes primary.

For loops not exceeding 1500 volts (load voltage) 4 to 20 amperes.

Surge voltage by-pass when new Thyrite by-pass is included.

Open circuit shunt, short circuiting transformer or loop in case of sustained open circuit (as from broken line or burnt-out transformer) when Thyrite by-pass or film cutout is used.

Use on any series constant-current circuit up to 10000 volts (operating voltage) to ground, up to 20 amperes normal current.

Thyrite by-pass (or film cutout) must be used in all cases except where connected load consists of Type SL transformer with secondary protective device. If Novalux cutout with Thyrite by-pass or film cutout is used, secondary protective device can be omitted.

Standard package, 2; shipping weight, 27 pounds.

Cat. No. and price do not include Thyrite by-pass or film cutout.

Cat. No. 2991604G1,

Cutout with Cross-Arm Hanger ..... each \$23.00

Cat. No. 2991604G2,

Cutout with Channel Hanger ..... each 23.00

**Thyrite By-Pass**



Consists of small Thyrite cylinder, two metal end-caps with electrodes forming enclosed spark gap, and one fusible washer pressed on gap electrode.

Thyrite has a negative resistance characteristic, the resistance decreasing as applied voltage is increased.

The Thyrite cylinder is designed so that the rated maximum normal operating voltage produces negligible loss—in the order of 1 watt. A high voltage surge traveling on the line finds in it a low resistance path across the transformer or loop, however, and is therefore by-passed.

Extra heavy surges arc over the spark gaps without damage to cutout or connected apparatus. Power current flows only until end of first half cycle.

Sustained overvoltage due to open circuit in load greatly increases heating in Thyrite cylinder, melting fusible washer, mechanically completing circuit between end caps, short circuiting load. Time: approximately 1½ minutes, depending on voltage applied.

Cat. No.	Each	Maximum Normal Operating Voltage	Minimum Open Circuit Voltage	Color	Approx. Ship. Wt. Oz.
9F5A1	\$5.50	500	1000	Gray	2
9F5A2	5.50	750	1500	Blue-Black	2
9F5A3	5.50	1000	2000	Brown	2
9F5A4	5.50	1500	3000	Bright Red	2

**G-E Type IL Novalux Series Transformers**

For Use on 60-Cycle, 6.6-Ampere Constant-Current Circuits



Pole-Base Type

Allow the use of high efficiency series lamps where high potential is impracticable and unsafe. No film cutout is required; each lamp is independent of the others in circuit. In case of an accident to one or more, remainder of lamps on circuit burn without interruption.

For use with pendent units, transformers can be mounted on the cross arms of poles.

When lamp wattage varies between 8% above and 20% below normal, secondary current will not vary more than 1.0% with normal primary current and frequency.

**Single Light**

For operating one 6.6, 15, or 20-ampere series lamps from 6.6-ampere constant-current circuit.

Vault or Manhole Type with Primary and Secondary Detachable Couplings—Form B-55

Pole Base Type with Primary Coupling and Secondary Wiping Sleeve—Form B-5

Vault		Pole Base		LAMP RATING †Lumens	Amp.	Open Circuit Effective Voltage	Ship. Wt. Lbs.
Cat. No.	Each	Cat. No.	Each				
4X583	\$48.00	4X577	\$44.50	1000/2500	6.6	102	23
4X582	56.00	4X576	52.50	2500/4000	6.6/15	164	34
4X581	57.00	4X575	53.50	4000/6000	15/20	110	34
4X580	58.00	4X574	54.50	6000/10000	20	117	35
4X579	78.00	4X573	74.50	10000/15000	20	184	62
4X578	93.00	4X572	89.50	15000/25000	20	208	66

Pole Base Type with Wiping Sleeves—Form B-2  
Aerial Type with Porcelain Bushings—Form A-2

Wiping Sleeve		Aerial		LAMP RATING †Lumens	Amp.	Open Circuit Effective Voltage	Ship. Wt. Lbs.
Cat. No.	Each	Cat. No.	Each				
18X834	\$31.80			800/1000	6.6	102	19
4X571	34.00	4X565	\$34.00	1000/2500	6.6	102	19
4X570	41.50	4X564	41.50	2500/4000	6.6/15	164	27
4X569	42.00	4X563	42.00	4000/6000	15/20	110	29
4X568	43.00	4X562	43.00	6000/10000	20	117	30
4X567	64.00	4X561	64.00	10000/15000	20	184	56
4X566	80.00	4X560	80.00	15000/25000	20	208	60

**Two Light—In Series**

For operating two 6.6, 15, or 20-ampere Mazda series lamps (in series) from 6.6-ampere constant-current circuit.

Transformers operate two lamps (in series) on the secondary. To avoid interruption of service fixtures with series sockets and film cutouts must be used. If both lamps on secondary burn out transformers operate with secondary short circuited.

\*Pole Type Base with Primary Couplings and Secondary Wiping Sleeves—Form B-6

Cat. No.	Each	LAMP RATING		Amp.	Open Circuit Effective Voltage	Ship. Wt. Lbs.
		†Lumens	†Lumens			
286550	\$62.00	1000+1000	2500+2500	6.6	189	33
286549	76.20	2500+2500	4000+4000	6.6/15	312	51
286548	86.60	4000+4000	6000+6000	15/20	184	56
286547	97.00	6000+6000	10000+10000	20	195	64
286546	125.50	10000+10000	15000+15000	20	308	112

Pole Base Type with Wiping Sleeves—Form B-4

286545	\$51.00	1000+1000	2500+2500	6.6	189	28
286544	65.20	2500+2500	4000+4000	6.6/15	312	48
286543	75.60	4000+4000	6000+6000	15/20	184	50
286542	86.00	6000+6000	10000+10000	20	195	57
286541	114.50	10000+10000	15000+15000	20	308	107

Aerial Type with Porcelain Bushings—Form A-3

286540	\$51.00	1000+1000	2500+2500	6.6	189	28
286539	65.20	2500+2500	4000+4000	6.6/15	312	47
286538	75.60	4000+4000	6000+6000	15/20	184	49
286537	86.00	6000+6000	10000+10000	20	195	57
286536	114.50	10000+10000	15000+15000	20	308	107

Special transformers can be furnished for any commercial current, frequency, or lumen lamps. \*Can be furnished in vault type.

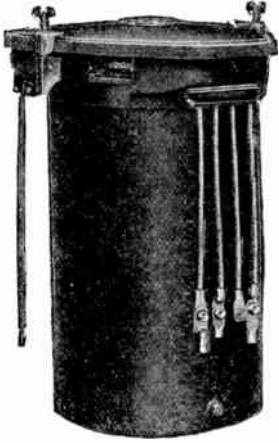
†1000/2500-lumen transformers are 1:1 ratio and secondary leads supply 6.6 amperes for both 1000 and 2500-lumen lamps. 2500/4000-lumen transformers have secondary leads supplying 6.6 amperes for 2500-lumen lamps and 15 amperes for 4000-lumen lamps. 4000/6000-lumen sizes also have leads which furnish 15 amperes for 4000-lumen lamps and 20 amperes for 6000-lumen lamps. 6000/10000, 10000/15000 and 15000/25000-lumen sizes have one set of secondary leads only supplying 20 amperes since the current required on all the leads is the same.

‡Maximum voltage which can be obtained by means of a voltmeter.

§Series sockets with film cutouts must be used with these transformers.



## G-E Type H Distribution Transformers Single-Phase, 60 Cycles, Self-Cooled



G-E Single-Phase Distribution Transformers are built on the distributed core, which has been found best adapted both electrically and mechanically to this type of transformer.

Various coil constructions have been developed to meet the particular requirements of designs depending upon unit size and voltage rating. In the larger sizes, circular coils of either disk or cylindrical form are used on account of their greatly superior mechanical qualities, and the facilities they give for rigid mechanical support.

The windings of these G-E Distribution Transformers are carefully dried and filled under

pressure with an insulating compound. This process not only removes all moisture from the insulation and seals the windings against the entrance of moisture, but also makes the winding a solid mass, thus giving it greater mechanical strength and heat conductivity. In the core-wound transformers this treatment is applied to the complete unit, consisting of core and coils. In the form-wound transformers the complete winding is treated as a unit before assembly on the core.

### For Nominal 440 or 550-Volt Circuits

**APPLICATION.**—By connection of the low voltage leads outside the tank, transformers are arranged for series, multiple or three-wire service.

**SERVICE.**—Suitable for outdoor or indoor installation.

**SUSPENSION HOOKS.**—Hooks are provided with, and included in the weight of all sizes up to 100 kv.-a., inclusive.

#### Name Plate Voltage Ratings: Line No. 1—480/456/432 to 120/240 Line No. 2—600/570/540 to 120/240

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Kv.-a. Cont. Rating 55° C. Rise	Oil Req. Gals.	Approx. Ship. Wt. Lbs. Incl. Oil
47X 1	47X14	1.5	3½	150
47X 2	47X15	3	4½	180
47X 3	47X16	5	6	260
47X 4	47X17	7.5	9	340
47X 5	47X18	10	11	410
47X 6	47X19	15	21	600
47X 7	47X20	25	27	810
47X 8	47X21	37.5	32	1075
47X 9	47X22	50	40	1360
47X10	47X23	75	54	1735
47X11	47X24	100	50	1900
47X12	47X25	150	70	2340
47X13	47X26	200	102	3340

### For Nominal 1150, 2300 and 4000Y-Volt Circuits

**APPLICATION.**—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—1250/2500/4330Y

Low Voltage Rating—125/250

By connection of the low-voltage leads outside the tank, transformers are arranged for series, multiple or 3-wire service.

**SERVICE.**—Suitable for outdoor or indoor installation.

**SUSPENSION HOOKS.**—Hooks are provided with, and included in weight, of all sizes up to 100 kv.-a., inclusive.

#### Name Plate Voltage Rating: 1200/2400/4160Y to 120/240

Cat. No.	Kv.-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil	Cat. No.	Kv.-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil
47X75	1.5	5¼	180	47X81	25	27	805
47X76	3	6	205	47X82	37.5	33	1070
47X77	5	8½	290	47X83	50	41	1345
47X78	7.5	9	340	47X84	75	54	1765
47X79	10	11½	415	47X85	100	50	1920
47X80	15	21	600				

## G-E Type H Distribution Transformers Single-Phase, 60 Cycles, Self-Cooled For Nominal 2300 or 4000Y-Volt Circuits

**APPLICATION.**—Transformers in Line 1 below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y

Low Voltage Rating—125/250

By connection of the low-voltage leads outside the tank, transformers having low-voltage rating of 120/240 are arranged for series, multiple or 3-wire service. Transformers having low-voltage rating of 240/480 are suitable for series and multiple service only.

**SERVICE.**—Suitable for indoor or outdoor installation.

**SUSPENSION HOOKS.**—Hooks are provided with, and included in weight of all sizes up to 100 kv.-a., inclusive.

#### Name Plate Voltage Rating: Line No. 1—2400/4160Y to 120/240 Line No. 2—2400/4160Y to 240/480

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Kv.-a. Cont. Rating 55° C. Rise	Oil Req. Gals.	Approx. Ship. Wt. Lbs. Incl. Oil
47X27	47X43	1.5	3½	150
47X28	47X44	3	4½	180
47X29	47X45	5	6½	265
47X30	47X46	7.5	9	340
47X31	47X47	10	11½	415
47X32	47X48	15	21	600
47X33	47X49	25	27	800
47X34	47X50	37.5	30	1055
47X35	47X51	50	38	1330

### For Nominal 2300 and 4000Y-Volt Circuits

**APPLICATION.**—Transformers listed in Line 1 below are also suitable for operation as follows:

High Voltage Rating—2500/4330Y/2375/2250

Low Voltage Rating—125/250

By connection of the low-voltage leads outside the tank, transformers are arranged for series and multiple service. Transformers having low-voltage rating 240/480 are suitable for series and multiple service only.

**SERVICE.**—Suitable for outdoor or indoor installation.

**SUSPENSION HOOKS.**—Hooks are provided with, and included in weight of all sizes up to 100 kv.-a., inclusive.

#### Name Plate Voltage Rating: Line No. 1—2400/4160Y/2280/2160 to 120/240 Line No. 2—2400/4160Y/2280/2160 to 240/480

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Kv.-a. Cont. Rating 55° C. Rise	Oil Req. Gals.	Approx. Ship. Wt. Lbs. Incl. Oil
47X 97	47X106	1.5	3½	150
47X 98	47X107	3	4½	180
47X 99	47X108	5	6	260
47X100	47X109	7.5	9	340
47X101	47X110	10	11	410
47X102	47X111	15	21	600
47X103	47X112	25	27	800
47X104	47X113	37.5	32	1075
47X105	47X114	50	40	1350
47X 36	47X 52	75	54	1755
47X 37	47X 53	100	50	1910
47X 38	47X 54	150	69	2285
47X 39	47X 55	200	103	3350

### For Nominal 2300 or 4000Y-Volt Circuits

**SERVICE.**—Suitable for outdoor or indoor installations.

**SUSPENSION HOOKS.**—Hooks are provided with, and included in weight of all sizes up to 100 kv.-a., inclusive.

#### Name Plate Voltage Rating: 2400/4160Y to 600

Cat. No.	Kv.-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil	Cat. No.	Kv.-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil
47X59	1.5	3½	150	47X66	37.5	30	1055
47X60	3	4½	180	47X67	50	38	1330
47X61	5	6½	265	47X68	75	54	1755
47X62	7.5	9	340	47X69	100	50	1910
47X63	10	11½	415	47X70	150	69	2285
47X64	15	21	600	47X71	200	101	3050
47X65	25	27	800				

**G-E Type H Distribution Transformers**

**Single-Phase, 60 Cycles, Self-Cooled**

**For Nominal 2200 and 3810Y-Volt Circuits**

APPLICATION.—By connection of the low-voltage leads outside the tank, transformers are arranged for series, multiple or 3-wire service, with the exception of sizes 150 and 200 kv-a., which are suitable for series and 3-wire service only.

SERVICE.—For outdoor and indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight of all sizes up to 100 kv-a., inclusive.

**Name Plate Voltage Rating:  
2200/3810Y to 122/244**

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil
79041	1.5	3 1/4	150	198392	37.5	32	1060
79044	3	4 1/2	180	165759	50	40	1340
165751	5	6	260	165760	75	54	1755
165752	7.5	9	340	165761	100	50	1850
165753	10	11	410	172741	150	69	2225
165754	15	21	595	172742	200	102	3290
165756	25	27	790	.....	.....	.....	.....

**For Nominal 3300-Volt Circuits**

APPLICATION.—By connection of the low-voltage leads outside the tank, transformers are arranged for series, multiple or 3-wire service, with the exception of sizes 150 and 200 kv-a., which are suitable for series and 3-wire service only.

SERVICE.—Suitable for outdoor and indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight of all sizes up to 100 kv-a., inclusive.

**Name Plate Voltage Rating:  
3300 to 122/244**

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil
79162	1.5	3 1/4	155	198404	37.5	32	1075
79165	3	4	195	79175	50	40	1340
79167	5	6	295	78972	75	54	1715
79168	7.5	9	335	78973	100	50	1880
79169	10	11	410	172732	150	69	2245
79170	15	21	590	172733	200	102	3300
79172	25	27	800	.....	.....	.....	.....

**For Nominal 4000-Volt Circuits**

These transformers are to provide service where it is more economical or desirable to connect transformers across phases than between line and neutral on 2300-4000-volt Y circuits. The use of these transformers give the same service voltages as 10:1 ratio transformers connected between line and neutral.

APPLICATION.—Transformers listed below are also suitable for operation as follows:

High Voltage Rating—4330/4114/3898

Low Voltage Rating—125/250

By connection of low-voltage leads outside the tank, transformers are arranged for series, multiple or 3-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight of all sizes up to 100 kv-a., inclusive.

**Name Plate Voltage Rating:  
4160/3052/3744 to 120/240**

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil
47X115	1.5	3 1/2	150	47X122	37.5	33	1055
47X116	3	4 1/2	180	47X123	50	41	1370
47X117	5	6	260	47X124	75	54	1715
47X118	7.5	9	330	47X125	100	50	1880
47X119	10	11	410	47X126	150	69	2285
47X120	15	21	595	47X127	200	103	3300
47X121	25	27	790	.....	.....	.....	.....

**G-E Type H Distribution Transformers**

**Single-Phase, 60 Cycles, Self-Cooled**

**For Nominal 2300-4000Y-4600 and 8000Y-Volt Circuits**

APPLICATION.—Transformers listed in Line 1 below are also suitable for operation as follows:

High Voltage Rating—2500/5000/8660Y

Low Voltage Rating—125/250

By connection of low-voltage leads outside the tank, transformers are arranged for series, multiple or 3-wire service. Transformers having low voltage rating 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with all sizes up to 100 kv-a., inclusive. Transformers weights include suspension hooks up to 100 kv-a., inclusive.

High voltage windings of sizes 150 and 200 kv-a. have taps for 2280/2160/4560/4320.

**Name Plate Voltage Rating:  
Line No. 1—2400/4800/8320Y to 120/240  
Line No. 2—2400/4800/8320Y to 240/480**

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil	Line No. 1 Cat. No.	Line No. 2 Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil
47X128	47X144	1.5	5 1/4	175	47X135	47X151	37.5	33	1095
47X129	47X145	3	4 1/2	185	47X136	47X152	50	41	1375
47X130	47X146	5	8 1/2	285	47X137	47X153	75	54	1715
47X131	47X147	7.5	9	335	47X138	47X154	100	50	1880
47X132	47X148	10	11	405	47X139	47X155	150	69	2275
47X133	47X149	15	21	590	47X140	47X156	200	103	3300
47X134	47X150	25	27	790	.....	.....	.....	.....	.....

**For Nominal 2200, 3810Y, 4400 and 7620Y-Volt Circuits**

APPLICATION.—By connection of low-voltage leads outside the tank, transformers are arranged for series, multiple or 3-wire service, with the exception of 150 and 200 kv-a. which are suitable for series and 3-wire service only.

SERVICE.—For outdoor or indoor installation.

SUSPENSION HOOKS.—Hooks are provided with, and included in weight of all sizes up to 100 kv-a., inclusive.

**Name Plate Voltage Rating:  
2200/4400/7620Y to 122/244**

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil
224952	1.5	5 1/4	175	198390	37.5	33	1085
195639	3	4 1/2	185	79917	50	41	1360
195640	5	8 1/2	285	79918	75	54	1715
79910	7.5	9	335	79919	100	50	1880
79911	10	11	405	172726	150	69	2295
79912	15	21	590	172727	200	102	3300
79914	25	27	790	.....	.....	.....	.....

**For Nominal 6600 and 11000Y-Volt Circuits**

APPLICATION.—For operation on 6600-volt circuits and for supplying service voltages 600 and below. Transformers listed below are also suitable for operation as follows:

High Voltage Rating—7200/12470Y/6875/6545/6220\* to

Low Voltage Rating—120/240, 240/480 or 600

By connection of low-voltage leads outside the tank, transformers having low voltage rating of 115/230 are arranged for series, multiple or 3-wire service. Transformers having low voltage rating of 230/460 are suitable for series and multiple service only. For indoor or outdoor use.

SUSPENSION HOOKS.—Provided with, and included in the weight of all sizes up to 50 kv-a., inclusive.

**Name Plate Voltage Rating:  
Line No. 1—6900/11950Y/6585/6275/5960\* to 115/230  
Line No. 2—6900/11950Y/6585/6275/5960\* to 230/460  
Line No. 3—6900/11950Y/6585/6275/5960\* to 575**

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Line No. 3 Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Shp. Wt. Lbs. Incl. Oil	Approx. Shp. Wt. Lbs. Incl. Oil
47X176	47X192	47X208	1.5	5	220	220
47X177	47X193	47X209	3	7 1/2	310	310
47X178	47X194	47X210	5	8	335	335
47X179	47X195	47X211	7.5	9 1/2	390	390
47X180	47X196	47X212	10	8	435	435
47X181	47X197	47X213	15	16	705	705
47X182	47X198	47X214	25	31	1025	1025
47X183	47X199	47X215	37.5	30	1195	1195
47X184	47X200	47X216	50	37	1470	1470
47X185	47X201	47X217	75	50	1965	1965
47X186	47X202	47X218	100	48	2100	2100
47X187	47X203	47X219	150	70	2645	2645
47X188	47X204	47X220	200	150	4240	4240

\*Taps for 5960 and 6220 volts are for reduced capacity.

## G-E Type H Distribution Transformers

Single-Phase, 60 Cycles, Self-Cooled  
For Nominal 6600 and 11000Y-Volt Circuits

APPLICATION.—For operation on 6600-volt circuits and for supplying 2300 or 4000-volt distribution and motors.

Transformers having voltage rating of 6600/11430Y to 2300 are, when operated in bank, suitable for transforming from 6600 to 2300; from 6600 to 4000Y or from 11430Y to 2300. They should not be used connected in Y on both high- and low-voltage sides simultaneously to transform from 11430Y to 4000Y as this connection may result in the presence of excessive stresses in the windings due to harmonic voltages.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with and included in the weight of all sizes up to 50 kv-a., inclusive.

**Name Plate Voltage Rating:**  
6600/11430Y/6270/5940 to 2300

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil
47X224	5	8	330	47X230	50	37	1470
47X225	7 5	9 1/2	385	47X231	75	50	1915
47X226	10	8 1/4	445	47X232	100	48	2050
47X227	15	16	695	47X233	150	70	2620
47X228	25	31	1025	47X234	200	150	4130
47X229	37 5	30	1170				

**For Nominal 11000-Volt Circuits**

APPLICATION.—For 11000-volt circuits and for supplying service voltages 600 and below. Transformers of these name plate ratings are also suitable for operation as follows:

High Voltage Rating—12000/11400/10800 to

Low Voltage Rating—120/240, 240/480 or 600

By connection of low-voltage leads outside the tank, transformers having low-voltage rating of 115/230 are arranged for series, multiple or 3-wire service. Transformers having low voltage rating of 230/460 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Provided with and included in weight of all sizes up to 50 kv-a., inclusive.

**Name Plate Voltage Rating:**  
Line No. 1—11500/10925/10350 to 115/230  
Line No. 2—11500/10925/10350 to 230/460  
Line No. 3—11500/10925/10350 to 575

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Line No. 3 Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Approx. Ship. Wt. Lbs. Incl. Oil
47X238	47X252	47X266	2.5	7 1/2	305
47X239	47X253	47X267	5	8	335
47X240	47X254	47X268	10	8	450
47X241	47X255	47X269	15	16	690
47X242	47X256	47X270	25	31	1025
47X243	47X257	47X271	37.5	30	1170
47X244	47X258	47X272	50	37	1480
47X245	47X259	47X273	75	50	1930
47X246	47X260	47X274	100	48	2100
47X247	47X261	47X275	150	70	2630
47X248	47X262	47X276	200	150	4210

**For Nominal 11000-Volt Circuits**

APPLICATION.—For operation on 11000-volt circuits and for supplying 2300 or 4000 volt distribution and motors.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a. inclusive. Transformer weights include suspension hooks up to 50 kv-a. inclusive.

**Name Plate Voltage Rating:**  
11000/10450/9900 to 2300/4000Y

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil
47X280	5	8	330	47X285	50	37	1435
47X281	10	8 1/4	445	47X286	75	50	1925
47X282	15	16	635	47X287	100	48	2070
47X283	25	31	990	47X288	150	70	2620
47X284	37.5	30	1140	47X289	200	150	4130

## G-E Type H Distribution Transformers

Single-Phase, 60 Cycles, Self-Cooled  
For Nominal 13200-Volt Circuits

APPLICATION.—For 13200-volt circuits and for supplying service voltages 600 and below. Transformers in Line 1 are also suitable for operation as follows:

High Voltage Rating—13750/13060/12375 to

Low Voltage Rating—125/250

By connection of low-voltage leads outside the tank, transformers having low-voltage rating of 120/240 are arranged for series, multiple or 3-wire service. Transformers having low-voltage rating of 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installations.

SUSPENSION HOOKS.—Provided with and included in weights of all sizes up to 50 kv-a., inclusive.

**Name Plate Voltage Rating:**

Line No. 1—13200/12540/11880 to 120/240

Line No. 2—13200/12540/11880 to 240/480

Line No. 3—13200/12540/11880 to 600

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Line No. 3 Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Approx. Ship. Wt. Lbs. Incl. Oil
47X293	47X307	47X321	2.5	7 1/2	305
47X294	47X308	47X322	5	8	330
47X295	47X309	47X323	10	8 1/4	425
47X296	47X310	47X324	15	16	690
47X297	47X311	47X325	25	31	1020
47X298	47X312	47X326	37.5	30	1160
47X299	47X313	47X327	50	37	1480
47X300	47X314	47X328	75	50	1915
47X301	47X315	47X329	100	48	2090
47X302	47X316	47X330	150	70	2645
47X303	47X317	47X331	200	150	4345

**For Nominal 13200-Volt Circuits**

APPLICATION.—For operation on 13200-volt circuits and for supply 2400 or 4160Y-volt distribution and motors.

SERVICE.—For outdoor or indoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a., inclusive. Transformer weights include suspension hooks up to 50 kv-a., inclusive.

**Name Plate Voltage Rating:**

13200/12540/11880 to 2400/4160Y

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil
47X335	5	8	325	47X340	50	37	1460
47X336	10	8 1/4	420	47X341	75	50	1905
47X337	15	16	680	47X342	100	48	2060
47X338	25	31	1005	47X343	150	70	2610
47X339	37.5	30	1150	47X344	200	150	4155

**For Nominal 22000-Volt Circuits**

APPLICATION.—For operation on 22000-volt circuits and for supplying service voltages 600 and below. By connection of low-voltage leads outside the tank, transformers having low-voltage rating of 120/240 are arranged for series, multiple or 3-wire service. Transformers having low-voltage rating of 240/480 are suitable for series and multiple service only.

SERVICE.—Suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Not provided with these transformers.

**Name Plate Voltage Rating:**

22000/20900/19800 to 120/240

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil
47X349	10	44	1100	47X354	75	90	2560
47X350	15	41	1165	47X355	100	99	2950
47X351	25	51	1480	47X356	150	144	3780
47X352	37.5	57	1705	47X357	200	143	4200
47X353	50	55	1845				



**G-E Type HT Distribution Transformers**

3-Phase, 60 Cycles, Self-Cooled

APPLICATION.—Terminal board is provided on the low-voltage side for either series or multiple connection.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a. inclusive, for voltage ratings 13800 and below.

BRACKETS.—Brackets for supporting the high-voltage leads are regularly furnished with all sizes up to 50 kv-a. inclusive, for voltage 13800 and below.

**For Nominal 2300 and 4000Y-Volt Circuits**

Name Plate Voltage Rating:

\*High Voltage Rating—2400/4160Y to Low Voltage Rating—240/480

Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil	Cat. No.	Kv-a. Cont. 55° C. Rise	Oil Req. Gals.	Ship. Wt. Lbs. Incl. Oil
47X525	15	24	995	47X530	100	60	2765
47X526	25	36	1285	47X531	150	63	3440
47X527	37.5	42	1620	47X533	200	101	4220
47X528	50	54	1955				

**For Nominal 4600-Volt Circuits**

Name Plate Voltage Rating:

High Voltage Rating—4800Y/4560Y/4320Y to Low Voltage Rating—240/480

47X547	10	13	735	47X552	75	50	2125
47X548	15	24½	985	47X553	100	60	2745
47X549	25	36½	1270	47X554	150	64	3415
47X550	37.5	42	1610	47X555	200	102	4200
47X551	50	53	1955				

**For Nominal 6600-Volt Circuits**

Name Plate Voltage Rating:

High Voltage Low Voltage

6900Y/655Y/6210Y to 230/460

7200Y/6840Y/6480Y to 240/480

47X569	10	25	970	47X574	75	66	2530
47X570	15	39	1195	47X575	100	79	2985
47X571	25	47½	1455	47X576	150	107	3975
47X572	37.5	57	1880	47X577	200	121	4490
47X573	50	56	2020				

**For Nominal 11000-Volt Circuits**

Name Plate Voltage Rating:

High Voltage Rating—11500Y/10925Y/10350Y to Low Voltage Rating—230/460

47X602	10	26	975	47X607	75	68	2610
47X603	15	40	1205	47X608	100	80	2970
47X604	25	48	1450	47X609	150	109	3930
47X605	37.5	57	1855	47X610	200	121	4460
47X606	50	57	2010				

**For Nominal 13200-Volt Circuits**

Name Plate Voltage Rating:

High Voltage Rating—13200Y/12540Y/11880Y to Low Voltage Rating—240/480

47X635	15	40	1205	47X639	75	68	2600
47X636	25	48	1430	47X640	100	81	2965
47X637	37.5	58	1850	47X641	150	110	3920
47X638	50	57	1990	47X642	200	122	4430

**For Nominal 22000-Volt Circuits**

Name Plate Voltage Rating:

High Voltage Rating—22000Y/20900Y/19800Y to Low Voltage Rating—240/480

47X666	37.5	167	2970	47X669	100	162	3570
47X667	50	163	3070	47X670	150	171	3850
47X668	75	163	3390	47X671	200	173	4520

**For Nominal 33000-Volt Circuits**

Name Plate Voltage Rating:

High Voltage Rating—33000Y/31350Y/29700Y to Low Voltage Rating—240/480

47X692	50	206	3780	47X695	150	223	4680
47X693	75	200	4040	47X696	200	223	5330
47X694	100	221	4410				

\*High voltage winding on size 200 kv-a. has taps for 2280/2160.

**G-E Air-Cooled Transformers**

Type M—For Indoor and Outdoor Service

Type D—For Indoor Service Only

G-E Air-Cooled Transformers have a wide range of applications on circuits 600 volts and below. Such applications include supplying the proper voltage for special lamps, tools, bells, buzzers, airport lights, brazing, welding, testing and industrial heating equipment. They are also used for insulating circuits to promote safety, operating lights and portable tools from power circuits, boosting voltage, phase changing and many other unusual applications.



Type M Transformer

In transformers rated 10 kv-a. and below, as well as auto-transformers of equivalent physical size, the Type M construction is used. It forms a solid, compact unit which dissipates heat from its external surfaces by radiation. In the larger sizes, the Type D, natural-draft construction is used. The transformer is effectively cooled by air currents which enter ventilating holes in the housing and circulate around the core and coils.

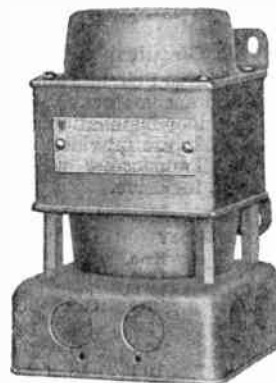
The transformer is effectively cooled by air currents which enter ventilating holes in the housing and circulate around the core and coils.

These transformers are built in standard ratings up to 50 kv-a. and 600 volts, 60 cycles. Special transformers, up to 200 kv-a. for 60-cycle circuits, are built from an extensive line of standardized parts, economically and for quick delivery. They are applicable to circuits of 600 volts and below.



Type D Transformer

Type M transformers, with the exception of the larger sign-lighting and boosting transformers, may be adapted to enclosed wiring installations through the addition of a junction box directly over the leads and bushing. The junction box can readily be attached to units already installed as well as to new transformers.



Small Type M Transformer with Junction Box

The 90-degree junction boxes can be provided for Type D transformers. These facilitate conduit connections, as they can be mounted on the cover plate in four different positions. The use of this box is optional with standard Type D single-phase units, as conduit may be run directly into the side plates. However in phase-changing and special units, the leads of which are brought through the cover these junction boxes must be used for conduit connection. In all Type D transformers separate boxes are required for primary and secondary leads.

## G-E Transformers Used as Auto-Transformers for Boosting Voltage

Air Cooled, Single or 3-Phase, 60 Cycles

Transformers for sign lighting are extensively used for boosting single or 3-phase circuits by connecting them as auto-transformers. They are particularly adapted for boosting the 3-phase voltage of a secondary network system.

As they can be connected in series or in multiple, a 5, 10 or 20 per cent boost is possible as shown in the tabulation below. Because of the small voltage change required in such applications, the output of these small transformers is exceedingly large in comparison with their physical size.

The kv-a. output of one single-phase unit, connected as an auto-transformer, is one-third of the bank output.

Unit Kv-a. of Transformer	Kv-a. BANK OUTPUT—3 UNITS Y CONNECTED AS AUTO-TRANSFORMERS—WHEN CONNECTED FOR THESE RATIOS			
	199Y to 220Y	199Y to 239Y	398Y to 420Y	398Y to 440Y
.100	3.3	1.8	6.3	3.3
.250	8.25	4.5	15.75	8.25
.500	16.5	9	31.7	16.5
.750	24.75	13.5	47.25	24.75
1	33	18	63	33
1.5	49.5	27	94.5	49.5
2	66	36	126	66
3	99	54	189	99
5	165	90	315	165

## 3-Phase Y-Connected Auto-Transformers Type M—For Indoor or Outdoor Service

The Y-connected auto-transformers listed below are designed primarily to boost the voltage of a 3-phase secondary network system. They give the desired voltage at the minimum cost. Because of the small physical size as compared to the kv-a. output of the bank, an installation very compact and neat in appearance is obtained.

Auto-transformers of the ratings listed consist of three units with three leads brought out of each unit. In banks with a rated output of 50 kv-a. and below, the three units are mounted side by side on a metal plate. The larger banks consist of three separate units to be individually mounted.

Although the 208 to 230-volt transformation is most common, a great many special ratios are required such as 199 to 230 volts, or 208 to 230 and 240 volts. Auto-transformers of all these special ratios can be furnished quickly and economically as the same parts and construction are used as on the listed ratings.

Care should be exercised in ordering auto-transformers that the installation will meet local electrical inspector's requirements.

Because of the heavy secondary leads and complications in connections, standard junction boxes are not recommended. When enclosed wiring is desired, a modified design can be furnished.

Primary 199Y 208Y Volts—Secondary 220Y 230Y Volts  
3 Units Mounted Side by Side on Metal Plate

Cat. No.	Each	Kv-a. Output Cont. 55° C. Rise	Depth Inches	Wall Space Inches	Approx. Ship. Wt. Lbs.
9AM632A	\$58.00	1	3 1/2	12 7/8 x 4 1/8	22
9AM633A	71.00	2	3 1/2	12 7/8 x 4 3/8	25
9AM634A	80.00	3	3 1/2	12 7/8 x 4 3/4	28
9AM635A	89.00	5	3 1/2	12 7/8 x 5 3/8	36
9AM636A	97.00	7.5	4 3/8	17 x 9 1/2	62
9AM637A	106.00	10	4 3/8	17 x 10	70
9AM638A	119.00	15	4 3/8	17 x 10 7/8	85
9AM639A	145.00	25	5 1/8	19 x 12 1/4	120
9AM640A	175.00	37.5	5 1/8	19 x 13 3/8	140
9AM641A	200.00	50	5 7/8	22 x 12 1/2	200

### 3 Separate Units to be Individually Mounted

Weight and dimensions of individual units; 3 furnished.

9AM642A	\$250.00	75	6	7 5/8 x 13 1/2	85
9AM643A	310.00	100	6	7 5/8 x 15	105
9AM644A	411.00	150	7 5/8	9 5/8 x 22 1/2	175
9AM645A	502.00	200	7 5/8	9 5/8 x 24	200
9AM646A	598.00	250	7 5/8	9 5/8 x 26 1/2	250
9AM647A	704.00	300	10 5/8	11 3/4 x 23	350

## G-E Transformers and Auto-Transformers for Phase Changing

Air-Cooled, 3 to 2, or 2 to 3-Phase, 50 or 60 Cycles

### Type M—For Indoor or Outdoor Service

### Type D—For Indoor Service Only

Phase-changing transformers and auto-transformers are primarily of use when a phase change is made on a distribution system. They permit the economical use of motors and other polyphase equipment which would otherwise become obsolete.

The two lines of auto-transformers are not interchangeable and it is necessary to determine whether the 2-phase circuit is 3-wire or 4-wire in order to select the proper unit. These auto-transformers cannot be used on a 4-wire circuit having the mid-points of the two phases connected together. For this application, the 2-winding transformer is recommended, although especially designed auto-transformers can be furnished.

### Type M Transformers

3-Phase	220	230	240	2-Phase	220	230	240
							3 or 4-Wire

Cat. No.	Each	Kv-a. Output Cont. 55° C. Rise	Depth Inches	Wall Space Inches	Approx. Ship. Wt. Lbs.	*Junction Box Cat. No.
9TM855A	\$105.00	1	4 1/2	5 1/2 x 16 1/8	60	
9TM856A	150.00	3	5 1/8	6 1/2 x 23 3/4	110	22X646
9TM857A	200.00	5	6	7 5/8 x 26 7/8	185	or
9TM858A	256.00	7.5	7	8 1/2 x 29 5/8	235	22X647
9TM859A	315.00	10	7	8 7/8 x 32 1/8	280	
9TM860A	425.00	15	7 5/8	9 5/8 x 32 3/8	335	501269G1

### Type D Transformers

3-Phase	220	230	240	2-Phase	220	230	240
							3 or 4-Wire

9TD211A	610.00	25	†26 1/4	†15 3/4 x 32	675	Use two 2105286
9TD212A	775.00	37.5	†26 1/4	†16 1/2 x 33	850	
9TD213A	925.00	50	†26 1/4	†17 1/2 x 35 3/4	1050	

### Type M Auto-Transformers for 2-Phase 4-Wire

3-Phase	220	230	240	2-Phase	220	230	240
							4-Wire

9AM813A	\$70.00	1	3 3/8	3 5/8 x 9 1/8	22X648
9AM814A	90.00	3	3 3/8	4 7/8 x 15	
9AM815A	106.00	5	4 1/2	5 1/2 x 15 3/4	or
9AM816A	120.00	7.5	4 1/2	5 1/2 x 18 1/8	22X649
9AM817A	135.00	10	5 1/8	6 1/2 x 19 1/2	501269G2
9AM818A	155.00	15	5 1/8	6 1/2 x 22	
9AM819A	205.00	25	6	7 5/8 x 25 1/2	
9AM820A	265.00	37.5	7	8 7/8 x 29 1/4	
9AM821A	325.00	50	7 5/8	9 5/8 x 28 7/8	

### \*\*Type M Auto-Transformers for 2-Phase 3-Wire

3-Phase	220	230	240	2-Phase	220	230	240
							3-Wire

9AM822A	\$74.00	1	3 3/8	3 5/8 x 11 1/2	22X648
9AM823A	98.00	3	3 3/8	4 7/8 x 16 3/8	
9AM824A	114.00	5	4 1/2	5 1/2 x 14 3/4	or
9AM825A	132.00	7.5	5 1/8	6 1/2 x 19 1/2	22X649
9AM826A	146.00	10	5 1/8	6 1/2 x 22	501269G2
9AM827A	180.00	15	6	7 5/8 x 23 1/4	
9AM828A	245.00	25	7	8 7/8 x 27 1/4	
9AM829A	325.00	37.5	7 5/8	9 5/8 x 27 5/8	
9AM830A	400.00	50	7 5/8	9 5/8 x 30 7/8	

\*Not included in price or weight of transformer.

\*\*Care should be exercised in ordering auto-transformers that the installation will meet local electrical inspector's requirements.

†Height.

‡Floor space.

**Standard Junction Boxes for Types M and D Transformers**

Cat. No.	Each	Conduit Size, In.	Dimensions Inches	Ship. Wt. Lbs.
4255645G1	\$2.00	1/2	4 x4 x1 5/8	1 5/8
4255645G2	2.00	1/2	4 x4 x1 5/8	1 1/2
22X646	2.00	3/4	4 3/4 x4 3/4 x2 1/8	2 5/8
22X647	2.00	1	4 3/4 x4 3/4 x2 1/8	2 5/8
22X648	2.00	3/4	4 3/4 x4 3/4 x2 1/8	2 1/2
22X649	2.00	1	4 3/4 x4 3/4 x2 1/8	2 1/2
5012696G1	2.00	1 & 1/4	4 3/4 x4 3/4 x2 1/4	2 5/8
5012696G2	2.00	1 & 1/4	4 3/4 x4 3/4 x2 1/4	2 1/2
2105285	2.00	1 1/2	5 3/8 x4 1/8 x4 3/4	3 3/4
2105286	2.00	2	6 1/2 x5 3/4 x5 3/8	4 3/4

**Wall Brackets for Type D Transformers**

For mounting single-phase Type D transformers.

For Transformer Cat. No.	Wall Hanger Cat. No.	Each	Ship. Wt. Lbs.
9TD29B	4255370G1	\$5.00	7
9TD30B	4255370G2	5.00	8
9TD31B	4255370G3	5.00	9
9TD32B	4255370G4	5.00	9 1/2

**G-E Type M Service Transformers**

To Supply or Insulate 115 or 230-Volt Circuits

Air-Cooled, Single-Phase, 60 Cycles

For Indoor or Outdoor Service

For Oil Well, Mine and Pump-House Service



These transformers are designed especially to be used at the end of long lines such as are generally used to supply oil well, mine and pump-house service. Because of the wide voltage variation likely to be encountered at such locations, these transformers are designed to operate satisfactorily from 440 to 525 volts and may be used on either a 50 or 60-cycle circuit. The secondary voltages will vary accordingly. They are arranged to be connected directly into a conduit system and are supplied with 3/4-inch pipe nipples and 12-inch leads as shown in illustration.

Primary 440 Volts—Secondary 110 Volts

Cat. No.	Each	Kv-a. Output Cont. 55° C. Rise	Depth In.	Wall Space Inches	*Junction Box Cat. No.	Approx. Ship. Wt. Lbs.
9TM852A	\$27.00	.100	3 7/8	4 7/8 x11	Conduit	17
9TM853A	31.00	.250	3 7/8	4 7/8 x12 1/4	Connection	23
9TM854A	42.00	.500	4 1/2	5 1/2 x10 7/8	Only	35

\*Supplied with 3/4-inch pipe nipple.

These transformers are also suitable for 50-cycle operation.

**For General Light and Power Service**

These transformers are designed to reduce the voltage of 230, 460 or 575-volt power circuits to either 115 or 230 volts for supplying lights and other equipment. Some of the ratings are also suitable for insulating one circuit from another without change in voltage. In addition to the many single-phase applications, they can be used in banks on poly-phase circuits.

The classification "service" is applied to transformers used to supply a standard utilization voltage from another standard utilization voltage.

**G-E Service Transformers**

To Supply or Insulate 115 or 230-Volt Circuits

Air-Cooled, Single-Phase, 60 Cycles

Type M—For Indoor or Outdoor Service For General Light and Power Service

Cat. No.	Each	Kv-a. Output Cont. 55° C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lbs.	*Junction Box Cat. No.
9TM810A	\$15.	.050	3 3/8	3 5/8 x 3 7/8	6	4255645G1 22X646 or 22X647
9TM811A	16.	.075	3 3/8	3 5/8 x 4 1/8	7	
9TM812A	17.	.100	3 3/8	3 5/8 x 4 3/8	9	
9TM813A	19.	.150	3 3/8	3 5/8 x 5	10 1/2	
9TM814A	23.	.250	3 7/8	4 7/8 x 8 1/8	20	
9TM815A	32.	.500	3 7/8	4 7/8 x 9 3/4	27	
9TM816A	41.	.750	4 1/2	5 1/2 x 10 3/8	33	

Primary	110/220	Volts—Secondary	110/220	Volts	
9TM817A	\$50.	1	4 1/2	5 1/2 x 11 3/8	40
9TM818A	61.	1.5	5 1/8	6 1/2 x 12 1/2	55
9TM819A	72.	2	5 1/8	6 1/2 x 13 7/8	70
9TM820A	93.	3	6	7 5/8 x 15 1/4	105
9TM821A	135.	5	7	8 7/8 x 17 3/4	145
9TM822A	187.	7.5	7 5/8	9 5/8 x 18 1/2	200
9TM823A	240.	10	10 5/8	11 3/4 x 21 1/8	300

Primary	440	Volts—Secondary	110	Volts	
9TM824A	\$15.	.050	3 3/8	3 5/8 x 3 7/8	6
9TM825A	16.	.075	3 3/8	3 5/8 x 4 1/8	7
9TM826A	17.	.100	3 3/8	3 5/8 x 4 3/8	9
9TM827A	19.	.150	3 3/8	3 5/8 x 5	10 1/2
9TM828A	23.	.250	3 7/8	4 7/8 x 8 1/8	20
9TM829A	32.	.500	3 7/8	4 7/8 x 9 3/4	27
9TM830A	41.	.750	4 1/2	5 1/2 x 10 3/8	33

Primary	220/440	Volts—Secondary	110/220	Volts	
9TM831A	\$50.	1	4 1/2	5 1/2 x 11 3/8	40
9TM832A	61.	1.5	5 1/8	6 1/2 x 12 1/2	52
9TM833A	72.	2	5 1/8	6 1/2 x 13 7/8	70
9TM834A	93.	3	6	7 5/8 x 15 1/4	105
9TM835A	135.	5	7	8 7/8 x 17 3/4	145
9TM836A	187.	7.5	7 5/8	9 5/8 x 18 1/2	200
9TM837A	240.	10	10 5/8	11 3/4 x 21 1/8	300

**\*\*†Type D—For Indoor Service Only**

Primary	220/440	Volts—Secondary	110/220	Volts	
9TD29B	\$345.	15	†27 1/4	†18 7/8 x 20 1/4	565
9TD30B	553.	25	†27 1/4	†20 9/8 x 21 3/4	750
9TD31B	750.	37.5	†29 1/4	†23 3/8 x 25	1085
9TD32B	840.	50	†29 1/4	†24 9/8 x 26	1225

Use two 2105285G1  
Use one each 2105285G1  
2105286G1

**Type M—For Indoor or Outdoor Service**

Primary	550	Volts—Secondary	110	Volts	
9TM838A	\$16.	.050	3 3/8	3 5/8 x 3 7/8	6
9TM839A	17.	.075	3 3/8	3 5/8 x 4 1/8	7
9TM840A	18.	.100	3 3/8	3 5/8 x 4 3/8	9
9TM841A	20.	.150	3 3/8	3 5/8 x 5	10 1/2
9TM842A	24.	.250	3 7/8	4 7/8 x 8 1/8	20
9TM843A	34.	.500	3 7/8	4 7/8 x 9 3/4	27
9TM844A	44.	.750	4 1/2	5 1/2 x 10 3/8	33

Primary	550	Volts—Secondary	110/220	Volts	
9TM845A	\$55.	1	4 1/2	5 1/2 x 11 3/8	40
9TM846A	65.	1.5	5 1/8	6 1/2 x 12 1/2	52
9TM847A	77.	2	5 1/8	6 1/2 x 14 7/8	70
9TM848A	98.	3	6	7 5/8 x 15 1/4	105
9TM849A	141.	5	7	8 7/8 x 17 3/4	147
9TM850A	195.	7.5	7 5/8	9 5/8 x 18 1/2	200
9TM851A	248.	10	10 5/8	11 3/4 x 21 1/8	300

\*Not included in price or weight of transformer.  
\*\*Can be wall mounted by using wall hangers. Prices and weights given above do not include these hangers.  
†Suitable for 50-cycle operation.  
‡Height. §Floor space.



## G-E Type M Service Auto-Transformers

To Supply 115 and 230-Volt Circuits  
For Indoor or Outdoor Service  
For General Light and Power Service

	220	110, 115, 120	
Primary	230 Volts—Secondary	220/110	Volts
	230	230/115	
		240/120	
		3-Wire	
		2-Wire or	
		60 Cycles	

Air-Cooled, Single-Phase, 60 Cycles

Auto-transformers are more economical and smaller than a transformer designed to carry the same load. Within their voltage limitations, they will perform the same function as service transformers with the exception of insulating two circuits. They may be used to obtain 115 volts from a 230-volt circuit, to derive a neutral on a 230-volt 2-wire circuit, or to balance a 115/230-volt 3-wire circuit. They also may be used in banks on polyphase circuits.

Care should be exercised in ordering auto-transformers that the installation will meet local electrical inspector's requirements.

Cat. No.	Each	Kv-a. Output Cont. 55° C. Rise	Depth Inches	Wall Space Inches	Approx. Ship. Wt. Lbs.
*9AM1801A	\$18.00	.250	3 3/8	3 5/8 x 4 1/2	10
*9AM1802A	23.00	.500	3 3/8	3 5/8 x 5 7/8	13
*9AM1803A	28.00	.750	3 3/8	4 7/8 x 8 3/4	23
*9AM1804A	32.00	1	3 3/8	4 7/8 x 9 7/8	28
*9AM1805A	40.00	1.5	4 1/2	5 1/2 x 9 7/8	32
*9AM1806A	50.00	2	4 1/2	5 1/2 x 10 3/8	40
*9AM1807A	62.00	3	5 1/8	6 1/2 x 12 3/8	52
*9AM1808A	87.00	5	6	7 5/8 x 13 1/2	90
*9AM1809A	115.00	7.5	7	8 7/8 x 15 7/8	125
*9AM1810A	140.00	10	7	8 7/8 x 17 5/8	145
*9AM1811A	192.00	15	7 3/8	9 5/8 x 18 1/2	200
*9AM1812A	245.00	20	10 5/8	11 3/4 x 19 7/8	300

Junction box not included in price or weight of transformer: \*No. 4255645G2; †Nos. 22X648 or 22X649; ‡No. 5012696G2.

## G-E Type M Air-Cooled Transformers

For 32-Volt Applications  
For Indoor or Outdoor Service

	110/220	30.6
Primary	115/230 Volts—Secondary	32 Volts
	120/240	33.4

Single-Phase, 60 Cycles

These transformers derive 32-volt circuits from 115 or 230-volt lighting or power circuits; 32-volt portable lamps and portable tools are frequently used in mines, steel plants, neat packing plants and in damp locations to prevent injury in case of accidental grounding of the circuit through the operator's body. The 32-volt lamps are often more economical and have longer life than those rated at higher voltages.

These transformers can also be used as auto-transformers to boost the voltage of circuits. When so connected, the kv-a. output of each transformer will equal the kv-a. output listed below, multiplied by  $\left(\frac{H.V.}{H.V.-L.V.}\right)$  and the kv-a. output of a 3-phase bank will be three times that of each unit.

Cat. No.	Each	Kv-a. Output Cont. 55° C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lbs.	*JUNCTION BOX CAT. No.	
						When Used as Trans-former	When Used as Auto-transformer
TM1290A	\$19.	.100	3 3/8	3 5/8 x 4 3/8	9	4255645G1	4255645G2
TM1291A	25.	.250	3 3/8	4 7/8 x 8 3/8	20		
TM1260A	35.	.500	3 3/8	4 7/8 x 10	27	22X646	22X648
TM1017A	44.	.750	4 1/2	5 1/2 x 10 3/8	33	or	or
TM1292A	52.	1	4 1/2	5 1/2 x 11 3/8	40	22X647	22A649
TM1147A	64.	1.5	5 1/8	6 1/2 x 12 3/8	55	5012696G1	5012696G2
TM1293A	75.	2	5 1/8	6 1/2 x 14 3/8	70	Leads too heavy	
TM1294A	96.	3	6	7 5/8 x 15 3/4	105	for standard	
TM1295A	138.	5	7	8 7/8 x 17 3/8	145	junction box.	

\*Not included in prices or weights of transformers.

## G-E Type M Sign-Lighting Transformers

For 11 1/2 or 23-Volt Applications  
For Indoor or Outdoor Service

	110/220	11/22
Primary	115/230 Volts—Secondary	11 1/2/23 Volts
	120/240	12/24

Air-Cooled, Single Phase, 60 Cycles

Designed primarily for sign lighting. As these transformers are compact, light in weight, and weatherproof, they can be mounted in any convenient location such as the back of the sign.

These transformers have a wide range of application, as both the primary and secondary windings are arranged for series-multiple connections. They may be connected as a transformer with the secondary supplying 11 1/2 or 23 volts, 2-wire or a 23/11 1/2 volts, 3-wire; also as an auto-transformer to deliver 126 1/2 or 138 volts from a 115-volt supply, or 241 1/2 or 253 volts from a 230-volt supply. Two or more units may be used in various combinations to obtain many other special voltages.

One of the many special applications is pipe thawing. Two transformers are used, the primaries being connected in multiple and the secondaries in series to give 46 volts. This gives sufficient capacity for thawing pipes up to 1-inch diameter. The current can be controlled to some extent by looping the secondary cables.

Cat. No.	Each	Kv-a. Output Cont. 55° C. Rise	Depth In.	Wall Space Inches	Approx. Ship. Wt. Lbs.	*JUNCTION BOX CAT. No.	
						When Used as Trans-former	When Used as Auto-transformer
9TM801A	\$19.	100	3 3/8	3 5/8 x 4 1/2	10	4255645G1	4255645G2
9TM802A	25.	.250	3 3/8	4 7/8 x 8 3/8	20		
9TM803A	35.	.500	3 3/8	4 7/8 x 10	29	22X646	22X648
9TM804A	44.	.750	4 1/2	5 1/2 x 10 3/8	35	or	or
9TM805A	52.	1	4 1/2	5 1/2 x 11 3/8	40	22X647	22X649
9TM806A	64.	1.5	5 1/8	6 1/2 x 12 3/8	53	5012696G1	5012696G2
9TM807A	75.	2	5 1/8	6 1/2 x 13 3/8	70	Leads too heavy	
9TM808A	96.	3	6	7 5/8 x 15 3/4	105	for standard	
9TM809A	138.	5	7	8 7/8 x 16 3/8	145	junction box.	

\*Not included in prices or weights of transformers.

## G-E Insulator Type Primary Cutouts

Single Pole, 30 Amperes, 2500 Volts



Cat. No. 104227 cutout is provided with spring catch contact with 2 binding screws.

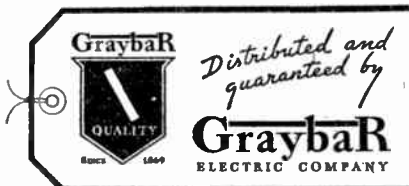
Price, No. 104227.....each \$4.00  
Price, No. 246477, Base.....each 2.50  
Price, No. 104577, Plug Only.....each 1.50

Cat. No. 260276 combination safety plug puller and switch hook. Over all length, 42 inches. Price, No. 260276.....each \$9.50

## Fuse Links for No. 104227



Cat. No.	Amp.	Std. Pkg.	Price Each	Cat. No.	Amp.	Std. Pkg.	Price Each
259480	1	100	\$.25	259485	15	100	\$.25
259481	2	100	.25	259486	20	100	.25
259482	3	100	.25	259487	25	100	.25
259483	5	100	.25	259488	30	100	.25
259484	10	100	.25	.....	..	..	..



**G-E D & W Type Oil Fuse Cutouts**



**Subway Type**  
100-200 Amperes

Should not be installed to give overload protection.

These cutouts are particularly advantageous for the following applications: where short-circuit currents are extremely heavy; where very high-speed operation is essential; all subway installations; where protection and switching are required for replacement of potheads; where quiet operation is desirable; where cutouts are exposed to smoke, corrosive fumes, salt air, explosive gases or inflammable dust; all indoor installations; where it is desired to have no exposed live parts, whether cutout is in the open or the closed position.



**Pole Type**  
100-300 Amperes

**RELIABILITY.**—Fuse link is under oil, which prevents deterioration from oxidation or electrolysis. Gases are released, but oil is confined. Subway fuse cutouts have operated for years while submerged in water.

**SIMPLICITY.**—Fuse links are quickly and easily replaced. Oil level can be maintained without removing cutouts from service.

**OPENING UNDER LOAD.**—Heavy, self-aligning contacts make possible repeated opening under load.

**WIDE RANGE OF PROTECTION AFFORDED.**—Cutouts may be fused closely to load, providing simultaneously, protection against overload and heavy short circuits.

Used on distribution systems at tap-offs, sectionalizing points and outdoor installations of distribution transformers, constant current transformers, capacitors and industrial equipment such as hoists, etc. Used either indoor or outdoor; because of inverse-time blowing characteristics, afford best protection against short circuits for motors and control. These characteristics will assure the blowing of fuse link before destructive burning occurs in the copper of the motor or control.

Cutouts have the following operating advantages:

**SAFETY IN FUSE LINK RENEWAL.**—Fuse link is surrounded by a Textolite sleeve, which prevents mechanical damage or accidental electric contact, while carrier is being inserted in cutout. All live parts are enclosed. Fuse carrier is locked in place before circuit is closed.

**SAFETY IN OPERATION.**—Flame from arc is confined within housing, thus preventing ignition of explosive gases and external damage.

**G-E Fuse Links**

For D & W Type Oil Fuse Cutouts

**Plain Type**

A carton consists of 10 links.

Rated Capacity of Links Amperes	CATALOGUE NUMBERS OF CUTOUTS				
	9F2A1 9F2A6	9F2A2 9F2A7 9F2A10 9F2A11	9F2A3 9F2A8 9F2A12 9F2A13	9F2A4 9F2A15	9F2A5 9F2A9
5	295544	295552	295561	.....	295571
10	295545	295553	.....	.....	295572
15	295546	295554	295562	.....	295573
20	295547	295555	.....	.....	.....
25	295548	295556	295563	.....	295574
30	295549	295557	295564	.....	295575
40	295550	295558	.....	.....	.....
50	295551	295559	295565	.....	295576
60	No larger link made for these cutouts	295560	295566	295577	295577
75	.....	.....	295567	295578	No larger link made for these cutouts
100	.....	.....	295568	295579	.....
125	.....	.....	295569	295580	.....
150	.....	.....	295570	295581	.....
175	.....	.....	.....	295582	.....
200	.....	.....	.....	295583	.....
250	.....	.....	.....	.....	.....
300	.....	.....	.....	.....	.....

Rated Capacity of Links Amperes	CATALOGUE NUMBERS OF FUSE LINKS				
	5	10	15	20	25
5	295544	295552	295561	.....	295571
10	295545	295553	.....	.....	295572
15	295546	295554	295562	.....	295573
20	295547	295555	.....	.....	.....
25	295548	295556	295563	.....	295574
30	295549	295557	295564	.....	295575
40	295550	295558	.....	.....	.....
50	295551	295559	295565	.....	295576
60	No larger link made for these cutouts	295560	295566	295577	295577
75	.....	.....	295567	295578	No larger link made for these cutouts
100	.....	.....	295568	295579	.....
125	.....	.....	295569	295580	.....
150	.....	.....	295570	295581	.....
175	.....	.....	.....	295582	.....
200	.....	.....	.....	295583	.....
250	.....	.....	.....	.....	.....
300	.....	.....	.....	.....	.....

Shipping Weight, Carton, Pounds	Price, Each				
	1	2	3	4	2
.....	\$ .80	\$ .95	\$ 1.15	\$ 1.45	\$ 1.45
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

**Reactive Type**

Rated Capacity of Links Amperes	CATALOGUE NUMBERS OF CUTOUTS				
	9F2A2 9F2A7 9F2A10 9F2A11	9F2A3 9F2A8 9F2A12 9F2A13	9F2A3 9F2A8 9F2A12 9F2A13	9F2A4 9F2A15	9F2A5 9F2A9
5	295584	295591	295601	.....	295615
15	295585	.....	.....	.....	295616
25	295586	295592	295602	.....	295617
30	.....	.....	.....	.....	.....
40	295587	295593	.....	No smaller link made for this cutout	295618
50	295588	295594	295603	.....	295619
75	295589	295595	295604	295608	295620
100	295590	295596	295605	295609	295621
125	No larger link made for these cutouts	295597	No larger link made for these cutouts	295610	No larger link made for these cutouts
150	.....	295598	.....	295611	.....
175	.....	295599	.....	295612	.....
200	.....	295600	.....	295613	.....
250	.....	No larger link made for these cutouts	.....	295614	.....
300	.....	.....	.....	.....	.....

Rated Capacity of Links Amperes	CATALOGUE NUMBERS OF FUSE LINKS				
	10	15	25	30	40
10	295584	295591	295601	.....	295615
15	295585	.....	.....	.....	295616
25	295586	295592	295602	.....	295617
30	.....	.....	.....	.....	.....
40	295587	295593	.....	No smaller link made for this cutout	295618
50	295588	295594	295603	.....	295619
75	295589	295595	295604	295608	295620
100	295590	295596	295605	295609	295621
125	No larger link made for these cutouts	295597	No larger link made for these cutouts	295610	No larger link made for these cutouts
150	.....	295598	.....	295611	.....
175	.....	295599	.....	295612	.....
200	.....	295600	.....	295613	.....
250	.....	No larger link made for these cutouts	.....	295614	.....
300	.....	.....	.....	.....	.....

Shipping Weight, Carton, Pounds	Price, Each				
	3	4	4	6	4
.....	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

Cat. No.	Each	Volts	Rated Capacity Amperes	INTERRUPTING CAP. AMPS. AT 60 CYCLES		SHIPPING Wt. LBS.	Cutout Oil
				Plain Links	Reactive Links		
9F2A1	\$48.00	2500	5 to 50	2000	.....	51	6
9F2A2	58.00	2500	10 to 100	4000	5000	62	9
9F2A3	82.00	{2500 5000}	10 to 200	8000	10000	113	21
9F2A4	178.00	2500	100 to 300	8000	10000	205	31
9F2A5	178.00	7500	10 to 100	3000	3750	200	31
<b>Subway Type</b>							
9F2A6	\$75.00	2500	5 to 50	2000	.....	61	6
9F2A7	85.00	2500	10 to 100	4000	5000	70	9
9F2A8	110.00	{2500 5000}	10 to 200	8000	10000	127	21
*9F2A15	250.00	2500	100 to 300	8000	10000	200	26
*9F2A9	250.00	7500	10 to 100	3000	3750	200	26

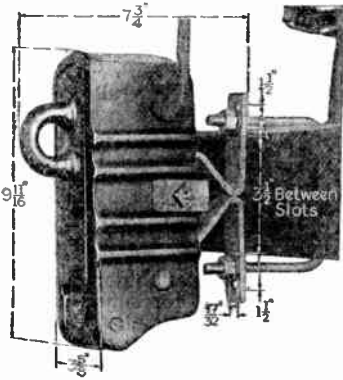
\*The bushings on Cat. No. 9F2A9 and 9F2A15 cutouts are not the separable-sleeve type but are designed for connection to the cables using standard splicing material.

The 2500-volt cutouts are suitable for operation on 4000-volt Y-connected circuits with dead grounded neutral. In all cases two cutouts are required between lines.

†The plain type links for 100 amperes and below listed for these cutouts will operate satisfactorily on 5000 volts.

‡When these cutouts are used on 5000-volt circuits where reactive type fuse links are required, use links Cat. Nos. 295601 to 295605. Links Cat. Nos. 295591 to 295600 are only good for 2500-volt circuits.

## G-E Expulsion Type Distribution Fuse Cutouts



Cat. No. 6X2433

The design of these cutouts embodies the following features:

**SAFETY.**—Fuse holder is removed from circuit when door is opened—door closes upward, protecting lineman should cutout be closed on a short circuit—door can be opened or closed by a switch hook; cutout hangs low on the cross-arm.

**RELIABILITY.**—Expulsion principle of operation—gases are expelled outside housing—interlocking barriers prevent conducting gas

from short-circuiting terminals—high interrupting capacity. Heavy clips insure good contact and prevent overheating.

**SIMPLICITY.**—Cutouts are suitable for right or left-hand entrance leads. Link holder can be removed and replaced with one hand; cannot be replaced upside down. Hanger adjustable for 2 3/4 to 4-inch crossarm.

**DURABILITY.**—Glazed porcelain housing with molded compound door and galvanized hanger.

### 60 Amperes, 0 to 5000 Volts

#### Interrupting Capacity, 1500 Amperes at 60 Cycles

Cat. No. 6X2433 is a primary cutout complete with link holder in porcelain box. Arranged for both right and left hand entrance. No fuse links.

Cat. No. 6X2433 ..... each \$10.80

Cat. No. 9F4A3, Link Holders ..... each 3.40

Cat. No. 29X843, Disconnecting Blade ..... each 1.40

### Low Temperature Fuse Links for Cat. No. 6X2433 Cutouts

Cat. No.	Cap. Amps. Each	Cat. No.	Cap. Amps. Each	Cat. No.	Cap. Amps. Each
9F1A127	1 .50	9F1A131	10 .50	9F1A85	30 .50
9F1A128	2 .50	9F1A132	15 .50	9F1A86	40 .50
9F1A129	3 .50	9F1A133	20 .50	9F1A87	50 .50
9F1A130	5 .50	9F1A84	25 .50	9F1A88	60 .50

### 60 Amperes, 0 to 7500/12500 Grounded Y Volts

Cat. No. 6X242 cutout is suitable for right or left hand entrance. With link holder enclosed in porcelain box.

Cat. No. 6X242 ..... each \$17.80

Cat. No. 9F4A2, Link Holder ..... each 3.40

Cat. No. 29X842, Disconnecting Blade ..... each 1.40

### Low Temperature Fuse Links for Cat. No. 6X242 Cutouts

Cat. No.	Cap. Amps. Each	Cat. No.	Cap. Amps. Each	Cat. No.	Cap. Amps. Each
9F1A127	1 \$5.00	9F1A131	10 \$5.00	9F1A90	30 \$5.00
9F1A128	2 .50	9F1A132	15 .50	9F1A91	40 .50
9F1A129	3 .50	9F1A133	20 .50	9F1A92	50 .50
9F1A130	5 .50	9F1A89	25 .50	9F1A93	60 .50

### 150 Amperes, 0 to 5000 Volts

#### Interrupting Capacity 3000 Amperes at 60 Cycles

Cat. No. 6X241 primary cutout is furnished complete with link holder in porcelain box. Arranged for both right and left hand entrance. No fuse links.

Cat. No. 6X241 ..... each \$28.00

Cat. No. 9F4A1, Link Holder ..... each 6.00

Cat. No. 29X841, Disconnecting Blade ..... each 3.00

### 150 Amperes, 0 to 7500/12500 Grounded Y Volts

#### Interrupting Capacity 3000 Amperes at 60 Cycles

Cat. No. 6X240 primary cutout is furnished complete with link holder in porcelain box. Arranged for both right and left-hand entrance. No fuse links.

Cat. No. 6X240 ..... each \$34.00

Cat. No. 9F4A1, Link Holder ..... each 6.00

Cat. No. 29X841, Disconnecting Blade ..... each 3.00

### Low Temperature Fuse Links for Cat. Nos. 6X241 and 6X240 Cutouts

Cat. No.	Cap. Amps. Each	Cat. No.	Cap. Amps. Each	Cat. No.	Cap. Amps. Each
9F1A112	1 \$5.00	9F1A117	20 \$5.00	9F1A17	60 \$5.00
9F1A113	3 .50	9F1A13	25 .50	9F1A18	75 .60
9F1A114	5 .50	9F1A14	30 .50	9F1A19	100 .60
9F1A115	10 .50	9F1A15	40 .50	9F1A20	125 .60
9F1A116	15 .50	9F1A16	50 .50	9F1A21	150 .60

## G-E Transformer Fuse Cutouts Tables for Selecting Proper Fuse Cutouts

Cutouts are so chosen that full-load current of transformer will never exceed 65% of fuse link rating for expulsion cutouts, and 75% of rating for oil-filled cutouts. It is imperative that the maximum short-circuit current at the point of installation shall not exceed the interrupting rating of the cutout. When two or more cutouts of the same type are shown, they all meet the voltage and current requirements but have different interrupting-capacity ratings. See cutout listing for these ratings.

**Table I—Distribution Fuse Cutouts for Single-Phase Transformer Installations (Except Subway)**

The cutouts given for Y ratings can be used only when the neutral is grounded.

Transformer Kv.-a.	Type of Cutout	RATED VOLTAGE OF TRANSFORMER					
		2400/4160 Y	4800 Delta	6900 8320 Y	6900 Delta	11500 Y	11500 or 13200 Y Delta
75 and Less	Encl.	{ 6X2433	6X2433	6X242	6X242	6X242	6X242
		{ 6X241	6X241	6X241	6X240	6X240	6X240
	Open	9F3B5	9F3B5	{ 9F3B1	9F3B1	9F3B1	9F3B2 9F3B2
100 and 150	Encl.	{ 9F2A1	9F2A3	9F2A5	9F2A5	.....	.....
		{ 9F2A2	9F2A3	9F2A5	9F2A5	.....	.....
	Open	9F3B5	9F3B5	{ 9F3B1	9F3B1	9F3B1	9F3B2 9F3B2
200 and 250	Encl.	{ 6X241	{ 6X2433	6X242	6X242	6X242	.....
		.....	{ 6X241	6X241	6X240	6X240	.....
	Open	9F3B5	9F3B5	{ 9F3B1	9F3B1	9F3B1	9F3B2 9F3B2
333	Encl.	.....	6X241	6X241	6X240	6X240	.....
		.....	.....	.....	.....	.....	.....
	Open	9F3B5	9F3B5	{ 9F3B1	9F3B1	9F3B1	9F3B2 9F3B2
500	Encl.	{ 9F2A2	9F2A3	9F2A5	9F2A5	.....	.....
		{ 9F2A3	9F2A3	9F2A5	9F2A5	.....	.....
	Open	.....	.....	6X241	6X240	6X240	.....

**Table II—Distribution Fuse Cutouts for 3-Phase Transformers and Banks of 3 Single-Phase Transformers (Except Subway)**

Transformer Bank Kv.-a.	Type of Cutout	RATED VOLTAGE OF TRANSFORMER BETWEEN 3-PHASE TERMINALS					
		2400	4160	4800	6600 and 6900	8320 Y and 11950 Y	11000 Y 13200
150 and Less	Encl.	{ 6X2433	6X2433	6X2433	6X242	6X242	6X242
		{ 6X241	6X241	6X241	6X240	6X240	6X240
	Open	9F3B5	9F3B5	9F3B5	{ 9F3B1	9F3B1	9F3B1 9F3B2
200 and 225	Encl.	{ 9F2A1	{ 9F2A2	9F2A3	9F2A5	.....	.....
		{ 9F2A2	{ 9F2A2	9F2A3	9F2A5	.....	.....
	Open	9F3B5	9F3B5	9F3B5	{ 9F3B1	9F3B1	9F3B1 9F3B2
300	Encl.	{ 6X241	{ 6X2433	6X2433	6X242	6X242	6X242
		.....	{ 6X241	6X241	6X240	6X240	6X240
	Open	9F3B5	9F3B5	9F3B5	{ 9F3B1	9F3B1	9F3B1 9F3B2
450 and 600	Encl.	{ 9F2A2	9F2A2	9F2A3	9F2A5	.....	.....
		{ 9F2A3	9F2A2	9F2A3	9F2A5	.....	.....
	Open	.....	.....	.....	9F3B3	9F3B3	{ 6X242
750	Encl.	.....	.....	6X241	6X240	6X240	6X240
		.....	.....	.....	9F3B3	9F3B3	9F3B3 9F3B4
	Open	.....	.....	.....	.....	.....	.....
1000	Encl.	{ 9F2A4	9F2A3	.....	9F2A5	.....	.....
		.....	.....	6X241	6X240	6X240	6X240
	Open	.....	.....	.....	.....	.....	9F3B3 9F3B4



**G-E Fuse Cutouts**

Tables for Selecting Proper Fuse Cutouts

Continued

**Table III—Oil Fuse Cutouts for Single-Phase Subway Transformer Installations**

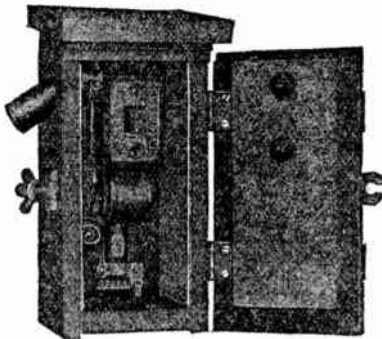
Transformer Kv.-a.	Type of Cutout	*RATED VOLTAGE OF TRANSFORMER		
		2400/4180Y	4800	6800 or 6900
75 and Less	Oil	9F2A6	9F2A8	9F2A9
100 and 150	Oil	9F2A7	9F2A8	9F2A9
200, 250, and 333	Oil	9F2A8	9F2A8	9F2A9
500	Oil	.....	.....	9F2A9

\*The cutouts listed for 2400-volt transformers can be used on 4160-volt grounded Y circuits. The cutouts listed for 4800-volt and 6900-volt transformers cannot be used on 8320Y- or 11950Y-volt circuits.

**Table IV—Oil Fuse Cutouts for 3-Phase Subway Transformers and Banks of 3 Single-Phase Subway Transformers**

Transformer Bank Kv.-a.	Type of Cutout	RATED VOLTAGE OF TRANSFORMER BETWEEN 3-PHASE TERMINALS			
		2400	4180	4800	6800 or 6900
150 and Less	Oil	9F2A6	9F2A6	9F2A8	9F2A9
200 and 225	Oil	9F2A7	9F2A6	9F2A8	9F2A9
300	Oil	9F2A7	9F2A7	9F2A8	9F2A9
450	Oil	9F2A8	9F2A7	9F2A8	9F2A9
600	Oil	9F2A8	9F2A8	9F2A8	9F2A9
750	Oil	.....	9F2A8	.....	9F2A9
1000	Oil	.....	9F2A8	.....	.....

**G-E Magnetic Blow-Out Lightning Arresters For Electric Railway Circuits MD-3, D.C.**



**For Indoor Service**

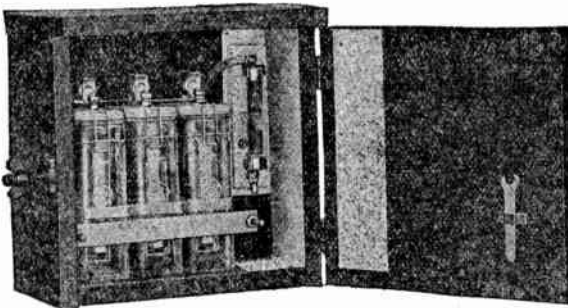
Std. pkg., 12.  
 Ship. wt., 12 lbs.  
 Cat. No. Circuit Voltage Each  
 164403 0-350 \$13.50  
 164405 350-750 13.50

**For Outdoor Service**

Std. pkg., 12.  
 Ship. wt., 20 lbs.  
 164404 0-350 \$27.00  
 164406 350-750 27.00  
 2516587 350-750 33.00

Prices on arresters for voltages higher than 350-750 quoted on request.

**No. 9LA7A11 G-E Aluminum Lightning Arresters D.C.**



Arresters should be installed on each car and at the stations and substations; on each feeder and each generator or synchronous converter.

Suitable for either indoor or outdoor installations. Mounted in a wooden box.

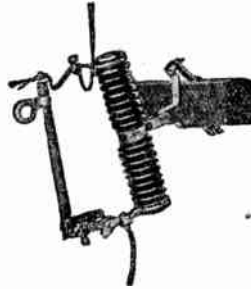
Circuit volts, 500-750. Standard package, 4.

Shipping weight, 45 pounds.

No. 9LA7A11.....each \$50.00

Prices on arresters for voltages higher than 500-750, quoted on request.

**G-E Open Type Fuse Cutouts with Drop-Out Fuse Holders**



Cutout gives a positive indication that circuit is open whenever a fuse link is blown, by causing the fuse holder to drop to a horizontal position.

Fuse holder tube is weather-resistant and mechanically strong; will not warp or split. Can be easily replaced without renewing metal parts of fuse holder.

A cone on fuse holder cap maintains contact for sufficient time after fuse link melts to assure complete interruption of short

circuit current within holder tube.

An automatic latch, incorporated in toggle mechanism, prevents fuse holder from falling out of support, curing the recoil resulting from expulsion action. A switch hook socket permits the use of any standard switch hook.

**1-100 Amperes, 5000 Volts**

Interrupting Capacity, 2000 Amperes at 60 Cycles  
 Flashover Values—Dry, 43 Kv.; Wet, 26 Kv.

Cat. No. 9F3B5, Cutout Complete with Fuse Holder, No Fuse Links.....each \$14.20  
 Cat. No. 9F4B5, Fuse Holder.....each 7.00  
 Cat. No. 3974042, Holder Tube (No Metal Parts)each 2.00

**1-60 Amperes, 7500/12500 Grounded Y Volts**

Interrupting Capacity, 1200 Amperes at 60 Cycles  
 Flashover Values—Dry, 60 Kv.; Wet, 35 Kv.

Cat. No. 9F3B1, Cutout Complete with Fuse Holder and Hanger, No Fuse Links.....each \$19.00  
 Cat. No. 9F4B1, Fuse Holder.....each 8.00  
 Cat. No. 3974012, Holder Tube (No Metal Parts)each 3.00

**1-100 Amperes, 7500-12500 Grounded Y Volts**

Interrupting Capacity, 2000 Amperes at 60 Cycles  
 Flashover Values—Dry, 60 Kv.; Wet, 35 Kv.

Cat. No. 9F3B3, Cutout Complete with Fuse Holder, No Fuse Links.....each \$19.00  
 Cat. No. 9F4B3, Fuse Holder.....each 8.00  
 Cat. No. 3974020, Holder Tube (No Metal Parts)each 3.00

**1-60 Amperes, 15000 Volts**

Interrupting Capacity, 1200 Amperes at 60 Cycles  
 Flashover Values—Dry, 75 Kv.; Wet, 45 Kv.

Cat. No. 9F3B2, Cutout Complete with Fuse Holder and Hanger, No Fuse Links.....each \$23.60  
 Cat. No. 9F4B2, Fuse Holder.....each 9.00  
 Cat. No. 3974013, Holder Tube (No Metal Parts)each 4.00

**1-100 Amperes, 15000 Volts**

Interrupting Capacity, 2000 Amperes at 60 Cycles  
 Flashover Values—Dry, 75 Kv.; Wet, 45 Kv.

Cat. No. 9F3B4, Cutout Complete with Fuse Holder, No Fuse Links.....each \$23.60  
 Cat. No. 9F4B4, Fuse Holder.....each 9.00  
 Cat. No. 3974021, Holder Tube (No Metal Parts)each 4.00

**Cable-Type Tension Fuse Links**

Cat. No.	Capacity Amperes	Each	Cat. No.	Capacity Amperes	Each
9F1C1	1	\$.50	9F1C 8	25	\$.50
9F1C2	2	.50	9F1C 9	30	.50
9F1C3	3	.50	9F1C10	40	.50
9F1C4	5	.50	9F1C11	50	.50
9F1C5	10	.50	9F1C12	60	.50
9F1C6	15	.50	9F1C13	75	.60
9F1C7	20	.50	9F1C14	100	.60

## G-E Thyrite Lightning Arresters

Station Type—For Indoor or Outdoor Service

### Single-Pole Units



Thyrite, the active element of the Thyrite arrester, has no time lag, has definite characteristics that remain unchanged in use, acting as a virtual insulator at low voltage, but a good conductor at high voltages. For the first time, accurate predictions can be made of arrester performance under various operating conditions.

Thyrite arresters can be installed indoors or outdoors on any voltage. They are built of self-contained units, each having the necessary gap structure and Thyrite elements enclosed in a wet process porcelain container, sealed at each end by heat-treated aluminum castings. Small size, economical, simple and easy assembly, result from the interchangeable unit system used.

The following information applies to single-pole arresters; for 3-phase circuits, use three single-pole arresters.

Cat. No. 9LA1D8

Arresters rated 73 kv. and below are suitable for application up to 6000 feet altitude.

## G-E Distribution Lightning Arresters

For Outdoor Service Only

Table 1—For Systems with Non-Grounded Neutral

Cat. No.	Each	CIRCUIT VOLTAGE CONSTANT POTENTIAL		No. ARRESTERS REQ. AT INSTALLATION			Ship. Wt. in Std. Pkg.
		Min.	Max.	Sgl. Ph.	3-Ph.	Std. Pkg.	
‡2906822G1	\$6.00	0	750	2	3	24	4
‡2906823G1	12.00	0	750	1	1	12	7
‡2906822G2	6.00	0	750	2	3	24	4
‡2906823G2	12.00	0	750	1	1	12	7
9LA10A1	12.00	300	1000	1	3	12	10
9LA10A2	14.00	1000	3000	2	3	12	11
9LA10A4	26.00	3000	6000	2	3	12	18
9LA10A5	34.00	6000	9000	2	3	6	37
9LA10A6	46.00	9000	12000	2	3	6	37
9LA10A7	60.00	12000	15000	2	3	6	47
†9LA2C59	88.00	15000	20000	2	3	1	80
†9LA2C60	148.00	20000	25000	2	3	1	90
†9LA2C61	200.00	25000	30000	2	3	1	100
†9LA2C62	250.00	30000	37000	2	3	1	110
†2981437G4	400.00	37000	50000	2	3	1	510

Table 2—For Systems with Solidly Grounded Neutral

Cat. No.	Each	Kw. Rating of Transformers (6.6 and 7.5)	Secondary Amperes	Approx. Ship. Wt. in Std. Pkg.
‡146187	\$3.50	1, 2, 3	24	1.3
9LA11A1	5.50	1, 2, 3	24	4
9LA11A2	5.50	1, 2, 3	12	4
9LA10A2	14.00	3000	5000	** 3
9LA10A4	26.00	5000	9000	** 3
9LA10A5	34.00	9000	12800	** 3
9LA10A6	46.00	12800	15000	** 3
9LA10A7	60.00	15000	18000	** 3
†9LA2C59	88.00	18000	25000	** 3
†9LA2C60	148.00	25000	30000	** 3
†9LA2C61	200.00	30000	37000	** 3
†9LA2C62	250.00	37000	50000	** 3

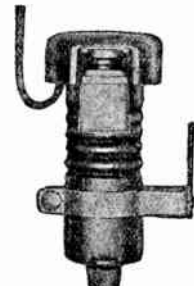
### For 2-Phase Systems

Treat an installation on 2-phase 4-wire systems like two single-phase installations on an ungrounded-neutral 3-phase system. Recommendations on arresters for 2-phase 3-wire systems on request.

Table 3—For Protection of Load Side of A.C. Series Lighting Transformers

Cat. No. Single-Pole	Each	Kw. Rating of Transformers (6.6 and 7.5)	Secondary Amperes	Approx. Ship. Wt. in Std. Pkg.
‡2906822G2	\$6.00	1, 2, 3	24	4
9LA10A2	14.00	5, 7.5, 10, 15	12	11
9LA10A4	26.00	20, 25, 30	12	18
9LA10A5	34.00	35, 40	6	30
9LA10A6	46.00	50	6	37
9LA10A7	60.00	60, 70	6	40

\*Altitude: Arresters except Cat. Nos. 2981437G5 and 2981437G7 can be used at these ratings up to 6000 feet altitude, but when arrester Cat. No. 2981437G4 is to be used between 4000 and 6000 feet, the purchaser should state the approximate altitude at which it is to be installed so that it can be furnished with the correct gap setting. For altitudes above 6000 feet, the purchaser should obtain special recommendations for all arresters. Cat. Nos 2981437G5 and 2981437G7 can be used only up to 4000 feet.



Pellet Type

9LA10A1. Use two arresters at a single-phase installation between outside wires. A system is considered solidly grounded when no resistance or reactance is used in grounding the neutral. †Cat. No. of arrester does not include any form of mounting. Refer to Table 4.

‡Compression-chamber type, others are pellet type except those marked †, which are Thyrite type.

§These compression-chamber arresters are also suitable for grounded-neutral circuits of ratings up to 750 volts. The following table shows how they differ.

Cat. No.	Poles	LENGTH LEAD, INCHES	
		Line	Ground
2906822G1	Single	36	18
2906822G2	Single	18	18
2906823G1	Double	36	18
2906823G2	Double	18	18

Table 4—Mounting Devices for Thyrite Arresters

Rated 20, 25, 30 and 37 Kv.

Cat. Nos. 9LAC59 to 62 Inclusive

Cat. No. Mounting Device..	3959936G1	3959936G2	3959936G4
Shipping Weight.. pounds	10	40	12
Each .....	\$12.00	20.00	No Charge

Table 5—Mounting Devices for 50-Kv. Pellet Arresters

Cat. No. 2981437G4

Cat. No. Mounting Device..	2981434G2	1523295G2	2981429G1
Shipping Weight.. pounds	14	12	145
Each .....	No Charge	No Charge	\$32.00

Orders must specify catalogue number of mounting device required.

### For Ungrounded-Neutral Circuits

Cat. No.	Each	Rated Circuit Voltage	Rated Arrester Voltage	Maximum Arrester Voltage	Approx. Ship. Wt. Lbs.
9LA1D5	\$120.00	2300	**1000	†3000	115
9LA1D6	146.00	4600	**3000	6000	120
9LA1D7	180.00	6900	**6000	9000	135
9LA1D25	297.00	11500 13800	**9000	15000	280
9LA1D26	323.00	18000	18000	20000	285
9LA1D27	388.00	23000	23000	25000	305
9LA1D28	500.00	28500	28500	30000	410
9LA1D29	565.00	34500	34500	37000	430
9LA1D30	742.00	46000	46000	50000	555
9LA1D31	919.00	57500	57500	60000	680
9LA1D32	1096.00	69000	69000	73000	805
9LA1D34	†	115000	115000	121000	1425
9LA1D36	†	138000	138000	145000	1700
		161000	161000	169000	

### \*For Grounded-Neutral Circuits

Cat. No.	Each	Rated Circuit Voltage	Rated Arrester Voltage	Maximum Arrester Voltage	Approx. Ship. Wt. Lbs.
9LA1D5	\$120.00	2300	**1000	†3000	115
9LA1D6	146.00	4600	**3000	6000	120
9LA1D7	180.00	6900	**6000	9000	135
9LA1D9	211.00	11500 13800	**9000	12000	180
9LA1D10	297.00	18000	18000	15000	280
9LA1D11	323.00	23000	23000	20000	285
9LA1D12	388.00	28500	28500	25000	305
9LA1D13	500.00	34500	34500	30000	410
9LA1D14	677.00	46000	46000	43000	535
9LA1D15	742.00	57500	57500	50000	555
9LA1D16	919.00	69000	69000	60000	680
9LA1D18	†	115000	115000	97000	1175
9LA1D20	†	138000	138000	121000	1425
9LA1D21	†	161000	161000	145000	1700

\*Use only when the system neutral is solidly grounded.

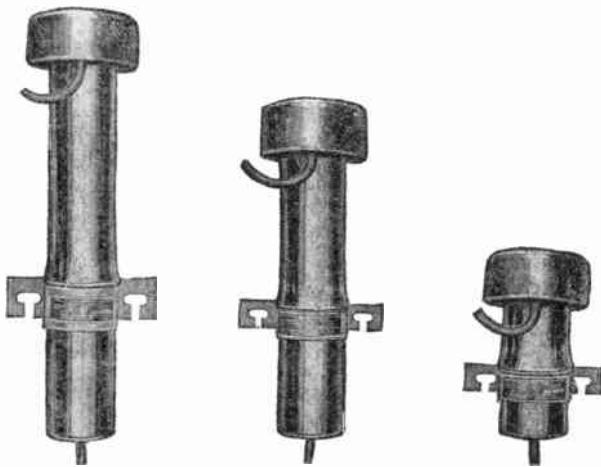
\*\*Minimum voltage rating.

†Also suitable for 4100 grounded Y.

‡Prices on arresters above 73 kv. on application.

Crystal Valve A.C. Lightning Arresters

Crystal Valve A.C. Lightning Arresters



Typical Crystal Valve Arresters

Crystal Valve Lightning Arresters represent the latest development in the design of highly efficient lightning protective apparatus and are the result of some highly successful researches in the rectifying properties and value characteristics of refractory conducting crystals. They are characterized by the following important advantages:

- Low initial or relief voltage for lightning disturbances.
- High discharge rate due to low internal impedance.
- They are of the true valve with all its attendant advantages.
- Cathode Ray Oscillograph tests show that their speed of operation is exceedingly high.
- Cathode Ray tests show time or speed characteristics are little affected by the steepness of the wave fronts.
- Does not cause radio interference.
- Bodies and caps are made from high grade wet process porcelain.
- They suffer no measurable deterioration in service.
- Their operating characteristics permit of their handling rapidly recurring discharges over long periods of time without danger of self destruction.
- Their impedance decreases as the severity of the discharge increases.
- They require no inspection other than a visual inspection.
- They are small in size and a low first cost, permitting them to be installed directly on the transformer pole and used to protect small transformers as well as large.

Due to their operating characteristics they have an unusually long life. Crystal Valve Arresters are regularly provided with line and ground leads of No. 6 B. & S. gauge stranded cable, 18 inches long and with hot galvanized strap hangers.

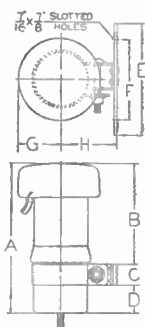


Fig. 1 Nos. 50935, 50925, 50927, 50931 With Type CA Mounting Bracket

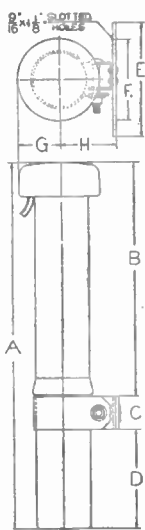


Fig. 2 Nos. 50932, 50933 and 50934 With Type DA Mounting Bracket

All voltages specified are maximum phase-phase voltages.

For straight single-phase circuits use arresters recommended in Table 1.

Treat single-phase circuits split from 2-phase, and single and 2-phase circuits split from 3-phase circuits in accordance with the recommendations covering the particular type of circuit from which they are split.

For 2-phase 4-wire ungrounded circuits use arresters recommended in

Table 1. For 2-phase 3-wire circuits with ungrounded neutral use arresters recommended in Table 1 for the phase wires; for the neutral wire use arresters rated at 71 per cent of the phase-phase voltage.

For the neutral wire of 3-phase 4-wire ungrounded Y circuits use arresters rated at 58 per cent of the phase-phase voltage.

For neutral protection on either 2 or 3-phase circuits where the neutral is solidly grounded, use Types T-300, N or NS arresters. If, due to unbalancing, the voltage between neutral and ground is between 350 and 750 volts, use type CV form D arrester, listed below.

Form 11 arrester is designed for application to systems having phase to phase voltages of from 15,000 to 25,000; these include Delta systems, Y systems with solidly grounded neutral, and Y systems with ungrounded neutral. On a 4-wire ungrounded Y system form 11 arrester should be used on the phase wires while the form 10 arrester should be used on the neutral. On 4-wire Y systems with solidly grounded neutral, for neutral protection use Type T-300, N or NS arresters. If, due to unbalancing, the voltage between neutral and ground is above 350, use any of the listed Crystal Valve Arresters rated for the maximum voltage existing between neutral and ground.

Dimensional Data

Cat. No.	Figs.	DIMENSIONS, INCHES							
		A	B	C	D	E	F	G	H
50935	1	6	1 3/8	1 1/4	3/8	6 5/8	1 3/4	2 9/16	3 3/16
50925	1	9	6 1/8	1 1/4	1 5/8	6 5/8	1 3/4	2 9/16	3 3/16
50927	1	9	6 1/8	1 1/4	1 5/8	6 5/8	1 3/4	2 9/16	3 3/16
50931	1	16 1/2	10 1/4	1 1/4	4 5/8	6 5/8	1 3/4	2 9/16	3 3/16
50932	2	20 3/8	13 3/4	2	5 1/8	6 3/4	1 3/4	2 9/16	3 3/16
50933	2	26 1/2	17 1/2	2	7	6 3/4	1 3/4	2 9/16	3 3/16
50934	2	31 1/4	20	2	9 1/4	6 3/4	1 3/4	2 9/16	3 3/16

Voltage Ratings

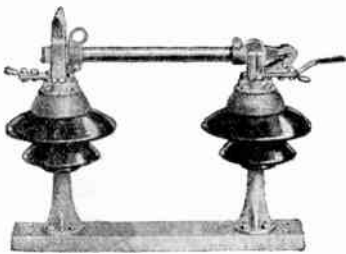
No.	Type CV Form	Table One For Delta or Ungrounded Y 3-Phase Systems, Volts		Table Two For 3-Phase Y Systems with Solidly Grounded Neutral, Volts	
		Type	Voltage	Type	Voltage
50935	D		350-1000		
50925	1		1000-3000		
50927	3		1000-2000		3000-5000
50931	7		3000-6000		5000-9000
50932	8		6000-9000		9000-12800
50933	9		9000-12000		12800-15000
50934	10		12000-15000		15000-18000

Prices

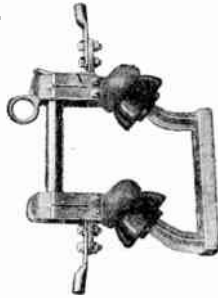
Cat. No.	Each	Type CV Form	Std. Pkg.
50935	\$6.00	D	12
50925	7.00	1	12
50927	7.00	3	12
50931	13.00	7	12
50932	17.00	8	6
50933	23.00	9	6
50934	30.00	10	6
51001	80.00	11	1



### Three E Outdoor Expulsion Fuse Disconnects



Type F.V.H.

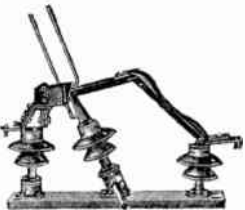


Type F.V.F.

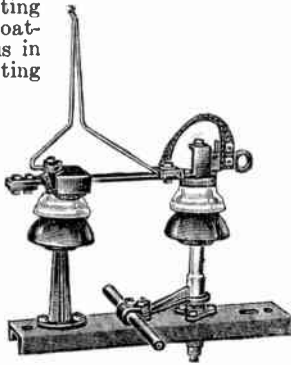
These fuse disconnects are equipped with hinges which enable operators to remove the fuse tube for re-filling. The fuse links are enclosed in live rubber tubing. On low capacities this tube confines the gases until sufficient pressure is created to expel the entire blown link and rubber tube. It also absorbs some of the mechanical shock caused by blowing on heavy short circuit. Obtainable from 7500 to 69,000-volt. Maximum rating, 100 amperes.

### Three-E 6600 and 8600 Type Air Break Switches

These switches are easily installed under almost any mounting conditions. Contacts are full floating, self-aligning, and generous in design. Several types of operating mechanisms available. In voltages from 5000 to 69,000-volt, and from 200 to 4000 amperes.

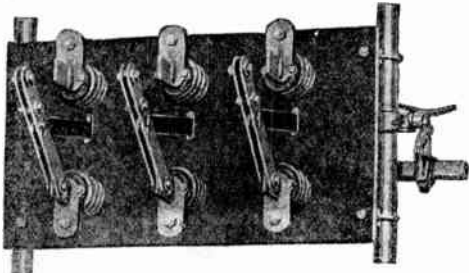


8600 Type



6600 Type

### Three-E Indoor Type Gang Operated Disconnecting Switches



The construction is the same as the single pole switches. Any combination of front and back connection can be obtained. Operating handles are available for any operating or mounting conditions. A complete line of accessories, such as insulating barriers, etc. can be furnished.

### Three-E Metal Enclosed Switching and Fuse Cabinets

Metal enclosed cabinets can be installed economically and operated safely on industrial power supply installations. The space required is much less than open type bus work.

All cabinets are designed so that the equipment is readily accessible for alteration or inspection.

Ask for Bulletin Giving Complete Information

### Three-E Form A-1 Indoor Bus Supports

For Round Busses



Type RF



Type RP



Type LF



Type LP



Type FF



Type FP

### Three-E Outdoor Bus Supports



Type HFU



Type AFU



Type MFH



Type TFU



Type RFU



Type FFU

Three-E Outdoor Bus Supports are of interchangeable construction. The illustrations are for flat mounting and are designated as Type FU. For pipe mounting, the letter P should be substituted for the letter F.

These bus supports can be used on either a.c. or d.c. service. They are available for voltages from 7500 to 69,000.

A complete line of accessories, such as mounting and adjustable top adapters, is available.

Ask for Bulletin Giving Complete Information

**Three-E Indoor Type Disconnecting Switches**

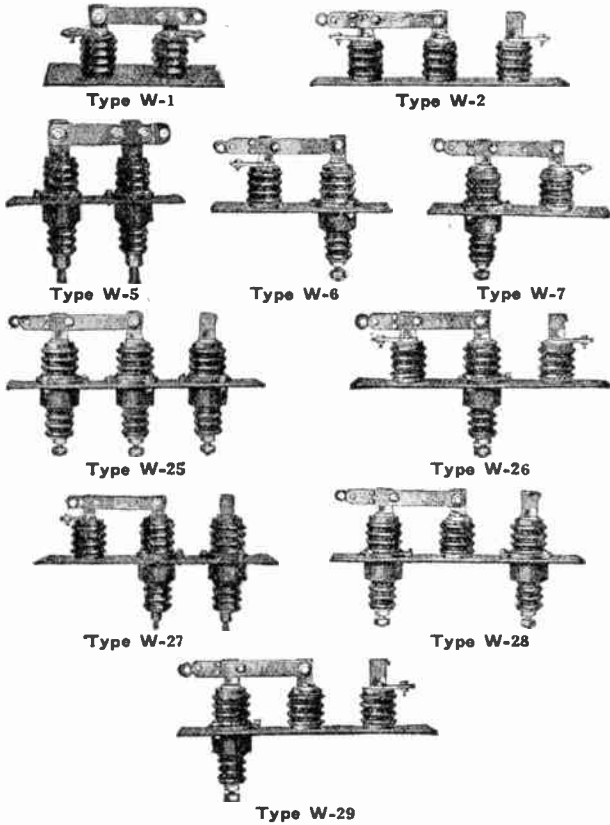
The double blade type of construction is used throughout, giving the advantages of low temperature rise, self-aligning contacts, etc. The clips are cast copper.

Built for voltages from 110 to 34,500 and ampere capacity from 100 to 5,000.

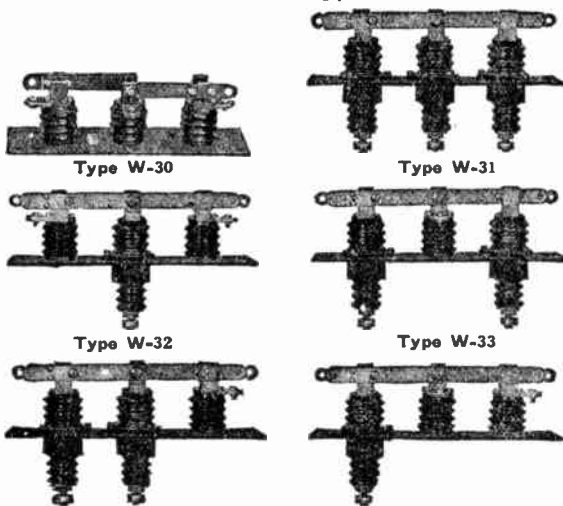
Switches can be supplied in all combinations of front and back connection, of the single throw, double throw, and transfer types with or without blade locks, for flat or pipe mounting on steel, slate, marble, ebony asbestos and alberene stone.

Insulating barriers, blade stops, and terminals can be supplied for all switches.

**Single Throw and Double Throw Types**



**Transfer Types**



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**Three-E Form A-1 Indoor Bus Supports For Flat Vertical Bus Bar**



Type HF



Type HP



Type AF



Type AP



Type KF



Type KP



Type GF



Type GP

All bus supports illustrated are the Form A-1. Heavy pressed steel mounting bases are used on this form of bus support.

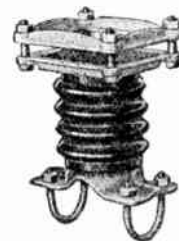
These supports are available for voltages from 5000 to 34,500 and the cantilever strength at insulator cap. of 6000 inch pounds.

Indoor bus supports are also furnished in what is known as Form A. This form uses heavy cast malleable bases.

**For Flat Horizontal Bus Bar**



Type MF



Type MP



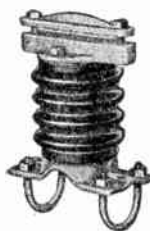
Type BF



Type BP



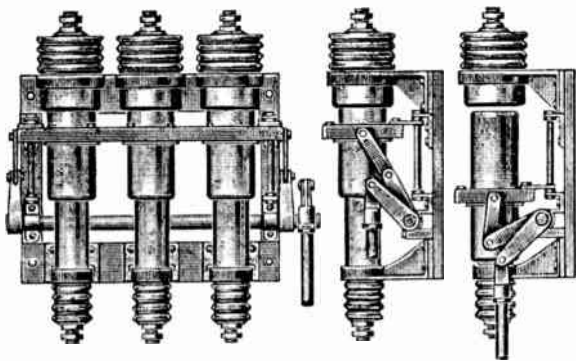
Type TF



Type TP

Ask for Bulletin Giving Complete Information

## Three-E Gang Operated Telescoping Isolators



This device is known as porcelain clad and was designed principally for economy and safety. The isolator uses less space than any other disconnecting device of the same capacity.

All live parts are completely enclosed in porcelain, both in the open and closed positions. This feature minimizes electrical accidents to operators and workmen.

The isolator can be mounted vertically or horizontally.

Available in voltages of 7500, 15,000, and 23,000 volts and for 600, 1200, and 2000 amperes.

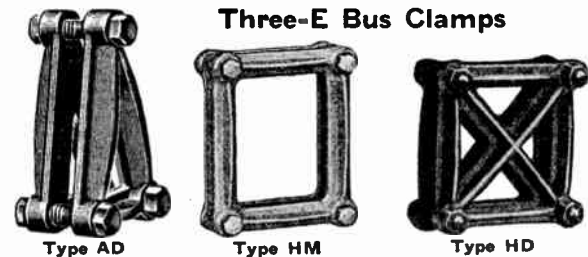
Ask for Bulletin Giving Complete Information

## Three-E Clamp Insulator Supports



**Type CIL Pipe Mounting**  
**Type MIL Flat Mounting**  
 Consists of porcelain spools held by metal clamps. The lower half is made of heavy pressed steel and the top half of heavy pressed non-ferrous metal. Also available with a heavy cast malleable base instead of pressed steel. Can be used on either a.c. or d.c. service. Available for conductor sizes ranging from  $\frac{5}{16}$  to  $3\frac{1}{2}$  inches.

## Three-E Bus Clamps

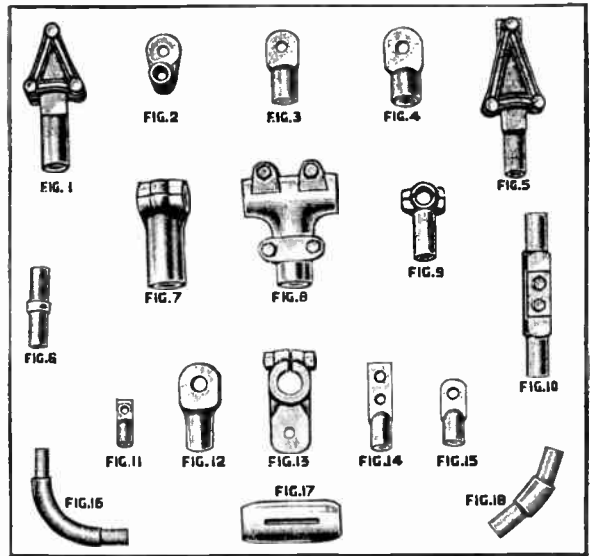


The Three-E line of bus clamps is complete in every respect. Clamps can be supplied for all commercial size bars.

The illustrations show a medium duty Type H and Type A, and a heavy duty Type H and Type A Clamp.

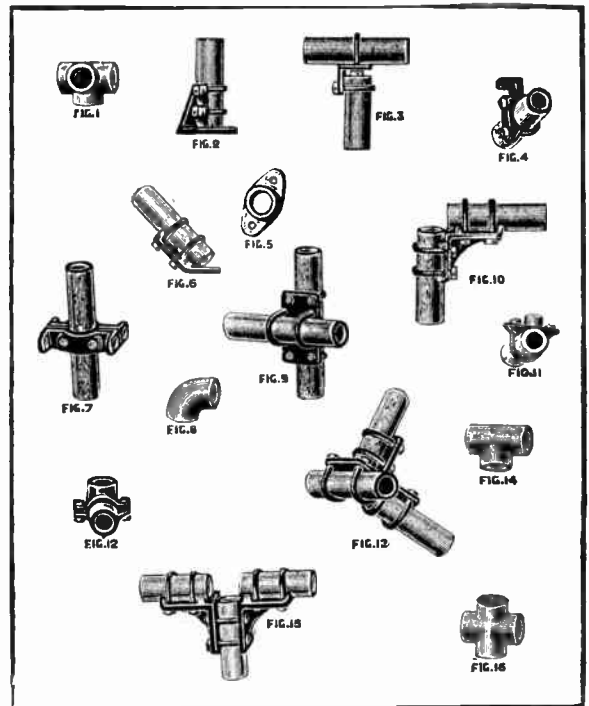
## Three-E Electrical Copper Fittings

For Wire, Cable, Rod, Tubing and Bar



The above illustrations show but a small portion of the Three-E line of conductor fittings. Fittings can be supplied for any size or kind of conductor.

## Three-E Iron Pipe Fittings



The above illustrations show but a small portion of the Three-E line of pipe fittings. Fittings can be supplied for the commercial pipe sizes in all manner of shapes to meet most any condition.

Ask for Bulletin Giving Complete Information



**G-E Type I-16 Watthour Meters**  
Single-Phase, 60 Cycles



Designed for residential or commercial service. For high torque large overload capacity; excellent overload accuracy, no tendency to creep.

A single iron casting forms the base, the housing for motor element and the support for damping magnets, bearings and register.

Furnished with glass cover and special sealing arrangement. All parts readily accessible when back plate is removed.

Amperes	115-120 Volts, 2-Wire		230-240 Volts, 2-Wire	
	Cat. No.	Each	Cat. No.	Each
5	2X798	\$16.65	2X808	\$18.65
10	2X799	17.60	2X809	19.60
15	2X800	18.60	2X810	20.80
25	2X801	24.50	2X811	27.25
50	2X802	35.50	2X812	38.50
100	29X129	45.00	29X131	48.00
-----				
	230-240 Volts, 3-Wire (4-Terminal)		230-240 Volts, 3-Wire (6-Terminal)	
	Cat. No.	Each	Cat. No.	Each
5	9X434	\$18.65	10X170	\$18.65
10	9X435	19.60	10X171	19.60
15	9X436	20.80	10X172	20.80
25	9X437	27.25	10X173	27.25
50	16X653	38.50	16X655	38.50

**Meters for Use with Instrument Transformers**

For Use with Current and Potential Transformers  
Secondary Rating, 5 Amperes, 115 Volts

Cat. No. 10X208 .....each \$21.00

For Use with Current Transformers  
Secondary Rating, 5 Amperes

†Cat. No.	Each	Circuit Rating	Meter
31X436	\$21.00	115-120 Volts, 2-Wire	2-Wire
†10X209	23.00	230-240 Volts, 2-Wire	2-Wire
10X210	23.00	230-240 Volts, 3-Wire	*3-Wire

Meters can be supplied with top bearing detent to prevent negative registration for \$1.00 net extra.

\*This is a 6-terminal meter with a 3-wire winding intended for use with 2 separate current transformers on a 3-wire circuit.

†3-wire, single-phase circuits can be metered with the 2-wire meter Cat. No. 10X209 when connected with double-primary, single-secondary, 3-wire type of current transformer.

‡Cat. Nos. of meters do not include transformers and the order should state the ratio of the transformers with which they will be used that they may be calibrated and furnished with suitable register to read directly the primary energy. When meters are to be suitable for use with instrument transformers but not rated nor equipped with direct-reading registers for any particular transformer combination, order should so state.

Meters may be used on circuits the voltage of which may be 10% above or below the minimum rated voltage of the meter. When ordering meters for voltages outside of these limits, specify the normal operating voltage.

**G-E Type D-14 Polyphase Watthour Meters**

2-Element, 60 Cycles



A single iron casting constitutes the base and frame and provides a rigid mounting for the parts as well as a housing for the elements. Parts are readily accessible. The one-piece terminal block is removable by removing two screws, and includes 8 current terminals and 7 potential and demand terminals.

Glass cover fits against cork gasket.

If wanted for circuits having voltage more than 10% above or below the minimum rated voltages below, specify the normal operating voltage; otherwise order by catalog number.

		115-120 Volts					
Cat. Nos.	Circuits	Each	Amps.	Cat. Nos.			
				3-Ph., 3-W.	2-Phase 4-Wire		
28X223	28X263	\$54.00	5	28X226	28X266	\$65.00	25
28X224	28X264	58.00	10	28X227	28X267	73.00	50
28X225	28X265	61.00	15				
-----							
		230-240 Volts					
28X228	28X268	\$60.00	5	28X231	28X271	\$71.00	25
28X229	28X269	64.00	10	28X232	28X272	79.00	50
28X230	28X270	67.00	15				
-----							
		460-480 Volts					
28X233	28X273	\$74.00	5	28X236	28X276	\$85.00	25
28X234	28X274	78.00	10	28X237	28X277	93.00	50
28X235	28X275	81.00	15				
-----							
		575-600 Volts					
28X238	28X278	\$74.00	5	28X241	28X281	\$85.00	25
28X239	28X279	78.00	10	28X242	28X282	93.00	50
28X240	28X280	81.00	15				

**Meters for Use with Instrument Transformers**

3-Phase, 3-Wire; 2 Phase, 3-Wire; 2-Phase, 4-Wire Circuits  
For Use with Current and Potential Transformers

Secondary Rating of Instrument Transformers, 5 Amperes, 115 Volts

\*Cat. No. 28X304 .....each \$54.00

For Use with Current Transformers

Secondary Rating of Current Transformers, 5 Amperes

Cat. No.	Each	Volts	Cat. No.	Each	Volts
*31X444	\$54.00	115-120	*28X311	\$74.00	460-480
*28X310	60.00	230-240	*28X312	74.00	575-600

\*Nos. do not include transformers and order should state ratio of transformer with which they will be used that they may be calibrated and furnished with suitable register to read directly the primary energy. When meters are to be suitable for use with instrument transformers but not rated nor equipped with direct reading registers for any particular transformer combination, order should so state.

Meters can be supplied with detent device to prevent negative registration \$1.00 net extra.

## G-E Type D-15 Polyphase Watthour Meters

3-Element, 60 Cycles  
4-Wire, 3-Phase Service



A single iron casting constitutes the base and frame and provides a rigid mounting for the parts as well as a housing for the elements. Parts are readily accessible. The one-piece terminal block is removable by removing two screws, and includes 8 current terminals and 7 potential and demand terminals.

Glass cover fits against cork gasket.

If wanted for circuits having voltage more than 10% above or below the minimum rated voltages below, specify the normal operating voltage; otherwise order by cat. no.

### 199-208△115-120Y Volts

Cat. No.	Each	Amperes	Cat. No.	Each	Amperes
28X318	\$81.00	5	28X321	\$97.00	25
28X319	87.00	10	28X322	109.00	50
28X320	91.50	15			

### 460-480△266-277Y Volts

28X328	\$90.00	5	28X331	\$106.00	25
28X329	96.00	10	28X332	118.00	50
28X330	100.00	15			

## Meters for Use with Instrument Transformers

For Use with Current and Potential Transformers

Secondary Rating of Instrument Transformers, 5 Amperes, 115 Volts

\*Cat. No. 28X336. . . . . each \$81.00

For Use with Current Transformer Only

Secondary Rating of Current Transformers, 5 Amperes

Cat. No.	Each	Circuit Rating Volts	Cat. No.	Each	Circuit Rating Volts
*28X341	\$81.00	{ 199-208△ 115-120Y	*28X342	\$90.00	{ 460-480△ 266-277Y

\*Nos. do not include transformers. Order should specify ratio of transformers with which they will be used that they may be calibrated and furnished with suitable register to read directly the primary energy. When meters are to be suitable for use with instrument transformers but not rated nor equipped with direct reading registers for any particular transformer combination, order should so state.

Meters can be supplied with detent to prevent negative registration for \$1.00 net extra.

## G-E D.C. Watthour Commutating Meters

For House Service

Type C-6—Side Connected—Metal Cover



In this meter the resistor for the potential circuit is combined with the light load compensating coil, no other external resistance being used. The entire meter element is supported on a frame of aluminum alloy. The back is also cast of aluminum alloy. Cover is of zinc with domed front, which adds greatly to its strength, and provided with a single window to observe the dial.

The external finish is dull black, presenting a neat appearance. The frame and various parts inside the meter retain their natural finish of aluminum and brass.

### 2-Wire

Cat. No.	Each	*Volts	Amps.	Cat. No.	Each	*Volts	Amps.
37594	\$31.00	115-120	5	37614	\$35.00	230-240	5
37595	33.00	115-120	10	37615	40.00	230-240	10
37596	37.00	115-120	15	37616	47.00	230-240	15
37597	44.00	115-120	25	37617	54.00	230-240	25
37598	58.00	115-120	50	37618	68.50	230-240	50
37599	72.00	115-120	75	37619	74.00	230-240	75
37600	85.00	115-120	100	37620	87.00	230-240	100
37601	99.00	115-120	150	37621	112.00	230-240	150
37602	126.00	115-120	300	37622	144.00	230-240	300
37603	180.00	115-120	600	37623	200.00	230-240	600

### 3-Wire

37604	\$35.00	230-240	5	37609	\$79.00	230-240	75
37605	40.00	230-240	10	37610	94.00	230-240	100
37606	47.00	230-240	15	37611	121.00	230-240	150
37607	54.00	230-240	25	37612	166.00	230-240	300
37608	71.00	230-240	50				

Meters can be equipped with ratchet device to prevent negative registration for \$2.00 net extra.

\*When ordering meters for voltages outside of these limits the normal operating voltage should be specified.

## Type C-15—Bottom Connected—Metal Cover



This meter is identical in principle with the Type C-6 meter and retains those essential features which insure successful operation.

Meter differs largely in mechanical details, which are possible by limiting its ratings to 5, 10 and 15 amperes, 2 and 3-wire, and a maximum of 250 volts.

These differences are reduction in size and weight and the use of Type I-16 meter parts, such as register, terminals, and magnets, including micrometer full-load adjustment device.

Has removable terminals and separately sealed terminal chamber.

### 2-Wire

Cat. No.	Each	*Volts	Amps.	Cat. No.	Each	*Volts	Amps.
269862	\$26.00	115-120	5	269864	\$29.00	230-240	5
269863	28.00	115-120	10	269865	33.00	230-240	10
279274	32.00	115-120	15	279275	39.00	230-240	15

### 3-Wire, 4-Terminal

269866	\$29.00	230-240	5	290855	\$29.00	230-240	5
269867	33.00	230-240	10	290856	33.00	230-240	10
279276	39.00	230-240	15	290857	39.00	230-240	15

### 3-Wire, 6-Terminal

269866	\$29.00	230-240	5	290855	\$29.00	230-240	5
269867	33.00	230-240	10	290856	33.00	230-240	10
279276	39.00	230-240	15	290857	39.00	230-240	15

Meters can be equipped with ratchet device to prevent negative registration for \$2.00 net extra.

\*When ordering meters for voltages outside of these limits the normal operating voltage should be specified.

**G-E Watthour Meters  
For Switchboard Service  
60 Cycles**



Type IS-8

This line combines the improved elements of G-E front-connected meters with the narrow switchboard case. May be mounted on 5 1/2-inch centers permitting maximum number on panel of given width.

Finished in aluminum interior and black exterior. Steel parts galvanized before finish is applied.

Self-contained sizes have good accuracy on loads up to 300%; ample margin of safety on greater loads. Polyphase types have potential indicating lamps. In case of an open circuit, lamp on that phase shows "out." If wanted for circuits having voltage more than 10% above or below minimum rated voltages, specify normal operating voltage.

**Type IS-8 (Single-Phase) Self-Contained Meters  
2-Wire**

Cat. No.	Each	Volts	Amps.	Cat. No.	Each	Volts	Amps.
21X913	\$40.00	115-120	5	21X917	\$42.00	230-240	5
21X915	43.00	115-120	10	21X919	45.00	230-240	10

**Type IS-8 for Use with Instrument Transformers**

For Use with Current and Potential Transformers  
Secondary Rating, 5 Amps., 115 Volts

*21X921	\$40.00	115	5				
*21X923	\$40.00	115-120	..	*21X925	\$42.00	230-240	..

For Use with Current Transformers  
Secondary Rating, 5 Amperes

**Type DS-19 (Polyphase) Self-Contained Meters  
For 3-Wire, 2 and 3-Phase; 4-Wire, 2-Phase**

Cat. No.	Each	Volts	Amps.	Cat. No.	Each	Volts	Amps.
21X931	\$72.00	115-120	5	23X113	\$89.00	460-480	5
21X933	76.00	115-120	10	23X115	93.00	460-480	10
21X935	79.00	230-240	5	23X117	89.00	575-600	5
21X937	83.00	230-240	10	23X119	93.00	575-600	10

**Type DS-19 for Use with Instrument Transformers**

For Use with Current and Potential Transformers  
Secondary Rating, 5 Amps., 115 Volts

*21X939	\$72.00						
*21X941	\$72.00	115-120	..	*21X945	\$89.00	460-480	..
*21X943	79.00	230-240	..	*21X947	89.00	575-600	..

For Use with Current Transformers  
Secondary Rating, 5 Amperes

**Type DS-20 (Polyphase) Self-Contained Meters  
For 4-Wire, 3-Phase**

Cat. No.	Each	Volts	Amperes
21X949	\$108.00	199-209Δ and 115-120Y	5
21X951	114.00	199-209Δ and 115-120Y	10
21X953	118.00	460-480Δ and 266-277Y	5
21X955	124.00	460-480Δ and 266-277Y	10

**Type DS-20 for Use with Instrument Transformers**

For Use with Current and Potential Transformers  
Secondary Rating, 5 Amps., 115 Volts

*21X957	\$108.00		
*21X959	\$108.00	199-208Δ and 115-120Y	..
*21X961	118.00	460-480Δ and 266-277Y	..

\*Meter only. Transformers should be ordered by Cat. No. and rating. If meters are to be used with instrument transformers in customer's possession, ratio of transformers must be given on order. Unless otherwise specified, meters ordered with transformers or for use with transformers in customer's possession will be calibrated and furnished with suitable register to read directly the primary energy. When ordering meters for voltages outside these limits, specify normal voltage.

Meters can be supplied with top bearing detent to prevent registration for \$1.00 net extra.

Prices on meters for other frequencies on request.

**G-E Type KT Electric Time Meters**



Consists of a little synchronous motor, geared to a registering counter, the whole mounted in a case about 4 1/2 inches in diameter and 2 3/4 inches deep.

Meter will measure actual operating time of any electric equipment depending on a.c. For example, meter may be used to indicate machine hours by showing motor running hours, the "on" time of street lighting circuits, etc.

Supplied to register hours, tenths of hours or minutes. In ordering, specify register desired, voltage and cycles of circuit; whether portable, conduit or switchboard type.

115 Volts, 25, 50 or 60 Cycles	each	\$17.00
230 Volts, 25, 50 or 60 Cycles	each	18.00
460 Volts, 25, 50 or 60 Cycles	each	19.00

**Jewels and Pivots for Watthour Meters**

**Jewels—Mounted in Screws**

**No. 39924—Sapphire**

For d.c. meters, Types C, C-5, C-6, C-7, C-9 and C-15; single-phase, house and switchboard meters, Types I, I-8, IS-2 and IS-3 and polyphase meters Types D-3, D-4, D-9, DS-2, DS-3, DS-4, DS-5 and DS-9

No. 39924, in Lots of 10..... \$6.60



**No. 6X453—Sapphire**

For single-phase meters, Types I-14, I-15, I-16, I-18, IS-4, IS-5, IS-6, IS-7 and IS-8; for polyphase meters, Types D-6, D-7, D-8, D-14, D-15, DS-6, DS-7, DS-11, DS-12, DS-19, DS-20, DS-21 and DS-23 and for test meters, Types IB-5, IB-6, IB-7, IB-8 and IB-9.

No. 6X453, in Lots of 10..... \$5.40



**No. 39925—Diamond**

For d.c. house service meters of Type C construction. No. 39925, in Lots of 10..... \$52.00

**No. 118569—Diamond**

For d.c. meters of double armature construction, Types CS, CS-2, CS-3, CS-4, G-2 and G-3. No. 118569, in Lots of 10..... \$52.00



**No. 39926—Diamond**

For Types E and G house service d.c. meters of earlier than Type C construction. No. 39926, in Lots of 10..... \$52.00



**No. 295309 Pivots**



For all types of meters. Packed in boxes of 25. No. 295309.....per box \$3.85





## Model 45 Weston Portable D.C. Instruments



For general testing work for rugged service. Accurate within 1/2 of 1%. Permanent magnet moving coil type. Shielded from external magnetic fields.

Enclosed in a polished hardwood case provided with a hinged cover and carrying handle.

Voltmeters, ammeters and milliammeters are 8x8x4 3/4 inches in size; scale length, 5 3/16 inches. Approximate weight, 9.9 pounds.

Resistance, 100 ohms per volt, self-contained to 750 volts inclusive; ranges from 750 to 25000 volts may be had by using external multipliers. Voltmeters having a higher sensitivity than 100 ohms per volt available on order.

Single Range					
Ranges	Each	Scale Divisions	Ranges	Each	Scale Divs.
*.2-0-2.8	\$60.00	150	150	\$60.00	150
1.5	60.00	150	300	64.00	150
3	60.00	150	600	72.00	120
5	60.00	100	750	76.00	150
15	60.00	150	.....	.....	.....
Double Range					
15/3	\$65.00	150	300/150	\$69.00	150
150/3	65.00	150	600/150	77.00	150
150/15	65.00	150	600/300	77.00	150
150/75	65.00	150	750/150	81.00	150
Triple Range					
150/15/3	\$70.00	150	750/300/150	\$86.00	150
300/150/3	74.00	150	.....	.....	.....

\*Scale adapted for use in connection with cadmium test on storage batteries.

### Ammeters

Self-contained up to and including 25 amperes; above 25 amperes, with external shunts. Ranges, 1.5 to 25 amperes may be had with external shunts, at base price plus price of shunt selected. Specify when desired for use with Weston Rotary Shunt, as an instrument with a special movement having a resistance of 10 ohms and a sensitivity of 5 milliamperes must be supplied for this purpose. This special instrument is supplied without extra charge.

Ranges	Each	Scale Divs.	Ranges	Each	Scale Divs.	Ranges	Each	Scale Divs.
**Base	\$60.00	.....	25	\$67.00	125	300	\$68.25	150
1.5	67.00	150	50	67.00	100	500	71.25	100
3	67.00	150	75	67.00	150	750	74.00	150
5	67.00	100	100	67.00	100	1000	80.00	100
10	67.00	100	150	67.00	150	1500	89.00	150
15	67.00	150	200	67.00	100	.....	.....	.....

\*\*To determine the price of any other range ammeter not listed, add base price to price of shunt desired.

### Milliammeters

Range	Each	Scale Divs.	Resist. Ohms	Range	Each	Scale Divs.	Resist. Ohms
1.5	\$61.00	150	360	100	\$60.00	100	.50
3	61.00	150	210	150	60.00	150	.35
7.5	60.00	150	28	300	60.00	150	.17
15	60.00	150	3.3	750	67.00	150	.07
30	60.00	150	1.67	1500	67.00	150	.03
75	60.00	150	0.70	.....	.....	.....	.....

Leather Case for Instruments shown above, each \$13.00

### Volt-Ammeters

Current and voltage ranges are self-contained. Voltage sensitivity is exactly 100 ohms per volt. Dimensions, 7 7/8 x 9 1/16 x 4 5/8 inches. Approximate weight, 10.5 pounds.

RANGES				Scale Divs.
Volts	Amperes	Each		
350	350 MA.	\$80.00		140
±30/3	30/3/0.3/0.03	105.00		150
±150/30/3	30/3/0.3	100.00		150
150/15/1.5	15/1.5/.15	100.00		150
±150/15/3	15/1.5/.15	100.00		150

†Conforms with A.R.A. specifications. ‡Designed for railway use; all ranges protected by replaceable fuses.

## Model 155 Weston Portable A.C. Instruments



Movable iron type. Scale length, 5 1/4 inches. Black walnut case without cover, leather carrying handle.

Power consumption: Voltmeters at 115 volts, 6.5 watts; at 115 volts, 25 or 60 cycles, 6.5 volt-amperes. Ammeters at 5 amperes, 1.1 watts; at 5 amperes, 25 cycles, 1.1 volt-amperes; at 5 amperes, 60 cycles, 1.4 volt-amperes.

### \*Voltmeters

Self-contained up to and including 750 volts. Higher ranges may be obtained by using Models 311 or 457 portable potential transformers in conjunction with 150-volt instrument. Dimen.: to 300 v., 7x7 1/8 x 3 1/4"; above 300 v., 7 3/4 x 8 3/4 x 4". Wt.: to 300 v., 4 lbs.; above 300 v., 5 lbs.

Single Range							
Range	Each	Resist. Ohms	Scale Divs.	Range	Each	Resist. Ohms	Scale Divs.
30	\$58.00	150	150	250	\$61.00	4100	125
50	58.00	415	100	300	62.00	5000	150
75	58.00	625	150	500	67.00	8333	100
125	58.00	1670	125	600	70.00	10,000	120
150	58.00	2000	150	750	74.00	12,500	150
Double Range							
Ranges	Each	Approx. Resist. Ohms	Scale Divs.				
150/75	\$63.00	1250/625	150				
300/150	67.00	5000/2500	150				
600/150	75.00	10000/2500	150				
600/300	75.00	10000/5000	150				
750/150	79.00	12500/2500	150				
750/300	79.00	12500/5000	150				
Triple Range							
450/300/150	\$77.00	7500/5000/2500	150				
600/300/150	80.00	10000/5000/2500	150				
750/300/150	84.00	12500/5000/2500	150				

\*Meters to be used on 500 cycles, add \$4.00 to prices.

### Ammeters

Self-contained up to and including 500 amperes. Higher ranges available by using Models 312, 313 or 461 current transformers in conjunction with 5-ampere instrument. Dimen.: to 300 amp., 7x7 1/8 x 3 1/4"; above 300 amp., 7 3/4 x 8 3/4 x 4". Wt.: to 300 amp., 4 lbs.; above 300 amp., 5 lbs.

### Single Range

Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Divs.
1	\$56.00	1.15	.00244	100
2	56.00	.287	.00057	100
3	56.00	.128	.00027	150
5	56.00	.0435	.000091	100
10	56.00	.0127	.000023	100
15	60.00	.0066	.000011	150
25	60.00	.0032	.0000033	125
50	62.00	.00117	.....	100
75	62.00	.00085	.....	150
100	65.00	.00047	.....	100
150	68.00	.00034	.....	150
200	71.00	.00034	.....	100
250	74.00	.000172	.....	125
300	77.00	.000172	.....	150
400	85.00	.000054	.....	80
500	85.00	.000054	.....	100
Double Range				
1/5	\$71.00	1.15/4.6	.....	100
2/1	71.00	.34/1.36	.....	100
5/2.5	71.00	.052/0.218	.....	100
10/5	71.00	.012/0.045	.....	100

### Milliammeters

Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Divs.	Range	Each	Approx. Resist. Ohms	Inductance Henries	Scale Divs.
20	\$56.00	1540	2.2	100	150	\$56.00	33	.067	150
30	56.00	624	1.1	150	250	56.00	12	.022	125
50	56.00	433	.61	100	500	56.00	2.25	.006	100
75	56.00	123	.28	150	750	56.00	1.10	.002	150

Double range milliammeters, prices on application. Leather cases: For voltmeters up to and including 300 volts, ammeters up to and including 300 amperes, and all milliammeters, \$11.00; for voltmeters above 300 volts, \$14.00; for ammeters above 300 amperes, \$12.00.

**Model 433 Weston Portable A.C. Instruments**



Electromagnetic or moving iron type instruments contained in bakelite cases with leather carrying handles. Shielded from external magnetic fields.

Instruments can be left in circuit continuously without overheating, therefore no contact key is used.

Dimensions, 5 1/16 x 6 1/32 x 3 1/2 inches; scale length, 3 1/16 inches. Weight, 2 1/2 pounds.

**Voltmeters**

Self-contained for ranges shown. Higher ranges obtained by using multipliers or Model 311 or 457 potential transformer in conjunction with a 150-volt instrument; for use on frequencies up to 133 cycles per second.

Voltmeters to be used on 500 cycles, add \$4.00 to prices.

Single Range		Double Range		Triple Range			
Ranges	Each	Resist. Ohms	Scale Divs.	Ranges	Each	Resist. Ohms	Scale Divs.
10	\$41.00	80	100	75	\$41.00	2660	75
15	41.00	168	150	100	41.00	3500	100
20	41.00	224	100	125	41.00	4400	125
30	41.00	425	60	150	41.00	5300	150
50	41.00	1140	100	250	44.00	18200	50
60	41.00	1370	60	300	45.00	22000	60
10/5	\$46.00	40/20	100	*150/15	\$46.00	3000/300	150
20/10	46.00	160/80	100	150/75	46.00	5300/2650	150
30/15	46.00	336/168	150	300/150	50.00	22000/11000	150
60/30	46.00	850/425	60				

\*Low range of this combination has an accuracy of 3%.

Has metal extension on case to accommodate additional resistance necessary for high ranges.

Ranges	Each	Resistance Ohms	Scale Divs.
450/300/150	\$60.00	33000/22000/11000	150
600/300/150	63.00	44000/22000/11000	150

**Ammeters**

For use on frequencies up to 500 cycles per second, except triple range ammeters which have self-contained transformer limiting use to a.c. with frequencies up to 133 cycles.

Single Range		Double Range		Triple Range					
Ranges	Each	Resist. Ohms	Inductance Henries	Scale Divs.	Ranges	Each	Resist. Ohms	Inductance Henries	Scale Divs.
1	\$39.00	1.12	.00095	100	10	\$39.00	.014	.0000084	100
1.5	39.00	.476	.00044	150	15	43.00	.007	.0000036	150
2	39.00	.282	.00025	100	25	43.00	.003	.0000013	50
3	39.00	.119	.00011	60	30	43.00	.002	.000001	60
5	39.00	.053	.000038	100	50	45.00	.0005	.0000003	100
7.5	39.00	.02	.000017	75					

Ranges	Each	Resist. Ohms	Scale Divs.	Ranges	Each	Resist. Ohms	Scale Divs.
10/5	\$52.00	.0135/.054	100	20/10	\$56.00	.0033/.0135	100

Operate through self-contained multi-range transformers, therefore they cannot be used on d.c.

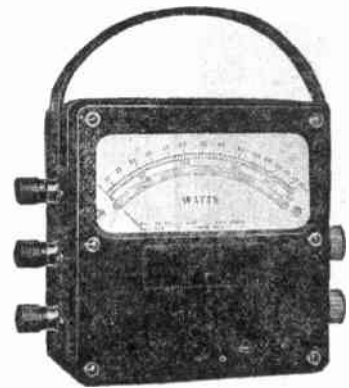
3/1.5/1.75	\$88.00	150	15	7.5/1.5	\$88.00	150
5/2.5/1	88.00	50	20	5/2	88.00	100
7.5/3/1.5	88.00	150	30	7.5/3	88.00	150
10/5/1	88.00	50	50	20/5	88.00	100
10/5/2.5	88.00	50	50	20/10	88.00	100

**Milliammeters**

Single Range		Double Range		Triple Range			
Range	Each	Resist. Ohms	Scale Divs.	Range	Each	Resist. Ohms	Scale Divs.
30	\$39.00	460	60	300	\$39.00	10.9	60
75	39.00	211	75	400	39.00	6	80
100	39.00	123	100	500	39.00	3.85	100
150	39.00	49	150	600	39.00	2.5	60
200	39.00	29.5	100	750	39.00	2	75
250	39.00	16.4	50				

Also available in double range combinations.

**Model 432 Weston Portable D.C. and Single-Phase A.C. Wattmeters**



This wattmeter is of the electro-dynamometer type, accurate within 1/2 of 1%. Shielded from external magnetic fields.

Made with double voltage and single and double current ranges, self-contained up to 300 volts and 50 amperes. Potential ranges up to 750 volts are available by using external multipliers, higher ranges require the use of potential transformers such as the Model 311 or 457. Current ranges can be extended beyond 50 amperes by using a 5-ampere instrument in conjunction with either the Model 312, 313 or 461 current transformers.

Potential ranges have maximum voltage capacities as shown in the range listing. The maximum capacity of the current ranges is 50% greater than the normal rated current capacity.

These instruments are accurate on all commercial frequencies up to 133 cycles per second. The phase angle is negligible on such frequencies. They may be used on d.c. and checked in comparison with d.c. standards. The temperature error is less than 1% for 25° C. change in temperature.

As the working error is negligible, they may be left in circuit continuously without appreciable effect on the accuracy.

Power consumption: Potential side, at 115 volts, 1.2 watts; at 115 volts, 25 or 60 cycles, 1.2 volt-amperes. Current side, at 5 amperes, .67 watt; at 5 amperes, 25 cycles, .73 volt-ampere and at 5 amperes, 60 cycles, .98 volt-ampere.

Dimensions: 6 1/2 x 5 1/4 x 3 1/2 inches; scale length, 3 1/16 inches. Weight, 3 1/4 pounds.

VOLTS		Each	AMPERES	WATTS		APPROX. RES. OHMS		Scale Divs.	
Normal	Max.			Low Range	High Range	Low Range	High Range		
75/150	100/200	\$70.00	1	1.5	75	150	5500	11000	75
150/300	200/400	74.00	1	1.5	150	300	11000	22000	75
75/150	100/200	70.00	2	3	150	300	5500	11000	75
150/300	200/400	74.00	2	3	300	600	11000	22000	60
75/150	100/200	70.00	5	7.5	375	750	5500	11000	75
150/300	200/400	74.00	5	7.5	*.75	*1.5	11000	22000	75
75/150	100/200	70.00	10	15	*.75	*1.5	5500	11000	75
150/300	200/400	74.00	10	15	*1.5	*3	11000	22000	75
75/150	100/200	73.00	20	30	*1.5	*3	5500	11000	75
150/300	200/400	77.00	20	30	*3	*6	11000	22000	60
75/150	100/200	76.00	50	75	*3	*7.5	5500	11000	75
150/300	200/400	80.00	50	75	*7.5	*15	11000	22000	75

\*Kilowatts.

Double current ranges with range changing switch available at an extra charge. Prices upon application.

Leather Case.....each \$7.50

**Y-Boxes for Model 432 Wattmeters**

For Use on Balanced 3-Phase 3-Wire Circuits

Normal Voltage of Instrument	Each	Y-Box Multiplying Constant	Normal Line Voltage With Y-Box	Maximum Voltage With Y-Box	Box	
					Type	No.
75	\$24.00	3	150	170	5	1
150	24.00	3	300	340	5	2
150	24.00	4	400	450	5	2
150	24.00	5	500	550	5	3
150	24.00	6	600	650	5	3

## Model 430 Weston Portable D.C. Instruments



Accurate within 1/2 of 1%. Permanent magnet moving coil type. Unshielded from external magnetic fields.

Voltmeters are made with single and triple ranges at a standard sensitivity of 1000 ohms per volt, with 5000 ohms per volt also available at an increase in price.

Ammeters and milliammeters regularly made with single and triple ranges, self-contained up to 50 amperes inclusive. Double ranges available on special order. Microammeters are made only in single range form.

Voltmeters with triple ranges only; sensitivity, 1000 ohms per volt. Available with self-contained ranges of 300 volts and 50 amperes. Prices on application.

Dimensions, 5 1/16 x 6 1/2 x 3 1/2 inches; scale length, 4 inches. Approximate weight, 3 1/2 pounds.

### Voltmeters Single Range

Ranges	Each	Scale Divisions	Ranges	Each	Scale Divs.
3	\$43.00	150	300	\$47.00	150
15	43.00	150	600	55.00	120
50	43.00	100	750	59.00	150
150	43.00	150	1000	64.00	100
Triple Range					
30/7.5/3	\$53.00	150	500/100/10	\$63.00	100
75/30/7.5	53.00	150	750/300/7.5	69.00	150
150/15/3	53.00	150	750/300/150	69.00	150
300/150/3	57.00	150			

Above ranges also available with a sensitivity of 5000 ohms per volt at an increase in price. Suitable for electronic work.

### Ammeters Single Range

Ranges	Each	Scale Divisions	Ranges	Each	Scale Divs.
1	\$43.00	100	7.5	\$43.00	150
1.5	43.00	150	15	43.00	150
3	43.00	150	30	43.00	150
5	43.00	100	50	43.00	100
Triple Range					
5/0.5/0.05	\$53.00	100	25/10/2.5	\$53.00	100
5/2.5/0.5	53.00	100	25/10/5	53.00	100
10/1/0.1	53.00	100	30/3/1.5	53.00	150
10/2.5/1	53.00	100	30/6/3	53.00	150
10/5/1	53.00	100	30/15/3	53.00	150
15/3/0.15	53.00	150	50/5/0.5	53.00	100
15/3/1.5	53.00	150	50/10/2	53.00	100
25/2.5/0.5	53.00	100	50/20/5	53.00	100
25/5/2.5	53.00	100	50/25/10	53.00	100

### Milliammeters Single Range

Ranges	Each	Approx. Resist. Ohms	Scale Divs.	Ranges	Each	Approx. Resist. Ohms	Scale Divs.
1	\$44.00	92	100	30	\$43.00	88	150
1.5	44.00	69	150	75	43.00	...	150
3	44.00	124	150	150	43.00	...	150
7.5	43.00	34	150	300	43.00	...	150
15	43.00	14	150	750	43.00	...	150
Triple Range							
.75/.15/.03	\$70.00	...	150	150/30/7.5	\$53.00	...	150
3/0.3/0.03	70.00	...	150	1500/150/15	53.00	...	150
15/1.5/0.15	65.00	...	150	3000/300/30	53.00	...	150
30/7.5/3	54.00	...	150	3000/750/150	53.00	...	150
150/15/1.5	54.00	...	150				

Milliammeters with ranges above 30 MA. are shunted and have a drop of 50 MV. ± 3%.

### Microammeters Single Range

Ranges	Each	Scale Divs.	Ranges	Each	Scale Divs.
30	\$60.00	3500	200	\$48.25	560
50	57.50	2200	500	48.25	275
100	55.00	1650			

Leather case for single range voltmeter, single or triple range ammeter, milliammeter or microammeter, \$7.50; case for triple range voltmeter, \$8.00.

## Model 280 Weston Portable D.C. Instruments



Accurate within 1%. Permanent magnet moving coil type.

Voltmeters and volt-ammeters have resistances of approximately 100 ohms per volt.

Dimensions, 4.4x4.6x1.5 inches; scale length, 2 1/16 inches. Approximate weight, 1.1 pounds.

### Voltmeters

Range	Each	Scale Divs.	Range	Each	Scale Divs.
1 2	\$25.00	60	150	\$25.00	75
1 5	25.00	75	400/40	40.00	40
3	25.00	60	350/35	40.00	70
5	25.00	50	25/10/2.5	29.00	50
7.5	25.00	75	30/3/1.5	29.00	60
10	25.00	50	30/15/3	29.00	60
15	25.00	75	50/5/2.5	29.00	50
20	25.00	40	50/25/5	29.00	50
30	25.00	60	100/25/2.5	29.00	50
*35	43.00	70	100/50/5	29.00	50
50	25.00	50	150/15/1.5	29.00	75
60	25.00	60	150/15/3	29.00	60
75	25.00	75	150/30/3	29.00	60
100	25.00	50	150/60/3	29.00	60
120	25.00	60	150/75/3	29.00	75

\*A special voltmeter with a resistance of 32000 ohms; with double scale reading volts and ohms. For use in testing insulating resistance on train control systems.

### Millivoltmeters

Range	Each	Scale Divs.	Range	Each	Scale Divs.
50	\$25.00	50	300	\$25.00	60
75	25.00	75	400	25.00	40
100	25.00	50	500	25.00	50
150	25.00	75	600	25.00	60
200	25.00	40	750	25.00	75
250	25.00	50			

### Ammeters

Range	Each	Scale Divs.	Range	Each	Scale Divs.
1	\$25.00	50	5/2 5/0 25	\$29.00	50
1 5	25.00	75	10/1/0 1	29.00	50
2	25.00	40	10/1/0 5	29.00	50
3	25.00	60	10/5/0 5	29.00	50
5	25.00	50	10/2 5/1	29.00	50
7.5	25.00	75	15/3/0 15	29.00	60
10	25.00	50	15/3/1 5	29.00	60
15	25.00	75	25/2 5/0 5	29.00	50
20	25.00	40	25/5/2 5	29.00	50
25	25.00	50	25/10/2 5	29.00	50
30	25.00	60	25/10/5	29.00	50
50	32.00	50	30/3/1 5	29.00	60
100	32.00	50	30/6/3	29.00	60
150	32.00	75	30/15/3	29.00	60

†Provided with external shunt having a drop of 50 MV.

### Milliammeters

Milliammeters with ranges above 30 milliamperes are shunted and have a drop of approximately 100 MV.

Range	Each	Approx. Resist.	Scale Divs.	Range	Each	Approx. Resist.	Scale Divs.
1 5	\$26.00	27	75	300	\$25.00	.33	60
3	26.00	18	60	500	25.00	.2	50
5	25.00	12	50	750	25.00	.13	75
10	25.00	10	50	30/15/3	30.00	...	60
20	25.00	1 5	10	50/10/1	30.00	...	50
25	25.00	1 2	50	50/10/5	29.00	...	50
30	25.00	1 2	60	50/25/5	29.00	...	50
50	25.00	2 0	50	125/25/5	29.00	...	50
75	25.00	1 33	75	150/15/1 5	29.00	...	75
100	25.00	1 00	50	150/75/15	29.00	...	75
150	25.00	0 66	75	600/120/30	29.00	...	60
250	25.00	0 4	50				

### Volt-Ammeters

RANGES				RANGES			
Volts	Each	Amperes	Scale Divs.	Volts	Each	Amperes	Scale Divs.
30/3/1.5	\$43.00	30/3/1.5	60	150/15/1.5	\$43.00	30/15/1.5	60
30/15/3	43.00	15/3/0.15	60	150/15/3	43.00	15/1.5/0.15	60
30/3/1.5	43.00	30/3/0.3	60	150/15/3	43.00	15/3/1.5	60
50/5/2.5	43.00	10/1/0.1	50	150/15/3	43.00	30/3/1.5	60
50/5/2.5	43.00	10/5/0.5	50	150/15/3	43.00	30/15/3	60
50/25/2.5	43.00	25/2.5/0.5	50	150/15/3	43.00	30/3/0.3	60
160/30/6	43.00	6/0.6/0.03	60	150/15/3	43.00	30/15/1.5	60
150/15/1.5	43.00	15/1.5/0.15	75	150/30/3	43.00	30/15/1.5	60
150/15/1.5	43.00	15/1.5/0.3	60	150/30/3	43.00	30/0.6/0.06	60
150/15/1.5	43.00	30/3/1.5	60	150/60/3	43.00	30/6/0.06	60

†For railway and automatic train control testing. Leather Case for Model 280 Instruments.....each \$3.00



**Model 540 Weston Portable Fused 6-Range Volt-Ammeters For D.C. Only**



Accurate within 1%. Permanent magnet moving coil type. Contained in bakelite case with hinged cover and leather carrying strap.

All ranges fused for protection from overloads. Voltage ranges protected by single fuse located in a cap. Each of current ranges protected by individual fuse mounted in special compartment covered by hinged back. Ranges are brought out through selector switch to 3 binding posts, a common +, a current and a potential post. By this arrangement instrument can be so connected to circuit that both current and voltage readings can be taken by turning switch without changing connections. Line is closed at all times when connecting to ammeter binding post.

Dimensions, 3 5/16 x 4 7/8 x 2 1/2 inches; scale length, 2 1/16 inches. Approximate weight, 2 pounds.

Volts	Each	Amperes	Scale Divisions
30/3	\$50.00	15/1.5/0.15/0.03	60
30/3/1.5	50.00	30/3/0.03	60
60/30/6	50.00	6/0.6/0.03	60
150/15/1.5	50.00	15/1.5/0.15	75
150/15/3	50.00	15/1.5/0.15	60
150/15/3	50.00	15/1.5/0.3	60
150/15/3	50.00	30/3/0.3	60
150/15/3	50.00	30/15/3	60
150/30/3	50.00	30/3/0.3	60
150/30/3	50.00	30/0.6/0.06	60

Extra replacement fuses in assorted lots of one dozen, \$1.00. When ordering, give range of instrument and quantity of fuses desired for each range.

**Model 330 Weston Portable A.C.**

Accurate within 1% at 60 cycles, 2% at 25 to 100 cycles. Iron core dynamometer type. Contained in a mottled red and black bakelite case with hinged cover and leather carrying handle.



In this type of voltmeter, low ranges combined with an unusually high sensitivity are possible. For use wherever current drain caused by instrument must be limited to a low value. Although the high sensitivities of the copper oxide type of voltmeter are not possible with this meter, nevertheless its accuracy is unaffected by wave form and variations in frequencies over relatively wide limits.

A range-changing switch is incorporated for selection of ranges. To eliminate parallax errors and facilitate accurate readings, a knifedged pointer and mirror scale are used.

Dimensions, 3 15/16 x 4 7/8 x 1 13/16 inches; scale length, 2 1/16 inches. Approximate weight, 1 3/4 pounds.

For measurement of a.c. voltages below .2 volt, the use of Model 482 thermocouple instruments is recommended.

Ranges	Ohms per Volt	Scale Divisions	Each
150/15	20	75	\$55.00
10/5/1	20	50	55.00
25/5/1	20	50	55.00
*25/5/2.5	70	50	60.00
125/25/12.5	20	50	60.00
15/7.5/1.5/.75	12	75	60.00
**125/25/5/1	20	50	60.00
150/30/15/1.5	20	75	60.00
150/50/10/1	20	50	60.00

\*For measuring voltage drop across operating coil on main relay of net work protectors; for 60-cycle service.

\*\*Conforms with A.R.A. specifications.

**Weston Portable Instruments**



Model 489

For all-around checking purposes. Models 489 and 528 double range meters and Model 528 single range meters have binding posts. All triple ranges have pin jacks.

Accuracy within 2%. Approximate weight, 11 oz.

**Model 489—D.C.**

Permanent magnet moving coil type; enclosed in black bakelite case; silver etched dial, 2 3/8 inches long, with black markings. Dimensions, 3 3/32 x 3 1/4 x 1 29/32 inches.

Double Range				Triple Range			
Ranges	Each	Scale Divs.	Ohms per Volt	Ranges	Each	Scale Divs.	Ohms per Volt
150/7.5	\$13.50	75	125	750/250/10	\$28.00	75/50	1000
200/8	13.50	40	125				
200/8	22.50	40	1000				
250/50	22.50	50	1000				

Single Range				Double Range			
Range	Each	Scale Divs.	Ohms per Volt	Range	Each	Scale Divs.	Ohms per Volt
1	\$13.50	50	10/1	\$15.50	50		
10	13.50	50	15/3	15.50	75/60		
30	13.50	60	30/3	15.50	60		

Double Range				Double Range			
Ranges	Each	Resist. Ohms	Scale Divs.	Ranges	Each	Resist. Ohms	Scale Divs.
150/15	\$13.50	7/4.1	75	150/30	\$13.50	7/2.6	60

Double Range			
Ranges	Each	Res. 2	Scale Divs.
200/8 Volts, 2 Milliampere	\$21.00	15 Ohms	40
Leather Case for Model 489 Instruments	each		\$2.50

**Model 528—A.C.**

Movable iron type; mottled red and black bakelite case. Unshielded from external magnetic fields. Dimensions, 3 29/32 x 3 1/4 x 2 inches; scale length, 2 1/2 inches.

Double Range				Triple Range			
Ranges	Each	Approximate Res. Ohms	Scale Divisions	Ranges	Each	Scale Divs.	Ohms per Volt
150/15	\$13.50	7350/735	30	150/15/3	\$16.50	8700/150/30	30/30
300/150	15.50	31600/15800	30	150/8/4	16.50	10000/80/40	30/40
600/150	18.50	100000/25000	30	300/8/4	19.00	43000/80/40	30/40
600/300	18.50	100000/50000	30				

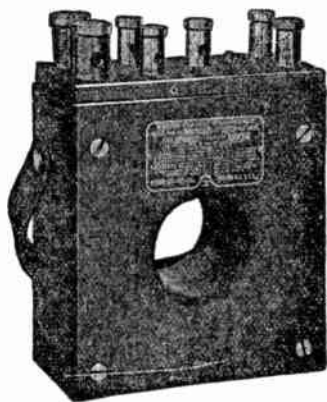
Single Range				Double Range			
Ranges	Each	Resist. Ohms	Scale Divs.	Ranges	Each	Resist. Ohms	Scale Divs.
1	\$13.50	.204	50	15/3	\$21.00		30
3	13.50	.0249	30	15/5	21.00		30/50
5	13.50	.0108	50	15/7.5	21.00		30
10	13.50	.0067	50	30/3	23.00		30
15	13.50	.003	30	30/5	23.00		30/50
20	13.50	.0025	40				
30	15.50	.0016	30				
50	15.50	.0014	50				

Single Range			
Ranges	Each	Resist. Ohms	Scale Divs.
15	\$13.50	2000	30
25	13.50	690	25
50	13.50	175	50
Leather Case for Model 528 Instruments	each		\$2.50

**Model 539 Weston Portable Current Transformers**

For use with Model 528 ammeters. Primary ranges: 2, 5, 10 and 20 amperes, self-contained primary; maximum of 200 amperes inserted primary. Weight, 2 3/8 pounds. Model 539, Size 5 1/2 x 4 1/4 x 1 7/8 Inches .....each \$28.00

**Model 461 Weston Portable Multi-Range Current Transformers**



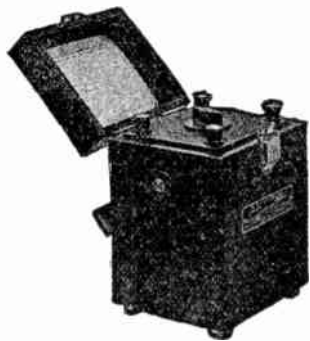
Has 4 self-contained primary ranges of 10, 20, 50 and 100 amperes to which connections are made by means of binding posts; with one turn of wire through core opening a primary range of 800 amperes results; with 2 turns, 400 amperes; with 4 turns, 200 amperes, etc. Secondary current rating at normal primary current is 5 amperes. A short-circuiting switch is provided for secondary winding to prevent damage to transformer if secondary circuit should be opened while current is on primary.

Maximum secondary burden is 5 volt-amperes. Transformer is contained in a black, moulded bakelite case.

Has a ratio accuracy sufficiently high for use with Models 155 and 433 ammeters or Models 329 and 432 wattmeters without the use of correction curves when used on frequencies of from 25 to 133 cycles per second, and with secondary burdens within limit of 5 volt-amperes. Line potentials up to 2500 volts are permissible. When ordering correction curves state model, type and serial number of instruments to be used and frequency or frequencies at which curves are to be made. If more than one curve is required with different combinations of instruments, list those combinations. State length and size of leads to be used, otherwise 10-foot leads of No. 14 B. & S. gauge (resistance .05 ohms) will be assumed.

Dimensions, 6 $\frac{5}{8}$ x7 $\frac{1}{8}$ x2 $\frac{3}{4}$  inches. Weight, 7 $\frac{1}{4}$  pounds.  
 Model 461.....each \$73.50  
 Leather Case.....each 9.00

**Model 457 Weston Portable Potential Transformers**



Designed to meet the demand for a compact, light weight portable transformer which can be conveniently transported with other measuring instruments, and yet will perform with a high degree of accuracy.

Contained in a black walnut case with hinged cover, lock and leather carrying strap.

Primary range is changed by means of a range-changing switch which enables the ratio of primary

ranges of 4 to 1 to be easily selected.

Designed for a maximum secondary burden of 25 volt-amperes at 115 volts and frequencies of from 50 to 150 cycles per second. Ratio accuracy is within one-half per cent from 0 to 25 volt-amperes secondary burden which is sufficient for use with Models 155, 433, 329 or 432 without the use of correction curves. If correction curves are desired, state model and serial numbers of instruments to be used, and frequency or frequencies at which curves are to be made. If more than one curve is required with different combinations of instruments, list combinations.

Primary to secondary tested for breakdown at 10000 volts for one minute.

Frequency per second, 50 to 150 cycles.

Dimensions, 8 $\frac{5}{16}$ x5 $\frac{3}{4}$ x5 $\frac{1}{2}$  inches. Weight 11 $\frac{1}{2}$  pounds.

Normal	Volts		Each
	3000/750 to 115	Maximum 2500/625 to 125 at 50 Cy.}	
3000/750 to 115	3000/750 to 150 at 60 Cy.}	2500/625 to 125 at 50 Cy.}	\$145.00
3000/750 to 100	3750/937.5 to 125		145.00

**Model 564 Weston Volt-Ohmmeters**



The equipment consists of a Model 301 with four 1000 ohms per volt voltage ranges of 600/300/30/3 and resistance ranges of either 0-100000 and 0-1000 ohms or 0-1000000, 0-100000 and 0-1000 ohms. A self-contained 4 $\frac{1}{2}$ -volt C battery is provided for potential. A pair of 50-inch test leads is shipped with each Model 564.

Any change in potential of the self-contained battery can be readily compensated for by short circuiting the pin-jacks X-X and adjusting the pointer to the zero ohm position by turning the voltage adjuster located at the top of the nameplate.

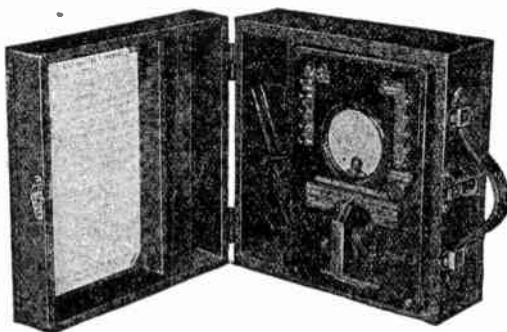
All voltage ranges are brought out to pin-jacks. A toggle switch connects the meter in circuit as a voltmeter or ohmmeter. The instrument sensitivity, when used as an ohmmeter, may be changed by a toggle switch from 1 to 100 milliamperes when using the 100000 or 1000-ohm scale; when using the 1000000-100000-1000-ohm instrument the sensitivity may be changed from .1, or 1 to 100 milliamperes. This simplifies checking up trouble in high or low resistance circuits.

Shipping weight, 6 pounds.

Model 564, 0-1000000-Ohm Instrument.....each \$35.50

Model 564, 0-100000-Ohm Instrument.....each 30.00

**Model 663 Weston Volt-Ohmmeters**



Supplies the demand for an ohmmeter capable of measuring very low and very high resistances.

This volt-ohmmeter is made possible by the use of a super-sensitive instrument requiring only 50 microamperes for full scale deflection. This instrument is connected into circuit network by means of a control switch which selects desired range of 6 available ohmmeter ranges, or as a milliammeter or voltmeter for d.c. and voltage measurements. Resistance measurements from .1 ohm to 10 meg-ohms; voltage measurements to 1000 volts and current measurements to 100 milliamperes are available.

The scale of the indicating instrument is marked 0-1000 ohms, 0-2.5-5-10 volts and milliamperes. The following ranges are available: 0-5-25-250-25000-250000 ohms center scale; 0-200-1000-10000-100000-1000000 ohms full scale; 0-2.5-10-100-250-500-1000 volts full scale, 1000 ohms per volt; 0-1-5-25-100 milliamperes full scale at 500 millivolts.

Model 663, Less Carrying Case.....each \$60.00  
 Model 663 Carrying Case.....each 5.00



**Model 614 Weston Foot-Candle Meters**



A direct reading foot-candle meter calibrated directly in terms of tungsten filament standard lamps. Responds quickly to even slight variations of light.

With this meter any user of light can analyze lighting conditions and determine the correct illumination for each particular and individual purpose.

Does not require the use of batteries, voltage or lamps; has indefinite life with permanent calibration.

The operating equipment consists of an indicating instrument, a 3-way toggle switch and a Photronic photo-electric cell all mounted on a bakelite panel. The instrument reads directly in foot-candles and has 3 ranges, 0-50, 0-250 and 0-500 which are controlled by the 3-way toggle switch. The Photronic photo-electric cell or light target is hinged so that it can be lifted from the horizontal to the vertical position.

This meter is always ready for instant use. To measure illumination on a horizontal plane it is only necessary to open cover, hold instrument in a horizontal position with the cell or light target lying in its socket and then take the readings. The toggle switch simplifies switching to any of the 3 meter ranges so as to give a good scale deflection for any value of light intensity within maximum range of instrument.

Assembled in a moulded black bakelite carrying case equipped with hinged cover and strap handle. Length of case, 7 inches; height, 3 1/2 inches; width, 2 1/4 inches.

Weight, 1.8 pounds.

Model 614.....each \$50.00

**Model 603 Weston Portable Direct Reading Illumination Meters**



To measure light intensities with this foot-candle meter it is only necessary to turn the searching unit to the light to be measured and then read its value in foot-candles directly on the 50-division uniformly divided scale.

The Photronic cell is instantaneous in its response to light variations; color response closely approximates that of the human eye.

Calibration of the scale is permanent.  
Dimensions, 8 1/4 x 8 3/4 x 4 1/2 inches. Weight, 7 pounds.

**3-Range Type**

Consists of an accurate indicating instrument mounted in a carrying case and a searching unit or light target with a 6-foot cable permanently attached to instrument.

Three ranges, 0 to 10, 0 to 50 and 0 to 250 foot-candles are selected by means of a 3-position switch.

Model 603, 3-Range Type.....each \$95.00

**6-Range Type—For Street Lighting Work**

Similar to the 3-range type. Six ranges: 0-1, 0-2.5, 0-5, 0-25, 0-100 and 0-500 foot-candles. Readings are possible to as low as .02 foot-candle on 1 foot-candle range.

A bank of 16 Photronic photo-electric cells are permanently mounted in hinged cover and act as a light target for the 3 low ranges. For these ranges it is simply necessary to slip off cover and plug the 10-foot flexible cord into socket connecting the instrument. The 3 high ranges utilize a standard 2-cell light target which plugs into the instrument in a similar manner. All ranges selected through a 6-position switch on instrument panel.

Model 603, 6-Range Type.....each \$300.00

**Weston Switchboard D.C. Instruments**

Models 24, 57 and 251



Accurate within 1%. Permanent magnet moving coil type; magnetically shielded.

Model 251 harmonizes with Models 167, 214, 215, 216, 226 and 261 instruments.

Prices cover instruments finished in dull black. Models 24 and 57 have cast iron cases; Model 251, pressed steel. Regularly supplied in surface type, back connected cases. Flush type in Models 24 and 57 can be supplied at no extra cost.

**Dimensions and Weights**

Model.....	24	57	251
Diameter at Base.....inches	7 1/4	9 9/16	9 5/8
Projection from Panel.....inches	3 1/32	4 1 3/32	4
Length of Scale.....inches	5 5/32	6 1/2	6 1/2
Approximate Weight.....pounds	9	14	11

**Ammeters**

Models 24 and 57 for 75 amperes or less supplied with self-contained shunts. External shunt type may be obtained at no extra cost. All ranges in Model 251 with external shunts.

Range	Scale Divisions	Model 24 Each	Model 57 Each	Model 251 Each
1	50	\$44.50	\$55.50	\$55.50
5	50	44.50	55.50	55.50
10	50	44.50	55.50	55.50
15	75	44.50	55.50	55.50
25	50	44.50	55.50	55.50
50	50	44.50	55.50	55.50
75	75	44.50	55.50	55.50
80	40	44.50	55.50	55.50
100	50	44.50	55.50	55.50
130	65	44.50	55.50	55.50
150	75	44.50	55.50	55.50
200	40	44.50	55.50	55.50
250	50	44.50	55.50	55.50
300	60	45.25	56.25	56.25
400	40	47.00	58.00	58.00
500	50	48.75	59.75	59.75
600	60	50.50	61.50	61.50
750	75	53.00	64.00	64.00
1000	50	59.00	70.00	70.00
1200	60	62.00	73.00	73.00
1500	75	68.00	79.00	79.00
2000	40	72.00	83.00	83.00
2500	50	81.00	92.00	92.00
3000	60	89.00	100.00	100.00

**Voltmeters**

Voltmeters have a sensitivity of approximately 80 ohms per volt. Self-contained up to 750 volts. Models 24 and 57 have normal indices operated from the outside of the case.

		Model 24	Model 57	Model 251
6	60	\$39.00	\$50.00	\$50.00
10	50	39.00	50.00	50.00
15	75	39.00	50.00	50.00
25	50	39.00	50.00	50.00
50	50	39.00	50.00	50.00
75	75	39.00	50.00	50.00
120	60	39.00	50.00	50.00
130	65	39.00	50.00	50.00
150	75	39.00	50.00	50.00
250	50	43.00	54.00	54.00
300	60	43.00	54.00	54.00
600	60	51.00	62.00	62.00
750	75	55.00	66.00	66.00

**Wattmeters, Power Factor Meters, Frequency Meters and Synchrosopes**

These instruments, representing a complete line for the conventional switchboard, are available in designs matching the voltmeters and ammeters listed above.

Prices and complete bulletins furnished on application.



## Weston Switchboard A.C. Instruments Models 151, 156 and 261



Accurate within 1%. Movable iron type; magnetically shielded. Model 261 forms a part of a complete matched line including voltmeters, ammeters, wattmeters, power factor meters, frequency meters and synchrosopes, details of which will be furnished on request.

Prices cover instruments finished in dull black. Models 151 and 156 have cast iron cases; Model 261, pressed

steel. Regularly supplied in surface type back connected cases. Flush type voltmeters in Models 151 and 156, at no extra cost. Flush type ammeters with ranges of 5 amperes or less supplied without extra charge, but for ranges above 5 amperes an extra charge of \$5.75 each will be made.

Power consumption: Voltmeters on 115 volts, 6.8 watts; on 25 or 60 cycles, 6.8 volt-amperes. Ammeters on 5 amperes, 1.1 watts; on 25 cycles, 1.1 volt-amperes; on 60 cycles, 1.4 volt-amperes.

### Dimensions and Weights

Model	151	156	261
Size at Base.....inches	9 <sup>9</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>16</sub>
Projection from Panel.....inches	3 <sup>5</sup> / <sub>32</sub>	3 <sup>7</sup> / <sub>32</sub>	4
Length of Scale.....inches	6 <sup>3</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>32</sub>	6 <sup>1</sup> / <sub>2</sub>
Approximate Weight.....pounds	10	8	9

### Ammeters

Ammeters are for use on frequencies up to 500 cycles per second.

Model 151 or 156 ammeter can be furnished with self-contained capacities up to and including 500 amperes for use on potentials to 2300 volts. Model 261 ammeter is listed in one range only. This model is employed generally with current transformers, and the price shown covers instruments for currents up to 10 amperes, with scales figured to correspond to the transformers with which employed.

Range	SCALE DIVISIONS			Model 151 Each	Model 156 Each	Model 261 Each
	Models 151 and 261	Model 156	Model 151			
1	100	50		\$46.00	\$35.00	.....
2	100	40		46.00	35.00	.....
5	50	50		*46.00	*35.00	*\$46.00
10	100	50		46.00	35.00	.....
15	75	75		50.00	39.00	.....
20	100	40		50.00	39.00	.....
25	50	25		50.00	39.00	.....
30	60	30		50.00	39.00	.....
40	40	40		52.00	41.00	.....
50	50	50		52.00	41.00	.....
75	75	75		52.00	41.00	.....
100	100	50		55.00	44.00	.....
150	75	75		58.00	47.00	.....
200	100	40		61.00	50.00	.....
250	50	25		64.00	53.00	.....
300	60	30		67.00	56.00	.....
400	40	40		75.00	64.00	.....
500	50	50		75.00	64.00	.....

\*Ranges slightly higher or lower than 5 amperes as required when maximum scale value is somewhat larger or smaller than the rated primary capacity of the current transformer, can be supplied at no extra charge.

### Voltmeters

For use on frequencies up to 133 cycles per second. Available for 500-cycle service at an extra cost of \$4.00.

With external resistors for ranges above 300 volts.

A special percentage ground indicator may be supplied for indicating grounds and their intensities on 3-phase ungrounded systems; information on application.

75	75	75	\$48.00	\$37.00	\$48.00
100	100	50	48.00	37.00	48.00
130	65	65	48.00	37.00	48.00
150	75	75	48.00	37.00	48.00
250	50	25	51.00	40.00	51.00
300	60	30	52.00	41.00	52.00
500	50	50	57.00	46.00	57.00
600	60	60	60.00	49.00	60.00
750	75	75	64.00	53.00	64.00

## Model 252 Weston Switchboard D.C. Instruments



Accurate within 1%. Permanent magnet moving coil type; magnetically shielded. Forms part of a complete matched line including voltmeters, ammeters, wattmeters, power factor meters, frequency meters and synchrosopes, details of which will be furnished upon request.

With pressed steel case, dull black finish. Surface type, back connected.

This instrument, with suitable exploring coils, can be used as an electric resistance thermometer; information on application.

Ammeters provided with external shunts. Voltmeters self-contained up to 300 volts; sensitivity, approximately 80 ohms per volt. Voltmeters may be provided with a second but lower range at \$5.50 extra.

Diameter at base, 7<sup>21</sup>/<sub>32</sub> inches; projection from panel, 4 inches; length of scale, 5<sup>5</sup>/<sub>32</sub> inches. Approx. wt., 9 lbs.

Range	Scale Divs.	Am- meters Each	Volt- meters Each	Range	Scale Divs.	Am- meters Each	Volt- meters Each
1	50	\$44.50	.....	200	40	\$44.50	.....
5	50	44.50	.....	250	50	44.50	\$43.00
6	30	.....	\$39.00	300	30	45.25	43.00
10	50	44.50	39.00	400	40	47.00	.....
15	30	44.50	39.00	500	50	48.75	.....
25	50	44.50	39.00	600	30	50.50	51.00
50	50	44.50	39.00	750	30	53.00	55.00
75	30	44.50	39.00	1000	50	59.00	.....
80	40	44.50	.....	1200	60	62.00	.....
100	50	44.50	.....	1500	30	68.00	.....
120	60	.....	39.00	2000	40	72.00	.....
130	65	44.50	39.00	2500	50	81.00	.....
150	30	44.50	39.00	3000	30	89.00	.....

## Model 260 Weston Switchboard A.C. Instruments



Accurate within 1%. Movable iron type; magnetically shielded. Surface type back connected case of pressed steel, dull black finish.

This instrument forms a part of a complete matched line, details of which will be furnished on request.

Power consumption: Voltmeters on 115 volts, 6.8 watts; on 25 or 60 cycles, 6.8 volt-amperes.

Ammeters on 5 amperes, 1.1 watts; on 25 cycles, 1.1 volt-amperes; on 60 cycles, 1.4 volt-amperes.

Size at base, 7<sup>21</sup>/<sub>32</sub> inches; projection from panel, 4<sup>1</sup>/<sub>32</sub> inches; length of scale, 5<sup>5</sup>/<sub>32</sub> inches. Weight, 8 pounds.

### Ammeters

Ammeters are for use on frequencies up to 500 cycles per second. Model 260 ammeter listed in one range only; employed generally with current transformers; price shown covers instruments for currents up to 10 amperes with scales figured to correspond to transformers with which employed.

Ranges slightly higher or lower than 5 amperes as required when maximum scale value is somewhat larger or smaller than the rated primary capacity of the current transformer, can be supplied at no extra charge.

Model 260.....each \$35.00

### Voltmeters

Voltmeters are for use on frequencies up to 133 cycles per second. For 500-cycle service, \$4.00 extra.

With external resistors for ranges above 300 volts.

Volts	Scale Divs.	Each	Volts	Scale Divs.	Each	Volts	Scale Divs.	Each
75	75	\$37.00	150	30	\$37.00	500	50	\$46.00
100	50	37.00	250	25	40.00	600	60	49.00
130	65	37.00	300	30	41.00	750	75	53.00

**Model 610 Weston Switchboard D.C. Instruments**



Accurate within 1%. Permanent magnet moving coil type; magnetically shielded. Harmonizes with all Model 610 instruments.

With pressed steel case, dull black finish. Flush type, back connected.

Model 610 instrument has 2 Mazda 6-volt (No. 40 T-3) lamps that provide indirect full scale illumination free from shadows. Lamps are operated from an independent circuit and may be conveniently replaced by removing 4 screws which hold the bakelite front.

Ammeters provided with external shunts.

Voltmeters have a sensitivity of 100 ohms and are self-contained at this sensitivity up to 300 volts; from 300 to 500 volts self-contained the sensitivity is 200 ohms per volt. Ranges from 500 to 1000 volts employ a Type 12 No. 1 resistance box at 100 ohms per volt. Voltmeters provided with a second but lower range at \$5.50 extra.

Size at base, 4x4½ inches; projection from panel, ⅞ inch; length scale, 3½ inches. Weight, 2 pounds.

Range	Scale Divs.	Ammeters Each	Voltmeters Each	Range	Scale Divs.	Ammeters Each	Voltmeters Each
1	50	\$44.50	.....	200	40	\$44.50	.....
5	50	44.50	.....	250	50	44.50	\$43.00
6	30	.....	\$39.00	300	30	45.25	43.00
10	50	44.50	39.00	400	40	47.00	.....
15	30	44.50	39.00	500	50	48.75	.....
25	50	44.50	39.00	600	30	50.50	51.00
50	50	44.50	39.00	750	30	53.00	55.00
75	30	44.50	39.00	1000	50	59.00	.....
80	40	44.50	.....	1200	60	62.00	.....
100	50	44.50	.....	1500	30	68.00	.....
120	60	.....	39.00	2000	40	72.00	.....
130	65	44.50	39.00	2500	50	81.00	.....
150	30	44.50	39.00	3000	30	89.00	.....

**Model 610 Weston Switchboard A.C. Instruments**



Accurate within 1%. Movable iron type; magnetically shielded. Flush type back connected case of pressed steel, dull black finish. Has moulded bakelite front.

With 2 Mazda 6-volt (No. 40 T-3) lamps that provide indirect full scale illumination free from shadows. The lamps are operated from an independent circuit and may be conveniently replaced by removing 4 screws which hold bakelite front.

Power consumption: Voltmeters on 115 volts, 3. watts; on 25 or 60 cycles, 3. volt-amperes. Ammeters on 5 amperes, 1.1 watts; on 25 cycles, 1.1 volt-amperes; on 60 cycles, 1.4 volt-amperes.

Size at base, 4x4½ inches; projection from panel, ⅞-inch; length scale, 3½ inches. Weight, 2 pounds.

**Ammeters**

Ammeters are for use on frequencies up to 500 cycles per second. Listed in one range only; employed generally with current transformers; price shown covers instruments for currents up to 10 amperes with scales figured to correspond to transformers with which employed.

Ranges slightly higher or lower than 5 amperes as required when maximum scale value is somewhat larger or smaller than the rated primary capacity of the current transformer, can be supplied at no extra charge.

Model 610.....each \$35.00

**Voltmeters**

Voltmeters are for use on frequencies up to 133 cycles per second. For 500-cycle service, \$4.00 extra. With external resistors for ranges above 300 volts. For ranges between 300 and 750 volts a Type 12 No. 1 resistance box mounted on studs at rear of instrument, is provided.

Volts	Scale Divs.	Each	Volts	Scale Divs.	Each	Volts	Scale Divs.	Each
75	75	\$37.00	150	30	\$37.00	500	50	\$46.00
100	50	37.00	250	25	40.00	600	60	49.00
130	65	37.00	300	30	41.00	750	75	53.00

**Model 502 Weston Switchboard D.C. Instruments**



Accurate within 1%. Permanent magnet moving coil type; magnetically shielded. Harmonizes with Models 496, 497, 498, 499, 500 and 501 instruments.

With pressed steel case, dull black finish. Surface type, back connected cases. Flush type model can be supplied at \$1.00 extra.

This instrument, with suitable exploring coils, can be used as an electric resistance thermometer; information on application.

Ammeters are provided with external shunts. Voltmeters have a sensitivity of approximately 100 ohms per volt and are self-contained up to 750 volts. Voltmeters may be provided with a second but lower range at an additional cost of \$5.50.

Size at base, 5¾x6 inches; projection from panel, 4½ inches; length scale, 5½ inches. Weight, 8 pounds.

Range	Scale Divs.	Ammeters Each	Voltmeters Each	Range	Scale Divs.	Ammeters Each	Voltmeters Each
1	50	\$44.50	.....	200	40	\$44.50	.....
5	50	44.50	.....	250	50	44.50	\$43.00
6	30	.....	\$39.00	300	30	45.25	43.00
10	50	44.50	39.00	400	40	47.00	.....
15	30	44.50	39.00	500	50	48.75	.....
25	50	44.50	39.00	600	30	50.50	51.00
50	50	44.50	39.00	750	30	53.00	55.00
75	30	44.50	39.00	1000	50	59.00	.....
80	40	44.50	.....	1200	60	62.00	.....
100	50	44.50	.....	1500	30	68.00	.....
120	60	.....	39.00	2000	40	72.00	.....
130	65	44.50	39.00	2500	50	81.00	.....
150	30	44.50	39.00	3000	30	89.00	.....

**Model 496 Weston Switchboard A.C. Instruments**



Accurate within 1%. Movable iron type; magnetically shielded. Surface type back connected case of pressed steel, dull black finish. For flush type instrument, add \$4.00.

Power consumption: Voltmeters on 115 volts, 6.8 watts; on 25 or 60 cycles, 6.8 volt-amperes. Ammeters on 5 amperes, 1.1 watts; on 25 cycles, 1.1 volt-amperes; on 60 cycles, 1.4 volt-amperes.

Size at base, 5¾x6 inches; projection from panel, 4½ inches; length of scale, 5½ inches. Weight, 6 pounds.

**Ammeters**

Ammeters are for use on frequencies up to 500 cycles per second. Listed in one range only; employed generally with current transformers; price shown covers instrument for currents up to 10 amperes with scales figured to correspond to transformers with which employed.

Ranges slightly higher or lower than 5 amperes as required when maximum scale value is somewhat larger or smaller than the rated primary capacity of the current transformer, can be supplied at no extra charge.

Model 496.....each \$35.00

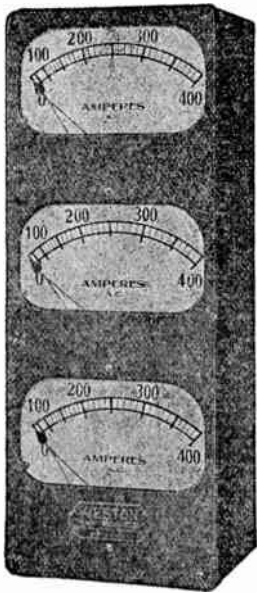
**Voltmeters**

Voltmeters are for use on frequencies up to 133 cycles per second. For 500-cycle service, \$4.00 extra. Model 496 requires an external resistor for all ranges. For ranges up to 300 volts, resistor is mounted on studs at rear of instrument; for ranges between 300 and 750 volts a Type 3 No. 2 box is employed; for ranges above 750 volts, the use of a potential transformer is recommended.

Volts	Scale Divs.	Each	Volts	Scale Divs.	Each	Volts	Scale Divs.	Each
75	75	\$37.00	150	30	\$37.00	500	50	\$46.00
100	50	37.00	250	25	40.00	600	60	49.00
130	65	37.00	300	30	41.00	750	75	53.00



## Model 501 Weston Switchboard A.C. Ammeters



For use on frequencies up to 500 cycles per second. Listed in one range only; employed generally with current transformers, and price shown covers instrument for currents up to 10 amperes with scales figured to correspond to transformers with which employed.

Triplex instruments supplied in any combination of 3 rectangular a.c. or d.c. switchboard instruments; prices on application.

Accurate within 1%. Movable iron type; magnetically shielded. Surface type back connected case of pressed steel, dull black finish.

Power consumption: Voltmeters at 115 volts, 6.8 watts; on 25 or 60 cycles, 6.8 volt-amperes. Ammeters on 5 amperes, 1.1 watts; on 25 cycles, 1.1 volt-amperes; on 60 cycles, 1.4 volt-amperes.

Ranges slightly higher or lower than 5 amperes as required when maximum scale value is somewhat larger or smaller than rated

primary capacity of current transformer, can be supplied at no extra charge.

Size at base, 5 3/4 x 1 5/2 inches; projection from panel, 4 1/4 inches; length of scale, 5 1/8 inches. Weight, 17 pounds. Model 501 .....each \$100.00

## Model 600 Weston Small Panel Microammeters



Permanent magnet moving coil type. Regularly furnished in flush type bakelite case; also available with flush type metal case.

Scales are hand calibrated and basically have an accuracy of 2% except in rectifier type where percentage accuracy is about 5% due to inherent properties of rectifier.

Rectifier instruments can be made with a high sensitivity, and for many laboratory and field measurements, voltmeters with a resistance of as high as 10000 ohms per volt can be had. Such instruments can be used for power level measurements against high resistance loads and for any other position where extremely small energy drain is required. Similarly, d.c. instruments may be supplied in this model with sensitivities as high as 30000 ohms per volt.

Case Material	Bakelite	Metal
Flange Diameter	3 1/2 inches	3 3/4 inches
Body Diameter	2 13/16 inches	2 9/16 inches
Body Depth	1 3/4 inches	1 3/4 inches
Length of Scale	2 3/8 inches	2 3/8 inches
Approximate Weight	1 pounds	1 pounds

### D.C. Microammeters

Range	Each	Resist. Ohms	Scale Divs.	Range	Each	Resist. Ohms	Scale Divs.
30	\$26.00	2000	60	200	\$14.25	65	40
50	23.50	2000	50	300	14.25	55	60
75	23.50	1750	75	500	14.25	30	50
100	21.00	1300	50				

### Rectifier Type A.C. Microammeters

*100	\$26.00	3700	50	250	\$19.25	2300	50
200	19.25	2500	40				

\*Despite its low range, this instrument is subject to a temperature error of but 1% per degree Centigrade.

## Weston Switchboard D.C. Instruments Models 267, 269, 271 and 273 Fan-Shaped Ammeters, Milliammeters and Voltmeters



Permanent magnet moving coil type; magnetically shielded.

In surface type pressed steel cases with back connections, dull black finish, at prices shown. Model 269, with bakelite case at a surcharge of \$3.50 above regular price. When a bakelite case is used, instrument is not shielded.

### Dimensions and Weights

Model	267	269	271	273
Width	4 3/32 in.	5 5/8 in.	7 7/8 in.	9 5/16 in.
Height	3 3/8 in.	4 7/16 in.	6 1/4 in.	7 13/32 in.
Projection from Panel	1 3/32 in.	1 13/32 in.	1 3/4 in.	2 1/16 in.
Length of Scale	2 1/2 in.	4 in.	6 in.	7 1/32 in.
Approximate Weight	1 lbs.	1 1/2 lbs.	4 lbs.	5 lbs.

### Ammeters

Amperes	SCALE DIVISIONS				Model 267 Each	Model 269 Each	Model 271 Each	Model 273 Each
	Models 267-269-271	Model 273						
1	50	100			\$21.75	\$27.00	\$38.50	\$49.50
1.5	75	75			21.75	27.00	38.50	49.50
2	40	100			21.75	27.00	38.50	49.50
3	60	60			21.75	27.00	38.50	49.50
5	50	50			21.75	27.00	38.50	49.50
10	50	100			21.75	27.00	38.50	49.50
15	75	75			21.75	27.00	38.50	49.50
20	40	100			21.75	27.00	38.50	49.50
25	50	50			21.75	27.00	38.50	49.50
30	60	60			21.75	27.00	38.50	49.50
50	50	50			27.25	27.00	38.50	49.50
75	75	75			27.25	32.50	38.50	49.50
100	50	100			27.25	32.50	38.50	49.50
150	75	75			27.25	32.50	38.50	49.50
200	40	100			27.25	32.50	38.50	49.50
300	60	60			28.00	33.25	39.25	50.25
400	40	40			29.75	35.00	41.00	52.00
500	50	50			31.50	36.75	42.75	53.75
750	75	75			35.75	40.75	47.00	58.00
1000	50	100			41.75	45.75	53.00	64.00
1500	75	75			50.75	54.75	62.00	73.00
2000	40	100			54.75	58.75	66.00	77.00
3000	60	60			70.75	75.75	83.00	94.00

Models 267 and 269 have self-contained shunts up to and including 30 and 50 amperes respectively—above these ranges, with external 100 MV. shunts. Models 271 and 273 with external 50 MV. shunts. Prices include shunts.

### Milliammeters

Milliamperes						
1	50	100	\$22.75	\$29.00	\$34.00	\$45.00
1.5	75	75	22.75	29.00	34.00	45.00
3	60	60	22.75	29.00	34.00	45.00
5	50	50	21.75	28.00	33.00	44.00
10	50	100	21.75	28.00	33.00	44.00
15	75	75	21.75	28.00	33.00	44.00
20	40	100	21.75	28.00	33.00	44.00
25	50	50	21.75	28.00	33.00	44.00
50	50	50	21.75	28.00	33.00	44.00
75	75	75	21.75	28.00	33.00	44.00
100	50	100	21.75	28.00	33.00	44.00
150	75	75	21.75	28.00	33.00	44.00
200	40	100	21.75	28.00	33.00	44.00
250	50	50	21.75	28.00	33.00	44.00
300	60	60	21.75	28.00	33.00	44.00
500	50	50	21.75	28.00	33.00	44.00

Model 267 ranges above 50 milliamperes are shunted and have a drop of approximately 100 millivolts; Model 269 above 25 milliamperes, 100 millivolts; Model 271 above 25 milliamperes, 50 millivolts; Model 273 above 20 milliamperes, 50 millivolts.

### Voltmeters

Volts						
3	60	60	\$21.75	\$28.00	\$33.00	\$44.00
8	40	80	21.75	28.00	33.00	44.00
10	50	100	21.75	28.00	33.00	44.00
15	75	75	21.75	28.00	33.00	44.00
20	40	100	21.75	28.00	33.00	44.00
25	50	50	21.75	28.00	33.00	44.00
30	60	60	21.75	28.00	33.00	44.00
50	50	50	21.75	28.00	33.00	44.00
75	75	75	21.75	28.00	33.00	44.00
100	50	100	21.75	28.00	33.00	44.00
130	65	65	21.75	28.00	33.00	44.00
150	75	75	21.75	28.00	33.00	44.00
200	40	100	*23.50	29.75	34.75	45.75
250	50	50	*25.00	31.25	36.00	47.00
300	60	60	*27.00	33.25	37.00	48.00
600	60	60	*31.50	*37.75	*45.00	*56.00

Approximate resistance in ohms per volt: Model 267, 60; Model 269, 75; Model 271, 100; Model 273, 100.

\*Supplied with external resistor. Millivoltmeters are also available in the fan-shaped instruments. Prices upon application.



**Model 301 Weston 3/4-Inch Panel Instruments**



**D.C. Model**  
Permanent moving coil type. Accurate within 2%.

**A.C. Model—Rectifier Type**  
High sensitivity a.c. instruments obtained by using a full-wave copper oxide rectifier with a d.c. movement. Excellent damping, even scale characteristics and high overload capacity. Accurate within 5%.

**D.C. Voltmeters**

Approx. Resistance in Ohms per Volt: 1 to 40 V., 62; 50 to 150 V., 200; 200 V., 250; 250 V., 300; 300-500 V., 666; 600 to 2000 V., 66; Above 2000 V., 100

Range	Each	Divs.	Range	Each	Divs.	Range	Each	Divs.
3	\$9.00	60	30	\$9.00	60	500	\$19.50	50
5	9.00	50	50	9.00	50	1000*	28.50	50
8	9.00	40	100	10.00	50	1500*	36.50	75
10	9.00	50	150	11.25	75	2000*	45.00	40
15	9.00	75	200	13.00	40	3000*	61.00	60
20	9.00	40	300	16.50	60			

\*Supplied with external resistor.

**Resistance, 1000 Ohms per Volt**

Range	Each	Divs.	Range	Each	Divs.	Range	Each	Divs.
50	\$12.00	50	500	\$17.25	50	500/100**	\$15.75	50
100	12.50	50	1000	21.00	50	750/250/10**	17.50	75-50
200	14.00	40	200/8**	15.00	50	750/250/100	22.50	75-50
300	15.00	60	250/50**	15.00	50	50/10/5		

\*\*Self-contained for low range. External box for other ranges. \*\*\*Spool Resistors supplied for all but low range.

**D.C. Ammeters**

Self-contained up to 50 amperes inclusive—drop 50 MV ± 5%.

Range	Each	Divs.	Range	Each	Divs.	Range	Each	Divs.
1	\$9.00	50	10	\$9.00	50	2-0-2	\$9.00	40
1.5	9.00	75	15	9.00	75	5-0-5	9.00	50
2	9.00	40	20	9.00	40	10-0-10	9.00	40
3	9.00	60	30	9.00	60	20-0-20	9.00	40
5	9.00	50	50	9.00	50			

**D.C. Milliammeters**

Milliammeters above 30 MA are shunted—drop approximately 100 MV.

Range	Each	Divs.	Range	Each	Divs.	Range	Each	Divs.
1	\$10.00	50	15	\$9.00	75	200	\$9.00	40
1.5	10.00	75	20	9.00	40	300	9.00	60
2	10.00	40	30	9.00	60	500	9.00	50
3	10.00	60	50	9.00	50	150/15†	14.00	75
5	9.00	50	100	9.00	50	150/30†	14.00	60
10	9.00	50	150	9.00	75			

†Double range milliammeters are 3 binding post type, self-contained.

**D.C. Microammeters**

200 \$14.25 40 500 \$14.25 50  
Adjusted for use in horizontal or 45° position.

**Ohmmeters**

These ohmmeters are independent of battery voltage.

Ohm Scale	Each	Battery Voltage	Rheostat	Ohm Scale	Each	Battery Voltage	Rheostat
0-1000	\$10.50	1.5	100	0-500000	\$13.50	15	400
0-10000	10.50	4.5	250	0-2000000	15.00	90	400
0-100000	13.50	4.5	400				

**Rectifier Type Voltmeters**

Volts	Scale Divs.	1000 Ohms per Volt		Volts	Scale Divs.	1000 Ohms per Volt	
		Each	Divs.			Each	Divs.
1	50			50	50	\$17.00	\$19.75
1.5	75			100	50	17.50	21.50
3	60	\$17.00	19.25	150	75	19.00	23.00
5	50	17.00	19.25	300	60	20.00	
15	75	17.00	19.25				

‡Should be used in horizontal or 45° position.

**Rectifier Type Milliammeters**

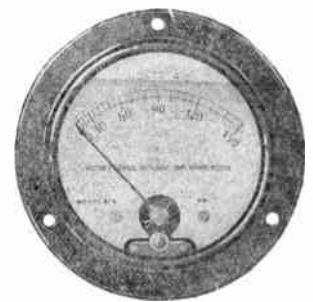
Milliamperes	Scale Divs.	Each	0.5	1	2	5
500			50	50	40	50
Each			\$19.25	15.00	15.00	14.00

**A.C. Microammeters**

Use in horizontal or 45° positions.  
500 Microamperes, 50 Scale Divs. each \$19.30

Bakelite cases should be specified for ammeters and milliammeters when used on circuits above 300 volts when it is not possible to connect instrument in grounded side of line. Bakelite case supplied at no additional cost.

**Weston 3/4-Inch Panel Instruments**



Model 425

Model 425

Model 476

Thermocouple type for a.c. including radio frequencies. Accurate within 2%.

Bakelite cases should be specified for ammeters and milliammeters when used on circuits above 300 volts when it is not possible to connect instrument in grounded side of line. Bakelite case supplied at no additional cost.

**Thermocouple Type Ammeters**

Power consumption, 1 to 4 amperes inclusive, varies from .2 to .4 watt per amperes approximately; 5 amperes and above, .15 watt per ampere.

Amps.	Each	Amps.	Each	Amps.	Each	Amps.	Each
1	\$16.00	2	\$16.00	5	\$16.00	15	\$16.00
1.5	16.00	3	16.00	10	16.00	20	16.00

**Thermocouple Milliammeters**

Milli-Amps.	Each	Approx. Resist. Ohms	Milli-Amps.	Each	Approx. Resist. Ohms	Milli-Amps.	Each	Approx. Resist. Ohms
10*	\$50.00	100	50*	\$50.00	5	150		
20*	50.00	26.5	100		250	\$18.00	1.8	
25			120**	18.00	5.2	500	18.00	1.3

\*Vacuum couple type. \*\*For horizontal or not more than 45° mounting—all others for vertical mounting.

**Galvanometer**

Accurate within 2 scale divisions. For horizontal or 45° mounting.

115 Milliampere, 5.2 Ohms. each \$18.00

**Model 476**

Movable iron type for a.c. only. Accurate within 2%.

**A.C. Voltmeters**

Volts	Each	Approx. Ohms Per Volt	Volts	Each	Approx. Ohms Per Volt
1.5	\$9.00	3	250	\$14.50	167
3	9.00	6	300	16.50	167
5	9.00	10	500	19.50	167
8	9.00	10.5	750***	23.50	167
10	9.00	14	1000***	28.00	167
15	9.00	14	150/8/4†	16.00	67/10/10
20	9.00	26.3	150/15/3†	16.00	67/10/10
30	9.00	26.3	300/8/4†	18.00	143/10/10
50	9.00	52	750/150/16/8/4‡	21.00	67/67/10/10/10
100	9.00	105	1000/200/16/8/4§	25.00	50/50/10/10/10
150	11.25	105			

\*\*\*Supplied with external multiplier box.

†Self-contained, four binding post instrument.

‡Four binding post instrument self-contained, for 150/8/4 volts.

§External spool resistors for 750/16 volt ranges.

¶Three binding post instrument self-contained for 100/4 volts.

External spool resistors (7) for 1000/200/16/8 volts.

**A.C. Ammeters**

Amps.	Each	Approx. Total Resist.	Amps.	Each	Approx. Total Resist.	Amps.	Each	Approx. Total Resist.
1	\$9.00	.2030	5	\$9.00	.010	30	\$9.00	.00070
1.5	9.00	.082	10	9.00	.0058	50	9.00	.00057
2	9.00	.05	15	9.00	.00219			
3	9.00	.024	20	9.00	.00162			

**A.C. Milliammeters**

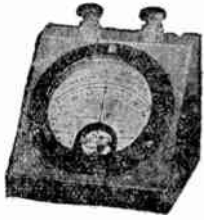
Milli-Amps.	Each	Approx. Total Resist.	Milli-Amps.	Each	Approx. Total Resist.	Milli-Amps.	Each	Approx. Total Resist.
15	\$9.00	2000	50	\$9.00	175	250	\$9.00	4.7
25	9.00	690	100	9.00	28	500	9.00	1.1

**Condenser Meter**

Reads capacity in microfarads. Movable iron type; accurate within 3% when used on voltage for which they are adjusted. Supplied with an external box.

15-1.5 Microfarads, 30 Divs. each \$29.00

## Model 375 Weston Student Galvanometers



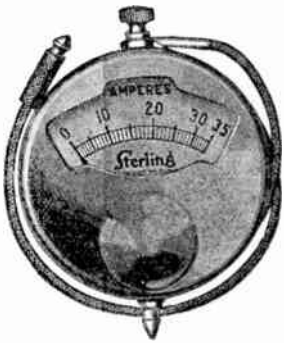
For student use in school laboratories and wherever a d.c. galvanometer of extreme sensitivity is not essential. Permanent magnet moving coil type.

Has a sensitivity of approximately 22 microamperes per division; resistance, about 23 ohms. Scale is zero-center with 60 divisions; calibrated 30-0-30 in millimeter divisions. As a galvanometer for portable use, instrument is mounted in 45° angle base; also without base for mounting in apparatus or on panels.

Dimensions: With mounting base, 3 3/4 x 3 3/4 x 3 17/32 inches; without mounting base—case, 3 1/4 inches; body, 2 3/8 inches. Scale length, 2 3/8 inches.

Model 375, with Mounting Base, Weight 12 Oz. .each \$13.00  
 Model 375, without Mounting Base, Wt. 8 Oz. .each 10.00

## No. 24 Sterling Pocket Ammeters



This pocket ammeter is universally used for testing dry cells. It has 0-35 ampere scale, 1-ampere divisions.

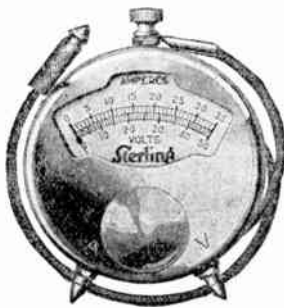
This is a durable instrument, having correct scale calibration and a clearly marked dial.

Full nickel finish.

Packed in individual boxes and supplied in a standard package containing 10 boxes. Shipping weight, 3 pounds.

No. 24. . . . .each \$1.00

## Sterling Pocket Voltammeters



Packed 1 in a box, 10 boxes in standard package. Shipping weight, 3 pounds.

### No. 44

Tests amperage of dry cell A batteries and voltage of both dry cell and storage A batteries; 0-35 amp. scale, 1-amp. divisions; 0-10 volt scale, 1/5-volt divisions.

No. 44. . . . .each \$1.50

### No. 45

Tests amperage of dry cell A batteries and voltage of either dry or storage B batteries up to 50 volts; 0-35 ampere scale, 1-ampere divisions; 0-50 volt scale, 1-volt divisions.

No. 45. . . . .each \$3.00

## Square D Voltage Testers



This voltage tester does not require lamps and operates on a.c. or d.c., indicating the voltage of either type. There is no danger of breaking and it will withstand hard usage.

Simple to operate. Place one wire in each side of the circuit and the indicator shows what the voltage is. Sharp metal points on end of long rubber-covered leads permits piercing insulation without damaging it. Fibre handles insulate the lead wires.

Can be carried in pocket.

Cat. No. 5000, Maximum Voltage, 600 D.C. . . . .each \$10.20  
 Cat. No. 5002, Voltage Tester Case. . . . .each 1.00

## Test-O-Lites

The Test-O-Lite contains two electrodes in a Neon gas filled bulb, each of which is connected in series with a suitable protecting resistor.

It will indicate voltage—a dim glow is shown when testing 110 volts, and on higher voltages up to 550 volts the glow is brighter in proportion.

Indicates whether a.c. or d.c. If a.c. both electrodes will glow, and if d.c. only one will glow and at the same time indicate the negative pole of the circuit.

Detects the live and ground wires. One can test whether a conductor has tension against ground or not by touching one of the leads with the hand.

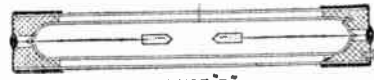
Tests resistance leaks. Can be used as a pilot light if connected permanently to any circuit.

Furnished in a bakelite casing. Is no bigger than a fountain pen.

Test-O-Lite. . . . .each \$1.50



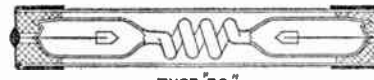
## Brach Fixed Neon High Voltage Indicators



TYPE "R"



TYPE "RC"



TYPE "RS"

Consists of a sensitive Neon tube enclosed in a glass protecting case with metal ferrules on each end connected to electrodes of the tube.

Designed for permanent installation. With sufficiently high voltage indicator will give an indication if only one end is attached to line.

Greater brilliance is obtained if a plate or other metal is attached to free end giving greater capacity to electrodes.

Wherever practical the indicator may be placed directly across a high voltage line, provided sufficient resistance is placed in series with tube to limit current to only a few milliamps. Another type of indicator has been developed recently for use across a line (or from line to ground) with a suitable resistance in series.

Also furnished when specified, at \$1.00 extra, with metal strap arranged to act as condenser plate and support one end of tube.

**Type R.**—Neon tube is a straight tube with electrodes about 3/4-inch apart. Will give an indication on 500 volts.

Type R. . . . .each \$2.50

**Type RC.**—Neon tube is straight but has a constriction between electrodes. Will give an indication on 500 volts.

Type RC. . . . .each \$2.80

**Type RS.**—Neon tube is of small bore tubing wound into a spiral. This type gives more illumination than Types R and RC when voltage is sufficiently high to operate same. Requires about 3000 volts for an indication.

Type RS. . . . .each \$3.70

## Brach Safe-T-Glow High Tension Detectors



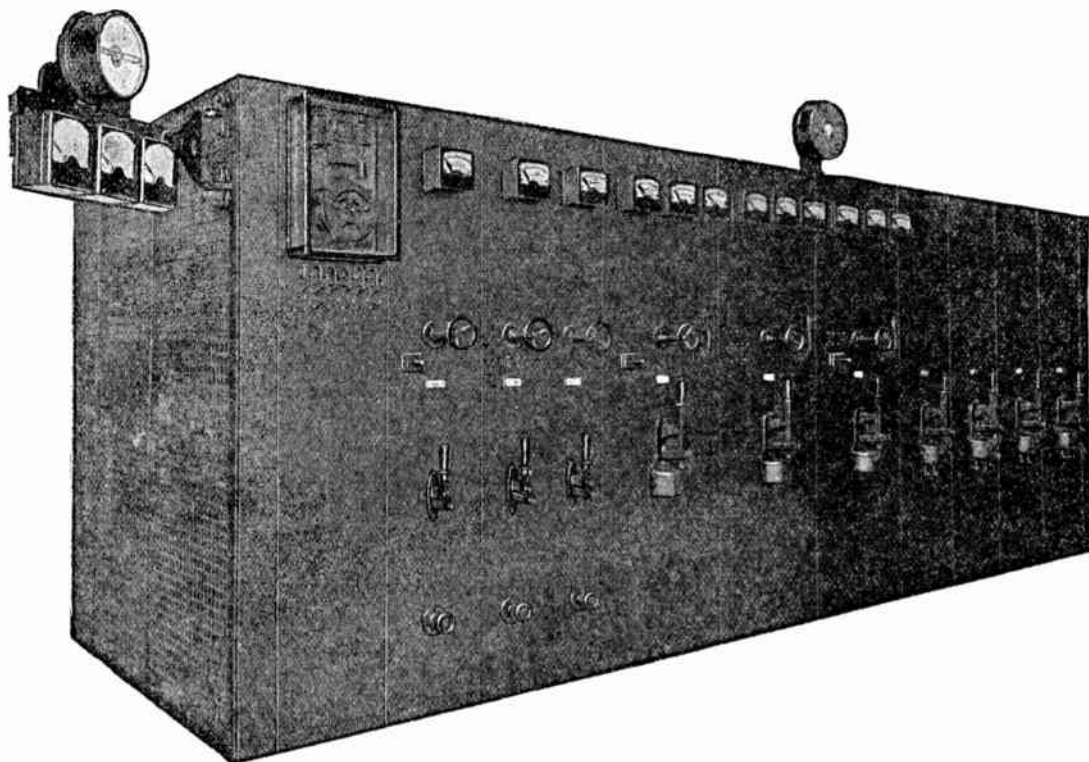
Safe-T-Glow consists of a sensitive Neon tube mounted on cushion supports, the light of this tube being amplified by a mirror reflector. It is sensitive to the presence of high tension current and will start to glow at 2000 volts when exposed terminal is held in contact with high tension wire. With increased voltage the tube will glow at varying distances away from the wire, depending on the voltage.

Model A, with 3-Foot Handle for Circuits 2000 to 35000 Volts. . . . .each . . . . .

Model B, Same as Model A except with 6-Foot Added Extension to 3-Foot Handle for Circuits from 45000 to 220000 Volts. . . . .each . . . . .

# SWITCHBOARDS

FOR GENERAL POWER AND LIGHTING SERVICE



2300-VOLT 3-PHASE GENERATING STATION SWITCHBOARD

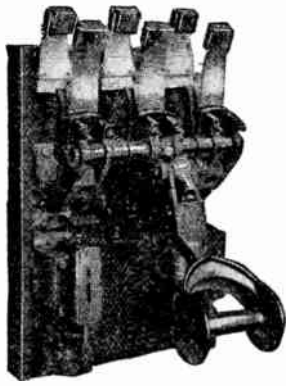
Whenever you are interested in the purchase of any type of switchboard, either for light or power, or both, let us submit figures on our product.

We feel that this catalogue will be in the hands of persons familiar with the electrical line generally and therefore that you are competent to make up a layout of practically any board you may wish a figure on.

With this in mind, we are soliciting your inquiries, asking that you give us detailed information when you submit your drawing.



## G-E Type CP-108 Trip-Free Air Circuit Breakers Manually-Operated



Particularly applicable to installations where reliable circuit protection and service with minimum maintenance are of importance.

A complete line of breakers up to and including 1600 amperes and 650 volts a.c. or d.c. These breakers have high interrupting ratings, are simple, compact and sturdy in construction, attractive in appearance, and all parts are fully accessible.

Accessories, including under-voltage device, shunt trip, and auxiliary switch, can be attached to breaker without affecting its calibration or interfering with normal operation.

**Triple-Pole, 250-Volt, 400-Amp. A.C. Breaker with 2 Over-Current Inverse-Time Devices**

Amps.	Cali- bration	Single-Pole 1 Coil		Double-Pole 1 Coil				Triple-Pole 2 Coils			
		Ship. Wt. Lbs.	Net Each	Ship. Wt. Lbs.	Net Each	Ship. Wt. Lbs.	Net Each	Ship. Wt. Lbs.	Net Each	Ship. Wt. Lbs.	Net Each
15	15-30	100	\$135	165	\$184	175	\$253	200	\$290		
30	30-60	100	135	165	184	175	253	200	290		
60	60-120	100	135	165	184	175	253	200	290		
100	100-200	100	135	165	184	175	253	200	290		
200	200-400	100	135	165	184	175	253	200	290		
400	400-600	100	137	165	186	175	255	200	294		
600	600-1200	125	145	210	202	225	271	260	325		
800	800-1600	130	157	215	227	235	296	270	362		
1200	1200-2400	120	184	200	282	215	351	250	444		
1600	1600-3200	130	264	210	434	225	510	260	660		

Amps.	Cali- bration	Triple-Pole 3 Coils		2 Coils		3 Coils		4 Coils	
		Ship. Wt. Lbs.	Net Each	Ship. Wt. Lbs.	Net Each	Ship. Wt. Lbs.	Net Each	Ship. Wt. Lbs.	Net Each
15	15-30	210	\$359	265	\$349	275	\$418	285	\$487
30	30-60	210	359	265	349	275	418	285	487
60	60-120	210	359	265	349	275	418	285	487
100	100-200	210	359	265	349	275	418	285	487
200	200-400	210	359	265	349	275	418	285	487
400	400-800	210	363	265	355	275	424	285	493
600	600-1200	275	394	340	387	368	456	375	525
800	800-1600	290	431	360	436	375	505	395	574
1200	1200-2400	265	513	335	545	345	615	355	684
1600	1600-3200	275	735	345	845	355	920	365	1000

The above prices include time delay breakers mounted on a permanent base of the size given in dimension table.

Breakers listed above are rated 650 volts a.c. or d.c., in single and double-pole units, and 250 volts a.c. or d.c., in triple or 4-pole units. For 251 to 650 volts a.c. or d.c., see additions below.

### Permanent Base Dimensions

Description	Amperes	Height Inches	Width Inches	Thickness Inches
Single-Pole	15-800	24	8	1 1/2
Double and Triple-Pole	15-800	24	16	1 1/2
Double and Triple-Pole	1200	24	20	1 1/2
Double and Triple-Pole	1600	24	20	1 1/2
4-Pole	15-400	24	24	1 1/2
4-Pole	600-1600	24	28	1 1/2

### Additions

For triple or 4-pole breakers at 251 to 650 volts a.c. or d.c., add barriers at \$6.90 per breaker.

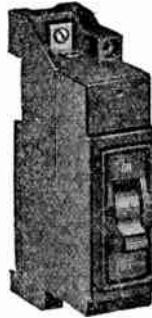
If bases larger than standard shown in dimension table are required add for extra ebony asbestos compound only \$2.00 per square foot for 1 1/2 or 2 inches thick and \$2.60 per square foot for 2 1/2 inches thick.

For dead-front operation of double or triple-pole breakers, add for steel cover plate, position indicator, extended handle, trip button and barriers, 15-1600 amperes, \$76.00.

### Deductions

To make breakers instantaneous trip omit time delay device at \$33.00 per coil for 15-1200 amperes and \$40.00 per coil for 1600 amperes. To make breakers non-automatic omit overload trip at \$69.00 per coil for 15-1200 amperes and \$76.00 per coil for 1600 amperes.

## G-E Type AF-1 Air Circuit Breakers



Single-Pole



Triple-Pole

The Type AF-1 breakers are for switchboard or panel-board service in the following ratings: 125 volts a.c. or d.c., 15-50 amperes; 250 volts a.c. or 250/125 volts d.c., 15-50 amperes; 250 volts a.c. or d.c., 51-100 amperes; 600 volts a.c. or 250 volts d.c., 100-225 amperes; 600 volts a.c. or 250 volts d.c., 226-400 amperes; 600 volts a.c. or 250 volts d.c., 401-600 amperes. Breakers of the 50-ampere frame capacity have an interrupting rating of 5000 amperes. All breakers above the 50-ampere frame capacity have an interrupting rating of 10000 amperes.

They are made single, double and triple pole for the 50-ampere frame size and double and triple pole for all other sizes. The breakers are quick-make, quick-break and trip-free. Breakers having an interrupting rating of 5000 amperes are equipped with time delay thermal trips only. Breakers having an interrupting rating of 10000 amperes are equipped with both instantaneous magnetic trip (for short circuits) and thermal time delay trip (for overload).

Silver alloy, self-aligning, non-welding pressure contacts, which produce a firm positive contact operating at low temperature, are standard on these breakers.

### Front Connected Only For Lighting and Power Distribution Panelboards Load Center and Meter Service

Amps.	125 Volts A.C.-D.C. Sgl.-Pole		230 Volts A.C. 125/250 Volts D.C. Dbl.-Pole		Triple-Pole		600 Volts A.C. 250 Volts D.C. Dbl.-Pole		Triple-Pole	
	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each
15-25	1.5	\$4.75	3	\$10.00	4	\$16.00	On application			
35-50	1.5	5.40	3	10.75	4	17.00	On application			

Amps.	230 Volts A.C. 125/250 Volts D.C. Double-Pole		Triple-Pole		Double-Pole		Triple-Pole	
	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each
50	12	\$32.00	15	\$42.00	15			On application
70	12	33.00	15	44.00	15			On application
90	12	35.00	15	46.00	15			On application
100	12	36.00	15	48.00	15			On application

Amps.	225-Ampere Frame		600-Ampere Frame	
	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each
50-100	35	\$81.00	40	\$101.00
125	35	83.00	40	104.00
150	35	85.00	40	106.00
175	35	86.00	40	108.00
200	35	88.00	40	111.00
225	35	90.00	40	113.00

Amps.	225-Ampere Frame		600-Ampere Frame	
	Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each
225	50	\$221.00	60	\$262.00
250	50	231.00	60	274.00
325	50	240.00	60	286.00
400	50	250.00	60	298.00
450	50	259.00	60	310.00
500	50	269.00	60	321.00
550	50	278.00	60	333.00
600	50	288.00	60	345.00

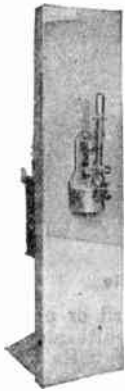
The above breakers can be made back connected for switchboard application by adding studs as follows:

Amperes	50	100	225	400	600	
Studs	each	\$ .35	.50	1.20	4.50	5.35

Price covers one stud only and must be multiplied by number required for each breaker.

**G-E Type FK-33 Oil Circuit Breakers**

\*5000 Volts



These breakers are of the single-tank type, i.e., all poles in one tank, of cast and punched steel construction and operated by the universal Type HA-2 lever.

Furnished for manual and solenoid operation.

Breakers are furnished with stud and cable terminals. For bar connections, the cable terminals are omitted and connection bars are bolted to the stud terminals.

Cable terminals have cable holes as follows: 200 amperes, .625 inch in diameter; 400 amperes, .881 inch in diameter.

Illustration shows front view of Type P-5 self-supporting steel panel for isolated installations with Type FK-33 oil circuit breaker assembled for shipment.

**Manually Operated, Non-Automatic**

Operated by the Type HA-2 lever. This lever is equipped with provisions for a 1, 2 or 3-coil trip mechanism. Changeovers from non-automatic to automatic features can be made with a minimum amount of labor and cost. Automatic attachments with calibrating tubes are easily installed in the field. A complete line of transformer, relay, reactor and d.c. trip coils is available. Manually operated breakers have provision for mounting auxiliary switches. Breakers operated remotely may be equipped with magnetic locks.

**Panel Mounting—Breaker for Mounting Directly on Back of 1 or 1½-Inch Panel**

Throw	Amps.	Double-Pole		Triple-Pole		4-Pole	
		Cat. No.	Net Each	Cat. No.	Net Each	Cat. No.	Net Each
Sgl.	200	60036530	1 \$64	60036530	2 \$74	60036530	3 \$96
Sgl.	400	60036530	7 74	60036530	8 87	60036530	9 113
Dbl.	200	60036530	4 128	60036530	5 148	60036530	6 192
Dbl.	400	60036530	10 148	60036530	11 174	60036530	12 226

**Panel Mounting—Breaker for Mounting Directly on Back of 2-Inch Panel**

Throw	Amps.	Double-Pole		Triple-Pole		4-Pole	
		Cat. No.	Net Each	Cat. No.	Net Each	Cat. No.	Net Each
Sgl.	200	60036540	1 \$64	60036540	2 \$74	60036540	3 \$96
Sgl.	400	60036540	7 74	60036540	8 87	60036540	9 113
Dbl.	200	60036540	4 128	60036540	5 148	60036540	6 192
Dbl.	400	60036540	10 148	60036540	11 174	60036540	12 226

**Panel-Frame Mounting—Breaker for Mounting 5-Inch Back of Panel**

Throw	Amps.	Double-Pole		Triple-Pole		4-Pole	
		Cat. No.	Net Each	Cat. No.	Net Each	Cat. No.	Net Each
Sgl.	200	60036550	1 \$70	60036550	2 \$80	60036550	3 \$102
Sgl.	400	60036550	7 80	60036550	8 93	60036550	9 119
Dbl.	200	60036550	4 140	60036550	5 160	60036550	6 204
Dbl.	400	60036550	10 160	60036550	11 186	60036550	12 238

**Remote, Pipe-Framework Mounting**

Throw	Amps.	Double-Pole		Triple-Pole		4-Pole	
		Cat. No.	Net Each	Cat. No.	Net Each	Cat. No.	Net Each
Sgl.	200	60036560	1 \$89	60036560	2 \$99	60036560	3 \$121
Sgl.	400	60036560	7 99	60036560	8 112	60036560	9 138
Dbl.	200	60036560	4 178	60036560	5 198	60036560	6 242
Dbl.	400	60036560	10 198	60036560	11 224	60036560	12 276

**Flat-Surface Mounting—Breaker for Mounting on Flat Surface or Wall**

Throw	Amps.	Double-Pole		Triple-Pole		4-Pole	
		Cat. No.	Net Each	Cat. No.	Net Each	Cat. No.	Net Each
Sgl.	200	60036570	1 \$89	60036570	2 \$99	60036570	3 \$121
Sgl.	400	60036570	7 99	60036570	8 112	60036570	9 138
Dbl.	200	60036570	4 178	60036570	5 198	60036570	6 242
Dbl.	400	60036570	10 198	60036570	11 224	60036570	12 276

\*The installation of apparatus on panel or switchboard is not recommended when that apparatus is subjected to pressure in excess of 2500 volts between phases for ungrounded systems or between lines and neutral for grounded systems. For such installations remote control apparatus is recommended.

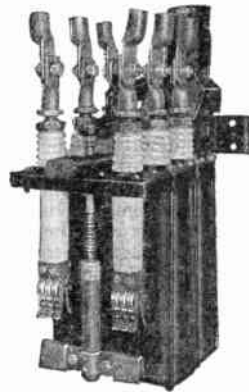
**Solenoid-Operated, Non-Automatic—Single-Throw**

Furnished for mounting breaker and solenoid back to back on pipe framework. Breakers are made automatic by the addition of suitable tripping transformers and circuit-closing overcurrent relays.

Prices and complete information on solenoid-operated breakers on application.

**G-E Types FK-35 and FK-35Y2 Oil Circuit Breakers**

\*2500 and 7500 Volts, Single-Throw



Triple-Pole, Single-Throw, 7500-volt, 600-Ampere Breaker

Types FK-35 and FK-35Y2 breakers follow the standard unit design, i.e., each pole is integral with its own cover, tank, contacts and operating rod. Frame carries breaker mechanism and cross head. Double or triple-pole breakers are assembled on same frame, the former omitting the middle pole. Four-pole have a longer frame and cross head.

Furnished with stud and cable terminals. For bar connection cable terminals are omitted and connection bars bolted to stud terminal. Cable terminals have cable hole as follows: 600 amperes, 1.209 inch diameter; 800 amperes, 1.461 inch diameter.

**Features**

- Breakers adapted to either vertical or horizontal operation
- By making one member of breaker mechanism a bell crank.
- Interchangeability of breaker units of like rating.
- Each phase in separate tank.
- Heavy oval tanks suspended by hook bolts.
- Flared wedge contacts under heavy pressure.
- Arcing tips on FK-35Y2.
- Breaker opens by gravity accelerated by compression springs on operating rods with buffers to absorb shock.
- Full complement of stud and cable terminals.
- Bell alarm auxiliary switch with all operating levers.

**Manually Operated, Non-Automatic**

With HA-2 operating lever. Non-automatic breakers listed can be made automatic by the addition of suitable current transformers and automatic trip attachments.

**For Mounting Directly on Back of Panel**

Type	Amps.	Volts	Double-Pole		Triple-Pole		4-Pole	
			†Cat. No.	Net Each	†Cat. No.	Net Each	†Cat. No.	Net Each
FK-35	600	7500	19459730	13 \$116	19459730	14 \$136	19459730	15 \$177
	800	2500	19459730	7 147	19459730	8 173	19459730	9 225
FK-35Y2	600	7500	19459770	16 130	19459770	17 153	19459770	18 199

**For Mounting on Panel Frame, 5 Inches Back of Panel**

FK-35	600	7500	19459720	13 \$122	19459720	14 \$142	19459720	15 \$183
	800	2500	19459720	7 153	19459720	8 179	19459720	9 231
FK-35Y2	600	7500	19459760	16 136	19459760	17 159	19459760	18 205

**For Mounting Remote From Panel—For Mounting on Pipe Framework**

FK-35	600	7500	19459750	13 \$141	19459750	14 \$161	19459750	15 \$202
	800	2500	19459750	7 172	19459750	8 198	19459750	9 250
FK-35Y2	600	7500	19459880	16 155	19459880	17 178	19459880	18 224

**For Mounting on Flat Surface**

FK-35	600	7500	19459740	4 \$141	19459740	5 \$161	19459740	6 \$202
	600	7500	19459870	13 155	19459870	14 178	19459870	15 224

**For Mounting in Masonry Cell (Cell Material Not Included)**

FK-35	600	7500	19459740	10 \$141	19459740	11 \$161	19459740	12 \$202
	600	7500	19459870	16 155	19459870	17 178	19459870	18 224

\*Installation of apparatus on panel or switchboard is not recommended when apparatus is subjected to pressure in excess of 2500 volts between phases for ungrounded system or between lines and neutral for grounded systems. For such installations, remote control apparatus is recommended.

†Breaker frame support included.

**Double-Throw**

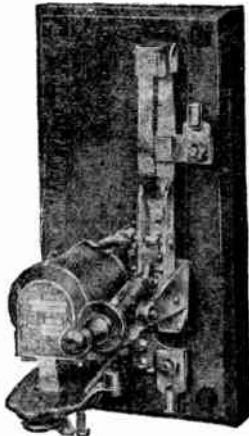
Double-throw FK-35 and FK-35Y2 breakers consist of two single-throw breakers, mechanical interlock and cross-trip for two operating levers. Order two breakers by Cat. No. and specify that they are to be operated as a double-throw equipment. Specify desired distance between operating levers 8, 9, 10, 11, 12 or 13 inches for remote operation and 15¼ inches minimum for direct on panel or 5 inches back of panel. Price the complete double-throw breakers at exactly twice the price per Cat. No. selected from above table.

**Solenoid-Operated, Non-Automatic**

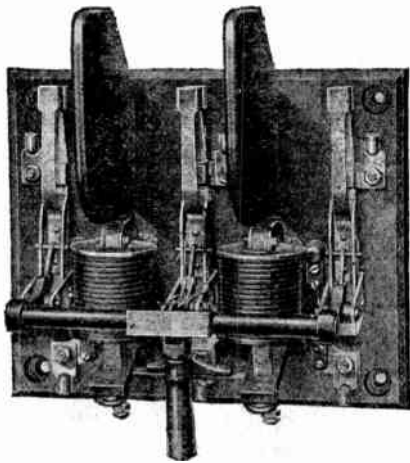
Breakers are made automatic by the addition of suitable current transformers and circuit-closing relays. Prices and complete information on application.



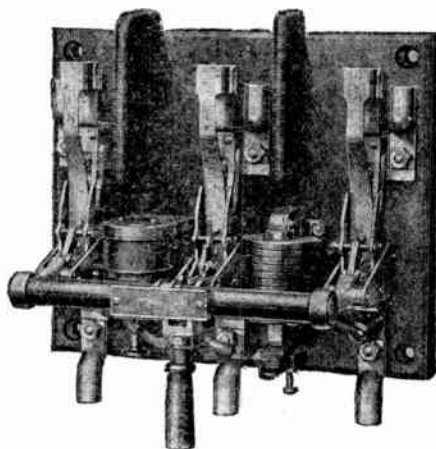
## G-E Type CG Air Circuit Breakers



D. C., Overload  
Single-Pole, 550 Volts or Less



A. C., Overload  
Triple-Pole, 600 Volts, 2 Overload Coils



A. C., Overload and Undervoltage  
Triple-Pole, 600 Volts

## G-E Type CG Air Circuit Breakers

### D.C.—Overcurrent

Amps.	Cat. No.	Single-Pole, 550 Volts or Less		Back Connected for 1½ or 2-in. Panel	
		Front Connected on Base	Ship. Wt. Lbs. Net Each	Front Connected on Base	Ship. Wt. Lbs. Net Each
3	2802301G1	20	\$18	2802300G1	12 \$18
5	2802301G2	20	18	2802300G2	12 18
10	2802301G3	20	18	2802300G3	12 18
15	2802301G4	20	18	2802300G4	12 18
25	2802301G5	20	21	2802300G5	12 21
50	2802301G6	20	21	2802300G6	12 21
100	2802301G7	20	21	2802300G7	12 21
200	2802303G1	32	29	2802302G1	20 29
300	2802303G2	32	31	2802302G2	20 31
Double-Pole (One Overcurrent Coil) 550 Volts or Less					
3	2802305G1	30	\$26	2802304G1	15 \$26
5	2802305G2	30	26	2802304G2	15 26
10	2802305G3	30	26	2802304G3	15 26
15	2802305G4	30	26	2802304G4	15 26
25	2802305G5	30	30	2802304G5	15 30
50	2802305G6	30	30	2802304G6	15 30
100	2802305G7	30	30	2802304G7	15 30
200	2802307G1	50	44	2802306G1	35 44
300	2802307G2	50	49	2802306G2	35 49

Calibration from 75 to 150 per cent of normal capacity.

### D.C.—\*Plain Shunt Trip

Shunt trip coils are intended for momentary operation only and must not be left in circuit continuously after being energized. Connections should be so arranged that the opening of the circuit breaker will disconnect the shunt trip circuit. If for any reason, however, the shunt trip has to be connected to the line side, a circuit-opening auxiliary switch should be mounted on the breaker to open the trip circuit.

Amps.	Cat. No.	Single-Pole, 550 Volts or Less		Back Connected for 1½ or 2-in. Panel	
		Front Connected on Base	Ship. Wt. Lbs. Net Each	Front Connected on Base	Ship. Wt. Lbs. Net Each
100	2802329G1	20	\$21	2802328G1	12 \$21
200	2802331G1	32	29	2802330G1	20 29
300	2802331G2	32	31	2802330G2	20 31
Double-Pole (Trip Both Poles Same as Overcurrent), 550 Volts or Less					
100	2802333G1	25	\$29	2802332G1	15 \$29
200	2802335G1	48	44	2802334G1	32 44
300	2802335G2	48	49	2802334G2	32 49

\*The coil used with the shunt type breaker will operate on any d.c. voltage of 550 volts or less.

These breakers have no overcurrent coils. The shunt coil on these breakers replaces the overcurrent coil, and is not an attachment as in the case of overcurrent and shunt trip.

### D.C.—Undercurrent

Undercurrent breakers are calibrated in the factory to trip on 20 per cent of the carrying capacity. They can be set to trip at any point as low as 10 per cent if so specified on requisition.

Amps.	Cat. No.	Single-Pole, 550 Volts or Less		Back Connected for 1½ or 2-in. Panel	
		Front Connected on Base	Ship. Wt. Lbs. Net Each	Front Connected on Base	Ship. Wt. Lbs. Net Each
15	2802309G4	20	\$21	2802308G4	12 \$21
25	2802309G5	20	22	2802308G5	12 22
50	2802309G6	20	22	2802308G6	12 22
100	2802309G7	20	22	2802308G7	12 22
200	2802311G1	32	31	2802310G1	20 31
300	2802311G2	32	33	2802310G2	20 33
Double-Pole (One Overcurrent Coil) 550 Volts or Less					
15	2802313G4	30	\$30	2802312G4	15 \$30
25	2802313G5	30	33	2802312G5	15 33
50	2802313G6	30	33	2802312G6	15 33
100	2802313G7	30	33	2802312G7	15 33
200	2802315G1	50	47	2802314G1	35 47
300	2802315G2	50	52	2802314G2	35 52



**G-E Type CG Air Circuit Breakers**

**A.C.—Overcurrent**

Front Connected on Base, 600 Volts or Less

Amps.	Single-Pole			Double-Pole (One Overcurrent Coil)			*Triple-Pole (Two Overcurrent Coils)		
	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each
3	280234561	20	\$21	280234961	30	\$32	280236961	44	\$57
5	280234562	20	21	280234962	30	32	280236962	44	57
10	280234563	20	21	280234963	30	32	280236963	44	57
15	280234564	20	21	280234964	30	32	280236964	44	57
25	280234565	20	25	280234965	30	35	280236965	44	65
50	280234566	20	25	280234966	30	35	280236966	44	65
100	280234567	20	25	280234967	30	35	280236967	44	65
200	280234761	32	35	280235161	50	52	280237161	70	90
300	280234762	32	37	280235162	50	58	280237162	70	100

Back Connected for 1 1/2 or 2-Inch Panel 600 Volts or Less

3	280234461	12	\$21	280234861	15	\$32	280236861	40	\$57
5	280234462	12	21	280234862	15	32	280236862	40	57
10	280234463	12	21	280234863	15	32	280236863	40	57
15	280234464	12	21	280234864	15	32	280236864	40	57
25	280234465	12	25	280234865	15	35	280236865	40	65
50	280234466	12	25	280234866	15	35	280236866	40	65
100	280234467	12	25	280234867	15	35	280236867	40	65
200	280234661	20	35	280235061	35	52	280237061	55	90
300	280234662	20	37	280235062	35	58	280237062	55	100

\*This breaker does not take standard undervoltage attachment.

Calibration is from 75 to 150 per cent of normal capacity.

**A.C.—Overcurrent and Undervoltage**

Triple-Pole, One Overcurrent and One Undercurrent Coil—600 Volts or Less—25, 40 and 60 Cycles

Amps.	Front Connected on Base			Back Connected for 1 1/2 or 2-In. Panels		
	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each
3	2841444G40	47	\$60	2841444G4	44	\$60
5	2841444G44	47	60	2841444G8	44	60
10	2841444G48	47	60	2841444G12	44	60
15	2841444G52	47	60	2841444G16	44	60
25	2841444G56	47	67	2841444G20	44	67
50	2841444G60	47	67	2841444G24	44	67
100	2841444G64	47	67	2841444G28	44	67
200	2841444G68	70	91	2841444G32	55	91
300	2841444G70	70	107	2841444G36	55	107

Calibration is from 75 to 150 per cent of normal capacity.

**A.C.—Plain Shunt Trip**

Shunt trip coils are intended for momentary operation only and must not be left in circuit continuously after being energized. Connections should be so arranged that opening of circuit breaker will disconnect shunt trip circuit. If for any reason, however, shunt trip has to be connected to the line side a circuit-opening auxiliary switch should be mounted on breakers to open trip circuit.

Front Connected on Base—600 Volts or Less

Amps.	Single-Pole			Double-Pole (Trip All Poles Same as Overcurrent)			Triple-Pole (Trip All Poles Same as Overcurrent)		
	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each
100	280235361	20	\$24	280235761	25	\$33	280238161	40	\$44
200	280235561	32	32	280235961	48	42	280238361	65	72
300	280235562	32	34	280235962	48	46	280238362	65	79

Back Connected for 1 1/2 or 2-Inch Panel 600 Volts or Less

100	280235261	12	\$24	280235661	15	\$33	280238061	30	\$44
200	280235461	20	32	280235861	32	42	280238261	50	72
300	280235462	20	34	280235862	32	46	280238262	50	79

†Coil used with shunt trip breaker will operate on any a.c. voltage, 600 volts or less.

Capacities below 100 ampere, same price.

These breakers have no overcurrent coils. Shunt coil on these breakers replaces the overcurrent coil, and is not an attachment as in the case of overcurrent and shunt trip.

**G-E Undervoltage Attachments**

For Type CG Air Circuit Breakers

For Use with Single and Double-Pole Breakers 125, 250 and 550 Volts A.C. or D.C.



By the use of undervoltage release attachment, circuit breakers may be arranged to operate on a drop in or cessation of voltage, two or more circuit breakers may be electrically interlocked and by use of a switch to short-circuit undervoltage release, circuit breakers may be tripped from one or more remote points.

Releases at approximately one-half rated voltage.

Voltage of Circuit	Approx. Releasing Voltage	*For Use with 3 to 100-Amp. Breakers			*For Use with 200 and 300-Amp. Breakers		
		Cat. No.	Ship. Wt. Lbs.	Net Wt. Each	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each
125	60	6001362G1	4	\$8	6001362G4	4	\$8
250	125	6001362G2	6	9	6001362G5	6	9
550	250	6001362G3	6	11	6001362G6	6	11

\*For use with single and double-pole breakers only. Information covering undervoltage attachment for use with triple-pole breakers on application.

**G-E Shunt Trip Attachments**

For Type CG Air Circuit Breakers

For Use with Single and Double-Pole Breakers, 125, 250 and 550 Volts D.C.—110, 220 and 440 Volts A.C.



This attachment should be allowed to remain in circuit only momentarily.

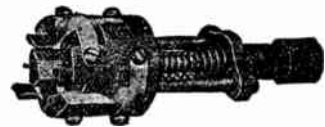
Same attachment is used with either single or double-pole breakers. Only one pole (the right-hand from front) is tripped out by these attachments.

Cat. No. 2801345G3, For Use with 3 to 100-Ampere Circuit Breakers, Shipping Weight 4 Pounds...each \$5.00  
Cat. No. 2801345G4, For Use with 200 and 300-Ampere Circuit Breakers, Shipping Weight 4 Pounds...each 5.00

**G-E Auxiliary Switches**

For Type CG Air Circuit Breakers

Combined Circuit-Opening and Circuit-Closing For A.C. or D.C.



For Mounting On	For Use with 3 to 100-Amp. Breakers			For Use with 200 and 300-Amp. Breakers		
	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each	Cat. No.	Ship. Wt. Lbs.	Net Wt. Each
1 1/4-Inch Base	37559	2	\$4.60	37562	2	\$4.60
1 1/2-Inch Panel	37560	2	4.60	37563	2	4.60
2-Inch Panel	37561	2	4.60	37564	2	4.60

**G-E Copper Cable Terminals**

For Type CG Air Circuit Breakers



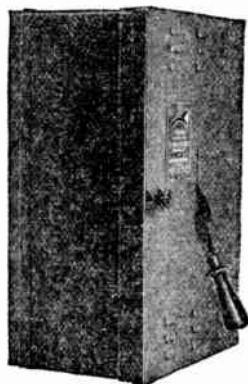
Amps.	3 to 25-Amp. Terminals			25 to 300-Amp. Terminals		
	Diam. Cable Hole In.	Cat. No.	Wt. Lbs. Net Each	Diam. Stud Hole In.	Cat. No.	Wt. Lbs. Net Each
3-25	...	*174431	1 7/64 2 \$0.02	103765	1 3/32 3 \$0.12	
50	.265	41073	1 7/64 3 .12	103765	1 3/32 3 .12	
100	.419	1453744	9/32 4 1/2 .08	1444461	1 3/32 4 1/2 .07	
200	.586	1454829	1 3/32 9 .20	1444465	1 7/32 9 .15	
300	.776	411695	1 3/32 30 .25	1444471	2 1/32 30 .35	

\*Cup washer.

## G-E Type AB-2 Air Circuit Breakers

Trip-Free—Enclosed for Individual Mounting

600 Volts A.C. or 250 Volts D.C.



A back-connected trip-free air circuit breaker mounted on an insulating base. Can be manually or electrically operated and is double or triple pole.

Available in the following arrangements: Open construction—on front of panel; metal-enclosed; metal-enclosed with pull box. Mounted in dead-front or metal-enclosed switchboards.

Breaker has high interrupting rating—12000 amperes for all voltages. It is rated at 250 volts d.c. and 600 volts a.c., 15 to 600 amperes.

The above illustration shows a 3-pole breaker having 3 overcurrent trips in steel cabinet with pull box for wall mounting, disconnecting contacts for studs and shunt-trip connections.

Amperes	Double-Pole 2 Coils Net Each	Triple-Pole 2 Coils Net Each	Triple-Pole 3 Coils Net Each
15	\$70.00	\$77.00	\$83.00
20	70.00	77.00	83.00
30	70.00	77.00	83.00
45	70.00	77.00	83.00
60	70.00	77.00	83.00
80	70.00	77.00	83.00
100	70.00	77.00	83.00
150	94.00	127.00	133.00
200	101.00	134.00	140.00
300	132.00	164.00	170.00
400	160.00	195.00	201.00
600	224.00	257.00	263.00

Shipping weight approximately 100 pounds each.

Information on breakers not listed and on 4-pole breakers furnished on application.

**Additions**

Shunt Trip Device.....each	\$8.30
Undervoltage Device.....each	8.30
Push Button Auxiliary Switch.....each	5.50
A.C. or D.C. Motor Operating Mechanism....each	111.00

**Deductions**

Time Delay and Magnetic Trip for Making Breaker Non-Automatic.....per coil	6.00
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## G-E Induction Time Relays

For A.C. Circuits



Type IAC Single-Unit Current Relay



Type IAV Single-Unit Voltage Relay

For protection of a.c. circuits and apparatus. These relays are particularly applicable where either consistency or selectivity in time of operation is desired.

Rectangular case is 5½ inches wide; permits mounting of 4 relays side by side in space 24 inches wide.

The stationary contact members are individually adjustable.

Target indicator is clearly visible on Type IAC when relay has operated. Disc on Type IAC is reset by weight, producing constant return force.

Type IAC relays can be furnished for time overcurrent tripping at current settings and instantaneous overcurrent tripping at higher current settings by adding instantaneous attachments.

**Standard Ratings**

**Type IAC Overcurrent or Undercurrent Relays**

Current taps: 4 to 15, 4 to 16, 1.5 to 6 and .5 to 2.5 amperes. Taps: 4-15 amperes—taps at 4, 5, 6, 8, 10, 12 and 15 amperes; 4-16 amperes—taps at 4, 5, 6, 8, 10, 12 and 16 amperes; 1.5-6 amperes—taps at 1.5, 2.0, 2.5, 3.0, 4.0, 5.0 and 6.0 amperes; 0.5-2.5 amperes—taps at 0.5, 0.6, 0.8, 1.0, 1.5, 2.0 and 2.5 amperes.

Frequency: 25, 50 and 60 cycles.

Target ratings: 1 and 0.2 ampere.

**Type IAV Overvoltage and Undervoltage Relays**

Voltage: 115, 230, 460 and 575 volts.

Frequency: 25, 50 and 60 cycles.

**Features**

**Type IAC**

Units: Single or 3.

Contacts: 2-contact, single-circuit closing; 3-contact, double-circuit closing; double-throw, single-circuit closing each way.

Attachments: Current indicator, instantaneous element, and auxiliary trip.

**Type IAV**

Contacts: 2-contact, single-circuit closing; 3-contact, double-circuit closing; double-throw, 1-circuit closing each way.

Attachments: Instantaneous element.

The standard undervoltage adjustment of Type IAV relays is 70% of rated voltage to close the contacts. This may be adjusted to any value between 50% and 95% of rated voltage by turning adjusting screw on front of relay.

The burden of the 115-volt, 60-cycle coil is 13 volt-amperes and of the 115-volt 25-cycle coil, 7.5 volt-amperes at rated voltage. All coils are suitable for continuous operation at rated voltage.

**Time Overcurrent**

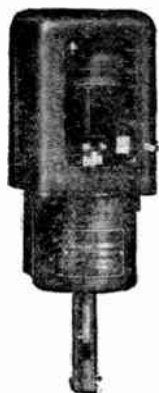
Type	Each	Service	Function	Circuits	Shp. Wt. Lbs.
IAC	\$41.00	Sgl.-Ph.	Cir.-Closing	1-Circuit	19
IAC	179.00	3-Ph.	Cir.-Closing	Three 1-Cir.	55
<b>Instantaneous and Time</b>					
IAC	\$53.00	Sgl.-Ph.	Cir.-Closing	1-Circuit	19
IAC	215.00	3-Ph.	Cir.-Closing	Three 1-Cir.	60
<b>Undervoltage</b>					
IAV	\$53.00	Sgl.-Ph.	Cir.-Closing	1-Circuit	19
IAV	57.00	Sgl.-Ph.	Cir.-Closing	2-Circuit	19
<b>Overvoltage</b>					
IAV	\$53.00	Sgl.-Ph.	Cir.-Closing	1-Circuit	19

The above are typical listings with 1 ampere 0.25-ohm, or 0.2 ampere 7 ohms target coil; specify which target coil or the device with which relay is to be used when ordering.

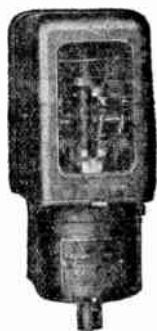
**G-E Plunger Type Relays**

For Mounting on Panels

A.C., Single-Pole



Time Relay



Instantaneous Relay

The plunger type includes a complete line of relays to protect against overcurrent and undervoltage, and for use as auxiliary relays. The same principle of operation is common to all of them and depends upon the action of a magnet coil in attracting or releasing the plunger when predetermined values of voltage or current are present in the coil circuit.

The mechanical design is unique, as all relays are single-pole, made of interchangeable parts, and the contacts can be arranged for circuit opening or circuit closing. This design, with its variety of adjustments, large variety of coils, and arrangement of contacts, makes it possible to adapt these relays to an unusually large number of applications.

For convenience of selection the following typical varieties are listed:

Type	Each	Circuits	Operation	Function	Normal Position	Shipped Lbs.
<b>Overcurrent</b>						
PAC*	\$28.00	2	Instantaneous	1—Closing 1—Opening	Open	6
PAC*	32.00	2	Time		Closed	6
<b>A.C. Undervoltage</b>						
PCV	\$36.00	2	Instantaneous	1—Closing 1—Opening	Open	6
PCV	40.00	2	Time		Closed	6
<b>Auxiliary Voltage</b>						
PAA*	\$30.00	2	Instantaneous	1—Closing 1—Opening	Open	6
PAA*	34.00	2	Time		Closed	6
<b>Overcurrent</b>						
PQ	\$22.00	1	Instantaneous	Closing	Open	10
PQ	26.00	1	Time	Closing	Open	12

\*These relays are self-reset and are also available with either electrical or hand-reset features.

In ordering specify by description and for time relay state whether inverse time or definite time is desired. Current transformers are not included.

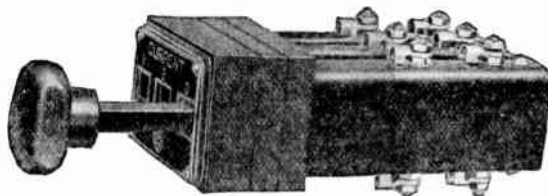
**Principal Features**

- Covers are made of a molded compound.
- Removable studs are provided for back connection.
- Only one valve is provided for time relays. This valve serves a dual purpose and can readily be adjusted to make the time interval effective on either the up or down stroke of the plunger, or both in the PAC and PAA types.
- Contacts are of the universal design and can be readily changed from circuit-opening to circuit-closing or vice versa.
- Toggle can be changed from self-reset to hand-reset or vice versa, by a simple means provided for this purpose.
- The movable contact bar is held securely but not permanently, thereby easily permitting change from parallel to separate circuits or vice versa, by replacing contact bar.
- Material of bellows is not affected by seasonable changes in temperature.
- All relays are provided with an orange-colored mechanical target indicator, hand-reset by means of a push button in cover.

**G-E Type PJ-4 (Standard Unit) Current and Potential Transfer Jacks and Plugs**

For Mounting on 5/32, 1, 1½ or 2-Inch Panels

10 Amperes, 600 Volts



Cat. No. 3663608G2 Jack with Plug Cat. No. 2874991G1 Inserted Part Way

The Type PJ-4 line includes jacks and plugs other than those for connecting an ammeter to any phase of a 2 or 3-phase circuit for use with current transformers having a 5-ampere secondary.

**Jack**

Cat. No.	Each	Unit Assembly	Description and Use	Shipped Wt. Lbs.
†3663608G 1	\$4.00	Sgl.	Current Transfer S.P. Unit..	2
†3663608G 2	10.00	Tpl.	Current Trans. 3 S.P. Units.	5
3663608G16	4.50	Sgl.	Potential Transfer 3-Ph. 3-W. Circuit D.P., S.-T. Unit..	2
3663608G17	12.00	Tpl.	Potential Transfer 3-Ph. 3-W. Cir. 3 D.P., S.-T. Units...	5
†3663608G 7	6.00	Sgl.	Potential Transfer T.P., S.-T. Unit.....	2
†3663608G 8	14.00	Tpl.	Potential Transfer 3 T.P., S.-T. Units.....	5
§3663608G11	5.00	Sgl.	Current and Potential Transfer 3-Ph., 4-Wire Circuit..	2
3663608G12	13.00	Tpl.	Current and Potential Trans. 3-Ph., 4-W. Cir. 3 S.P. Units.....	5
†3663608G13	6.50	Sgl.	Cur. and Pot. Trans. 3-Ph., 3-W. Circuit Single Unit..	2
†3663608G14	17.00	Tpl.	Cur. and Pot. Trans. 3-Ph., 3-W. Circuit 3 Units.....	5
†3663608G15	7.00	Sgl.	Potential Transfer 4-P., S.-T. Unit.....	2

**Isolating Switch and Plug**

*3663608G 6	\$13.00	Sgl.	Potential Trans. D.P., S.-T. Unit with Non-Removable Plug.....	2
*3663608G10	15.00	Sgl.	Potential Trans. T.P., S.-T. Unit with Non-Removable Plug.....	2

**Plug**

2874991G 1	\$2.00	Sgl.	For Cat. No. 3663608G1 or Cat. No. 3663608G2.....	1
§2874991G 2	4.00	Sgl.	For Cat. No. 3663608G11 or Cat. No. 3663608G12.....	1
6011756G 1	4.00	Sgl.	For Cat. No. 3663608G16 or Cat. No. 3663608G17.....	1
2874991G 4	6.50	Sgl.	For Cat. No. 3663608G13 or Cat. No. 3663608G11.....	1
3874991G 5	6.50	Sgl.	For Cat. No. 3663608G7 or Cat. No. 3663608G8.....	1
2874991G 6	8.50	Sgl.	For Cat. No. 3663608G15.....	1
2874992G 1	10.00	Sgl.	For Cat. No. 3663608G10.....	1
2874992G 2	9.50	Sgl.	For Cat. No. 3663608G 6.....	1

\*Plugs not included in Cat. No. or prices of jacks except in Cat. Nos. 3663608G6 and 3663608G10.

†When old style plug Cat. No. 2649822G5 for 5/32-inch panel is used omit all spacers when mounting receptacle on panel.

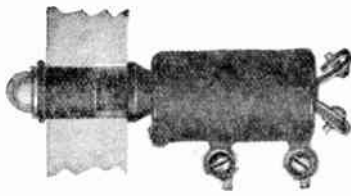
‡Do not use on any board where a common instrument is connected to plug receptacle of same size opening.

§Formerly used also for temperature meter outfits. Complete information furnished on jacks and plugs for temperature meter equipment.

Plug holder—if desired, use Cat. No. 129965.



## G-E Combined Receptacle and Resistor Indicating Lamps and Color Caps



Receptacle body and escutcheon are made of insulating compound which permits using the device on metal panels. The escutcheon, which mounts in panel hole from front and receptacle body which mounts from rear are threaded, making a

compact unit when assembled.

Resilient metal contact clips hold lamp and provide rear connections.



A complete indicating lamp outfit with Cat. No. 59X243 G-E Mazda telephone type T2 bulb, No. 902 slide base, 24 volts, .032-.038 amperes, a resistor except on 24 volt where none is required, a set of binding screws and a push-type compound color cap. Specify color of cap wanted in ordering.

Resistor element slides over receptacle body from rear and complete device has provision for soldered connections. Binding screws are included for use where soldered connections are not desired.

Device is for mounting on 1, 1½ or 2-inch panel. For mounting on ¾-inch panel order one spacer Cat. No. 6009135-P1, 10 cents net extra. For mounting on ½-inch metal panel, order one spacer Cat. No. 6009135P2, 10 cents net extra. Panels more than 1 inch thick must be counterbored on the back with a diameter of 1¼ inches to a depth of 1 inch from the front of panel.

### Receptacle and Resistor Indicating Lamps Complete with Color Caps Where Lamp is Operated at One Brilliancy

Cat. No.	Unit Each	Std. Pkg. 40 Units Each	CIRCUIT VOLTAGE			Series Resistor Ohms	Ship. Wt. Oz.
			†Rated	Min.	Max.		
6005406G1	\$2.30	\$83.00	24	21	25	No Resistance Included	2
6005406G2	2.80	101.00	48	42	50	685	4
6005406G4	2.80	101.00	110	88	121	2500	4
6005406G5	2.80	101.00	125	115	130	2885	4
6005406G7	2.80	101.00	220	176	242	5600	4
6005406G8	2.80	101.00	250	230	260	6457	4

### Receptacle and Resistor (Middle Tap) Indicating Lamps Complete with Clear Color Caps and Connection Giving \*Dim-Bright Operation

6005406G3	\$3.00	\$108.00	48	42	50	1160 Total with 400 Tap	4
6005406G6	3.00	108.00	125	115	130	4120 Total with 2155 Tap	4
6005406G9	3.00	108.00	250	230	260	8929 Total with 4996 Tap	4

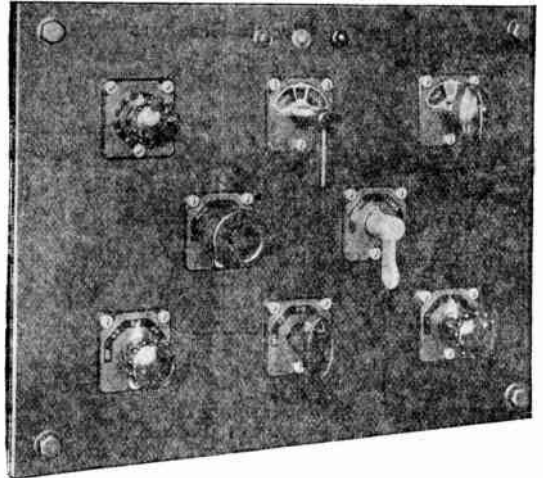
### Spare Color Caps

Cat. No.	Unit Each	Std. Pkg. 40 Units Each	Color	Material No.	Ship. Wt. Oz.
6009134P1	\$.30	\$11.00	Clear	106	1
6009134P2	.30	11.00	Red	106	1
6009134P3	.30	11.00	Green	106	1
6009134P4	.30	11.00	Yellow	106	1

\*This applies to the telltale system of connections as used with Type CL-1, special twin pull-button and Type SB-1 control switches.

†For rated voltages higher than listed, use Cat. No. 6005406G1 and a cage-type resistor mounted separate from receptacle.

## G-E Type SB-1 Control and Instrument Switches



The Type SB-1 switches are multi-contact switches for the control of circuit breakers and electrically operated governors and rheostats, for the transfer of current and potential coils of instruments, and for many other similar applications.

The features of these switches are:

Positive quick-acting contacts.

Silver-to-silver contacts.

Barriers between adjacent contacts to prevent arcing.

All connections easily fastened with a screwdriver.

Ample room for connecting leads.

Escutcheon plates of black Textolite, permanent finish.

Switches are compact and require small panel space.

Mechanical target (red or green) shows last operation of the circuit-breaker control switch.

Distinctive handles of different styles.

## G-E Type JY-285 Tripping Current Transformers

For Oil Circuit Breakers  
25-125 Cycles, 5000 Volts or Less



May be used with any standard 4 and 5-ampere trip coils. In general its use is limited to tripping duty only, either directly or in connection with relays, but where high accuracy is not essential a secondary ammeter may also be used.

Tested at 15000 volts between primary and all other parts, and at 2500 volts between secondary and ground.

Primary terminals are not included.

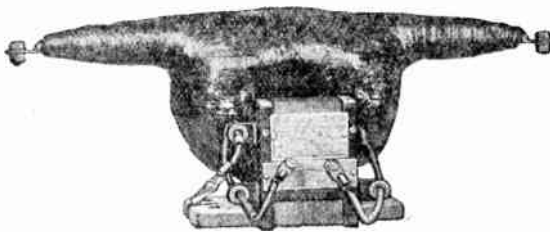
Shipping weights: 5 to 100 amperes, 16 pounds; 120 to 200 amperes, 18 pounds; 250 to 800 amperes, 20 pounds.

Cat. No.	Net Each	Prim. Amps.	Ratio	Cat. No.	Net Each	Prim. Amps.	Ratio
9JY285AAA	\$12.00	5	1-1	9JY285AAR	\$12.00	100	20-1
9JY285AAB	12.00	10	2-1	9JY285AAS	12.00	120	24-1
9JY285AAD	12.00	15	3-1	9JY285AAV	12.50	150	30-1
9JY285AAE	12.00	20	4-1	9JY285AAW	13.00	200	40-1
9JY285AAF	12.00	25	5-1	9JY285AAZ	13.50	250	50-1
9JY285AAH	12.00	30	6-1	9JY285AAY	14.00	300	60-1
9JY285AAJ	12.00	40	8-1	9JY285AAZ	15.00	400	80-1
9JY285AAK	12.00	50	10-1	9JY285ABA	16.00	500	100-1
9JY285AAL	12.00	60	12-1	9JY285ABB	17.00	600	120-1
9JY285AAM	12.00	75	15-1	9JY285ABC	19.00	800	160-1

**G-E Type Y-298A Tripping Current Transformers**

For Oil Circuit Breakers

25-125 Cycles, 15000 Volts or Less

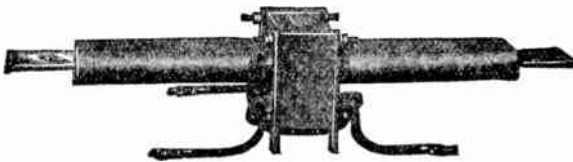


400 Amperes and Below

These transformers are for tripping oil circuit breakers. They may be used with any of the standard 4- and 5-ampere trip coils. They are listed in capacities from 5 to 800 amperes at 15000 volts or less.

In general their use is limited to tripping duty only, either directly or in connection with relays, but where high accuracy is not essential a secondary ammeter may be used.

As these transformers are small and inexpensive they may be used very conveniently in installations where series trip has heretofore been recommended.



500 to 800 Amperes

The smaller capacities from 5 to 400 amperes inclusive are equipped with cast metal bases with two-bolt holes, allowing them to be bolted to flat surfaces or pipe supports.

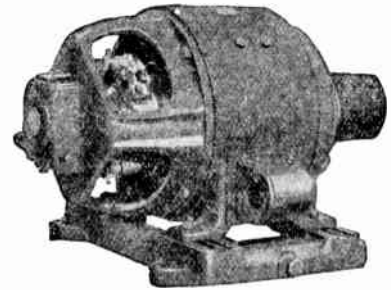
The larger capacities from 500 to 800 amperes inclusive are of the bus type and are supported by the buses or the stud of the oil circuit breaker, no bases being required due to the light weight of these transformers.

Cat. No.	Primary Capacity in Amperes	Ratio	Shipping Weight Pounds	Price Each
216838	5	1-1	44	\$53.00
216839	10	2-1	44	53.00
216841	15	3-1	44	53.00
216842	20	4-1	44	53.00
216843	25	5-1	44	53.00
216844	30	6-1	44	53.00
216845	40	8-1	44	53.00
216846	50	10-1	44	53.00
216847	60	12-1	44	53.00
216848	75	16-1	44	53.00
216849	100	20-1	44	53.00
216850	125	25-1	44	54.00
216851	150	30-1	44	54.00
216852	200	40-1	44	55.00
216853	250	50-1	44	55.00
216854	300	60-1	44	55.00
216855	350	70-1	44	56.00
246264	400	80-1	44	56.00
246265	500	100-1	44	56.00
246266	600	120-1	44	56.00
246267	800	160-1	44	56.00

All transformers are provided with an additional turn on secondary for ammeters only.

These transformers are tested at 5000 volts between primary and all other parts, and at 2500 volts between secondary and ground.

**G-E Type B Direct Current Motors**  
Ball or Sleeve Bearings, 115 or 230 Volts



Constant Speed

These motors are particularly suitable for a wide range of industrial applications, such as driving pumps, fans, blowers, line shafting and similar equipment requiring continuous operation and fairly close speed regulation. The h.p. ratings are based on continuous duty at 40° C.

**Constant Speed—Shunt or Compound-Wound**

On all constant speed motors, speed may be increased 25% by field control and reduced 50% by armature control.

Frame No.	H.P. at 40°	Full Load Speed R.P.M.	Max. Speed by Field Control, R.P.M.	**Sleeve Bearings Each
204	1/2	850	1750	\$91.00
204	3/4	1150	1725	85.00
224	...	850	1700	100.00
204	1	1750	2200	82.00
204	...	1150	1725	96.00
225	...	850	1700	110.00
204	1 1/2	3500	3500	97.00
224	...	1750	2200	93.00
224	...	1150	1725	110.00
254	...	850	1700	177.00
224	2	3500	3500	114.00
225	...	1750	2200	104.00
225	...	1150	1725	129.00
254	...	850	1700	200.00
224	3	3500	3500	119.00
225	...	1750	2200	126.00
254	...	1150	1725	195.00
284	...	850	1700	344.00
225	5	3500	3500	156.00
254	...	1750	2200	203.00
284	...	1150	1725	247.00
254	7 1/2	3500	3500	300.00
284	...	1750	2200	346.00
284	10	3500	3500	345.00

**Adjustable Speed—Shunt-Wound**

Motors are available for these applications requiring speed adjustment in ratios 3:1 or greater.

Frame No.	Constant H.P.		*Constant H.P.		†Tapered H.P.		**Sleeve Bearings 115 Volts Each	230 Volts Each
	All Speeds 1 Hour	50° C. Rise	40° C. Rise Continuous	Basic Full Load	40° C. Rise Continuous	Basic Full Load R.P.M.		
204	1/2	650	...	...	...	...	\$100.00	\$96.00
204	3/4	800	1/2	850	1/2 to 3/4	800	104.00	99.00
224	3/4	650	1/2	700	1/2 to 3/4	650	116.00	110.00
224	1	800	3/4	850	3/4 to 1	800	128.00	122.00
225	1	650	3/4	700	3/4 to 1	650	143.00	136.00
225	1 1/2	800	1	850	1 to 1 1/2	800	157.00	150.00
254	1 1/2	600	1	650	1 to 1 1/2	600	209.00	200.00
254	2	700	1 1/2	750	1 1/2 to 2	700	229.00	218.00
284	2	500	1 1/2	550	1 1/2 to 2	500	275.00	261.00
284	3	700	2	750	2 to 3	700	271.00	258.00

\*Constant h.p.: from basic speed upward to 150%, temperature will not exceed 50° C. rise; above 150% of basic speed the temperature will not exceed 40° C. rise.

\*\*For ball bearings add 5% to sleeve bearing price, minimum addition \$4.00.

†Tapered h.p.: from basic speed upward to 106%, motor delivers minimum rated h.p., temperature not to exceed 50° C. rise; 40° C. rise is not exceeded at speeds above 150% of basic speed.

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

## G-E Single-Phase Motors

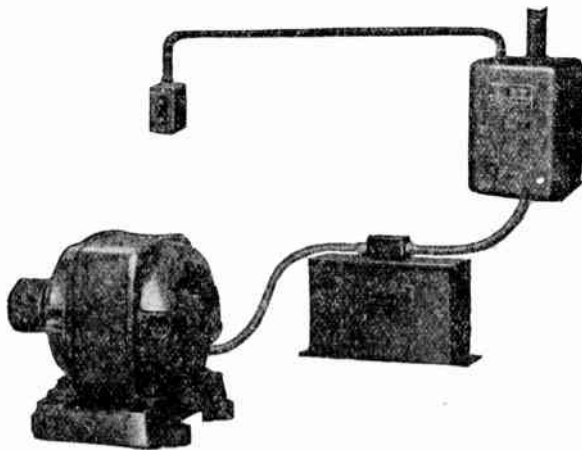
¼ to 10 H.P., 60 Cycles, 220 Volts

### Type SCR



The Type SCR motor is a constant-speed repulsion-induction single-phase motor intended for use in general purpose applications. This motor combines the high starting torque of the repulsion motor with the excellent speed characteristics of an induction motor, and is consequently a successful motor for use in a wide range of industrial applications.

### Type KC



Type KC Motor, Capacitor, Starter and Push-Button Station

For three different classes of duties, as follows:

1.—General purpose constant speed capacitor motors. These motors are suitable for application where quiet operation, freedom from radio interference or high power factor is desired and where regulations require enclosure of commutator type motors. In order to secure quiet operation the motors should be loaded to at least 50% of full load.

Suitable applications include centrifugal pumps, refrigeration compressors, conveyors, garage equipment, etc. Motors for such applications as elevators, washing machines, etc., are special and information will be furnished upon application.

2.—High torque constant speed capacitor motor for fan duty. Suitable for belt-driven fans—quiet operation is the most important characteristic and in order to secure quiet operation the motor should be loaded to at least 50% of full load.

The two types above are designed to use a definite type and size of capacitor as indicated in the motor nameplate. Capacitor unit consists of a running capacitor, a starting capacitor and a relay, all mounted in a metal enclosing case. The running capacitor is continuously rated and is permanently connected in the motor circuit. The starting capacitor is intermittently rated and is disconnected from motor circuit during period of starting by a relay.

3.—Low torque constant speed capacitor motors for fan duty. Suitable for direct connected fans only. Here too, quiet operation is the most important consideration.

Motor is designed to use a definite type and size of capacitor which is permanently connected in the motor circuit and is suitable for continuous duty.

## G-E Single-Phase Motors

Types SCR and KC

¼ to 10 H.P., 60 Cycles, 220 Volts

The following list of ratings of types SCR and KC single phase motors cover sizes and designs which meet the majority of application requirements usually found in industry.

For additional information and for single phase motors with mechanical or electrical variations not provided for by the motors listed here refer to our nearest house.

H.P. at 40° C.	Frame No.	Sync. Speed R.P.M.	Type SCR Motor		Type KC Motor Only General Purpose and Fan Duty High Torque		Fan Duty Low Torque	
			Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each
¼	224	720	...	...	\$102	\$107	\$93	\$97
	225	600	...	...	115	121	106	110
⅓	224	900	...	...	79	83	70	74
	224	720	...	...	115	121	106	111
½	254	600	...	...	140	147	132	137
	224	900	\$77	\$81	91	96	81	85
	224	720	...	...	137	144	127	132
	254	600	...	...	151	159	142	146
¾	204	1200	60	64	83	87	71	75
	225	900	100	105	109	114	97	100
	225	720	...	...	154	162	142	146
	255	600	...	...	161	169	149	155
1	204	1800	46	50	85	89	71	75
	224	1200	77	81	100	105	87	91
	254	900	123	129	133	140	119	123
	254	720	...	...	185	194	172	178
1½	204	3600	75	79	108	113	91	95
	224	1800	57	61	104	109	87	91
	225	1200	100	105	125	130	106	110
	254	900	146	153	162	170	144	149
2	224	3600	92	97	131	138	110	114
	A225	1800	75	79	125	131	104	108
	254	1200	146	153	154	162	134	138
	255	900	175	184	196	206	177	182
3	224	3600	120	126	174	183	146	151
	A225	1800	96	101	166	174	138	142
	255	1200	174	184	209	219	182	186
	863	900	218	229	...	...	...	...
5	225	3600	146	153	246	258	203	208
	254	1800	150	158	236	248	197	202
	863	1200	218	229	...	...	...	...
	866	900	294	309	...	...	...	...
7½	846	3600	219	229	...	...	...	...
	863	1800	218	229	...	...	...	...
	868	1200	276	290	...	...	...	...
10	867	3600	...	291	...	...	...	...
	866	1800	271	285	...	...	...	...

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

Frame Nos. 204 to 225 inclusive, all speeds 1800 r.p.m. and lower, have wool-yarn-packed bearings. Speeds higher than 1800 r.p.m., also frame Nos. 254 and 255, all speeds, have oil-ring-lubricated sleeve bearings.

Where quiet operation is essential, sleeve-bearing motors should be quoted in preference to ball-bearing motors.

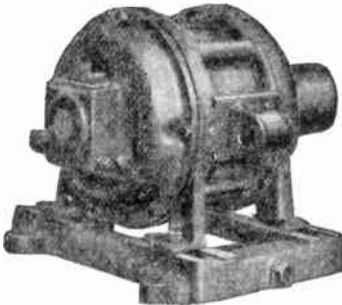
Voltage and frequencies other than listed, on application.



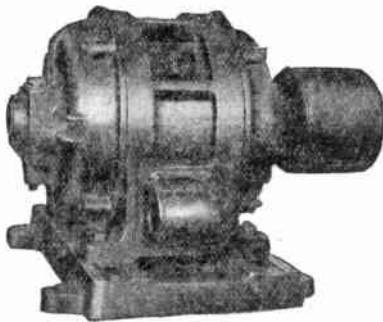
**G-E General Purpose Squirrel-Cage Induction Motors**

1/4 to 75 H.P., Constant-Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 40° C. Rise

**Type K—Normal Torque, Normal Starting Current**



1/2 to 15 H.P., 1800 R.P.M. Motor



15 to 75 H.P., 1800 R.P.M. Motor

This motor is usually applied to the large majority of constant-speed drives. It is the squirrel-cage motor best fitted for driving pumps, fans, blowers, line shafting and similar equipment requiring continuous operation with a fairly constant load.

**Type KF—Normal Torque, Low Starting Current**

The essential difference between the Type KF and the Type K motors is in the design of the rotor slot. The rotor in the Type KF motor is so designed as to give a low starting current, permitting the motor to be thrown directly across the line in sizes 30 h.p. and smaller. Obviously, this permits the use of a small, light, and compact magnetic starter. The Type KF motor may be applied to any drive for which the Type K motor is suitable. It should be chosen where it is desirable to keep the first cost of apparatus as low as possible or where limitations as to weight or space make it desirable to use as small and compact control as is possible.

**Type KG—High Torque, Low Starting Current**

Intended to supply the needs for motors having a higher per cent torque at starting than can be supplied by either Types K or KF motors with full voltage applied, yet having the per cent of starting current equal to or lower than the Type KF motor.

The Type KG motor is recommended for such drives as compressors without unloading valves, conveyors which must be started loaded, and other applications requiring high starting torque. The Type KG motor should be used only where the driven mechanism will not be injured by the sudden application of the starting torque of this motor. This caution applies especially to drives or driven machines utilizing belts (either flat belts or V-belts), chains or other flexible or slack elements.

**G-E General Purpose Squirrel-Cage Induction Motors**

1/4 to 10 H.P., Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 40° C. Rise

**Type K—Normal Torque, Normal Starting Current**

**Type KF—Normal Torque, Low Starting Current**

**Type KG—High Torque, Low Starting Current**  
110, 220, 440 and 550 Volts

H.P. at 40° C.	Frame No.	Sync. Speed R.P.M.	Type K		Type KF		Type KG		
			Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	
1/4	224	720	\$77	\$81	...	...	...	...	
	225	600	83	87	...	...	...	...	
	204	900	53	57	...	...	...	...	
1/2	224	720	86	90	...	...	...	...	
	225	600	92	97	...	...	...	...	
	204	1200	48	52	...	...	...	...	
3/4	224	900	63	67	...	...	...	...	
	225	720	94	99	...	...	...	...	
	254	600	102	107	...	...	...	...	
	284	514	122	128	...	...	...	...	
	1	67	3600	40	...	...	...	...	...
		204	1800	41	45	...	...	...	...
204		1200	52	56	...	...	...	...	
1 1/2	225	900	71	75	...	...	...	...	
	254	720	106	111	...	...	...	...	
	254	600	113	119	...	...	...	...	
	284	514	146	153	...	...	...	...	
				220, 440 and 550 Volts					
	2	*204	3600	57	61	...	...	...	...
		224	1800	52	56	...	...	...	...
		224	1200	61	65	...	...	...	...
		254	900	85	89	...	...	...	...
		254	720	122	128	...	...	...	...
284		600	127	133	...	...	...	...	
3	324	514	159	167	...	...	...	...	
	*224	3600	62	66	...	...	...	...	
	225	1800	57	61	...	...	...	...	
	225	1200	67	71	...	...	...	...	
	254	900	94	99	...	...	...	...	
	284	720	129	135	...	...	...	...	
	324	600	139	146	...	...	...	...	
	326	514	177	186	...	...	...	...	
5	*224	3600	71	75	...	...	...	...	
	225	1800	64	68	...	...	\$74	\$78	
	254	1200	81	85	...	...	93	98	
	284	900	109	114	...	...	125	131	
	234	720	139	146	...	...	...	...	
	326	600	162	170	...	...	...	...	
	365	514	197	207	...	...	...	...	
	*225	3600	88	92	...	...	...	...	
	254	1800	80	84	...	...	92	97	
	284	1200	103	108	...	...	118	124	
7 1/2	324	900	136	143	...	...	156	164	
	326	720	185	194	...	...	...	...	
	365	600	223	234	...	...	...	...	
	404	514	257	269	...	...	...	...	
	*254	3600	...	...	\$106	\$111	...	...	
	284	1800	98	103	103	108	113	119	
	324	1200	128	134	134	141	147	154	
	326	900	162	170	170	179	186	195	
	365	720	241	253	253	266	...	...	
	404	600	263	276	276	290	...	...	
10	405	514	310	326	...	...	...	...	
	*284	3600	...	...	127	133	...	...	
	324	1800	115	121	121	127	133	140	
	326	1200	151	159	159	167	174	183	
	365	900	188	197	197	207	216	227	
	404	720	272	286	286	300	...	...	
	405	600	301	316	316	332	...	...	
	444	514	357	375	...	...	...	...	

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

These standard 60-cycle open motors can in general be operated on 50-cycle circuits although they will not necessarily meet the standards established for 60-cycle operation and will have a slightly greater temperature rise than at 60 cycles. Synchronous speeds at 50 cycles will be 5/6 of those at 60 cycle. Control may be different.

\*Recommended only for direct connection and prices cover motors with standard straight short shafts.

## G-E General Purpose Squirrel-Cage Induction Motors

15 to 75 H.P., Constant Speed, 2 and 3-Phase, 60 Cycles, Continuous Duty, 40° C. Rise

Type K—Normal Torque, Normal Starting Current

Type KF—Normal Torque, Low Starting Current

Type KG—High Torque, Low Starting Current  
220, 440 and 550 Volts

H.P. at 40° C.	Frame No.	Sync. Speed R.P.M.	Type K		Type KF		Type KG	
			Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each	Sleeve Bearings Each	Ball Bearings Each
15	*324	3600	...	...	\$163	\$171	...	...
	326	1800	\$148	\$155	155	163	\$170	\$179
	365	1200	192	202	202	212	221	232
	404	900	232	244	244	256	267	280
	405	720	330	347	347	364	...	...
	444	600	367	385	385	404	...	...
	445	514	436	458	...	...	...	...
20	*326	3600	...	...	204	214	...	...
	364	1800	185	194	194	204	213	224
	404	1200	235	247	247	259	270	284
	405	900	281	295	295	310	323	339
	444	720	387	406	406	426	...	...
	445	600	430	451	451	474	...	...
	504	514	517	543	...	...	...	...
25	*364S	3600	...	...	242	254	...	...
	365	1800	219	230	230	242	252	265
	405	1200	271	285	285	299	312	328
	444	900	322	338	338	355	370	389
	445	720	433	455	455	478	...	...
	504	600	502	527	527	554	...	...
	505	514	578	607	...	...	...	...
30	*365S	3600	...	...	281	295	...	...
	405	1800	254	267	267	280	292	307
	444	1200	309	324	324	340	355	373
	445	900	362	380	380	399	416	437
	504	720	479	503	503	528	...	...
	505	600	530	557	557	585	...	...
40	*404S	3600	...	...	350	368	...	...
	444	1800	318	334	334	351	366	384
	445	1200	368	386	386	405	423	444
	504	900	432	454	454	477	497	522
	505	720	560	588	616	647	...	...
50	*405S	3600	...	...	414	435	...	...
	*445S	1800	376	395	395	415	432	454
	504	1200	421	442	442	464	484	508
	505	900	505	530	530	557	581	610
60	444Z	3600	...	...	495	520	...	...
	504S	1800	450	473	473	497	518	544
	505	1200	511	537	537	564	588	617
75	*445Z	3600	...	...	672	706	...	...
	*505S	1800	530	557	583	613	610	641

### 2200 Volts

30	444	1200	\$456	\$479	\$479	\$503	...	...
	445	900	532	559	559	587	...	...
	504	720	651	684	...	...	...	...
	505	600	698	732	...	...	...	...
40	444	1800	431	453	453	476	...	...
	445	1200	520	546	546	573	...	...
	504	900	607	637	637	669	...	...
	505	720	708	743	...	...	...	...
50	*445S	1800	491	516	516	542	...	...
	504	1200	576	605	605	635	...	...
	505	900	672	706	706	741	...	...
60	444Z	3600	...	...	606	636	...	...
	504S	1800	552	580	580	609	...	...
	505	1200	639	671	671	705	...	...
75	*445Z	3600	...	...	820	861	...	...
	*505S	1800	629	660	692	727	...	...

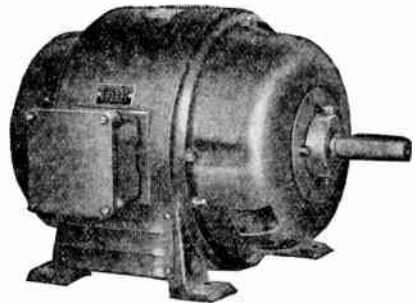
Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

These standard 60-cycle open motors can in general be operated on 50-cycle circuits although they will not necessarily meet the standards established for 60-cycle operation and will have a slightly greater temperature rise than at 60 cycles. Synchronous speeds at 50 cycles will be 5/6 of those at 60 cycle. Control may be different.

\*Recommended only for direct connection and prices cover motors with standard straight short shafts.

## G-E Type K Squirrel-Cage Splash-Proof Motors

Ball-Bearing—1/4 to 25 H.P., Constant Speed, 2 and 3-Phase, 60 Cycles



Typical of Frame Nos. 202-236

These motors are constructed to operate under conditions subject to dripping and splashing liquids, particularly in certain industries, such as dairies, meat packing plants, etc. where, for obvious reasons, it is necessary to "hose-down" the equipment regularly, at least once a day. Since in order to meet these conditions, these motors are constructed to exclude falling water or other materials coming directly at the motor, at an angle not exceeding 100° from the vertical, they can and have been used successfully out of doors without pump-house or other protection, in those localities where the hazards of climate are not greater than those encountered in the conditions for which they are designed.

### 110, 220, 440 and 550 Volts

H.P. at 50° C.	Frame No.	Sync. Speed R.P.M.	Each	H.P. at 50° C.	Frame No.	Sync. Speed R.P.M.	Each
	225	600	90.00		284	514	132.00
	204	900	59.00	1	204	1800	46.00
	224	720	93.00		204	1200	58.00
	225	600	100.00		225	900	77.00
	204	1200	54.00		254	720	114.00
	224	900	69.00		254	600	123.00
	225	720	102.00		284	514	158.00

220, 440 and 550 Volts							
H.P. at 50° C.	Frame No.	Sync. Speed R.P.M.	Each	H.P. at 50° C.	Frame No.	Sync. Speed R.P.M.	Each
1 1/2	*204	3600	\$63.00	7 1/2	324	1200	\$138.00
	224	1800	58.00		326	900	175.00
	224	1200	67.00		365	720	261.00
	254	900	92.00		404	600	284.00
	254	720	132.00		405	514	336.00
	284	600	137.00	10	324	1800	125.00
	324	514	172.00		326	1200	164.00
2	*224	3600	68.00		365	900	203.00
	225	1800	53.00		404	720	295.00
	225	1200	73.00		405	600	325.00
	254	900	102.00		444	514	386.00
	284	720	139.00	15	326	1800	160.00
	324	600	150.00		365	1200	208.00
	326	514	192.00		404	900	251.00
3	*224	3600	77.00		405	720	357.00
	225	1800	70.00		444	600	397.00
	254	1200	88.00		445	514	472.00
	284	900	117.00	20	364	1800	200.00
	324	720	150.00		404	1200	254.00
	326	600	175.00		405	900	304.00
	365	514	213.00		444	720	418.00
5	*225	3600	95.00		445	600	465.00
	254	1800	87.00		504	514	559.00
	284	1200	111.00	25	365	1800	237.00
	324	900	147.00		405	1200	294.00
	326	720	200.00		444	900	348.00
	365	600	241.00		445	720	469.00
	404	514	278.00		504	600	543.00
7 1/2	284	1800	106.00		505	514	625.00

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

\*These motors are recommended only for direct connection and prices cover motors with standard straight short shafts.

**G-E Totally-Enclosed Squirrel-Cage Induction Motors**

Fan-Cooled, Ball-Bearing, Constant Speed

1/2 to 5 H.P., 2 and 3-Phase, 60 Cycles

Type K

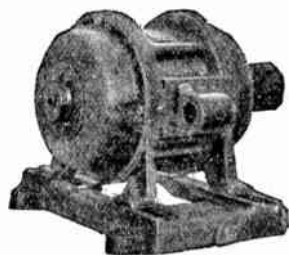


Types K or KF, Fan-Cooled  
Frame Nos. 224-326



Types K or KF, Fan-Cooled  
Frame Nos. 365-506

For those applications requiring totally-enclosed motors, the General Electric Company offers a standard (for sizes 1 1/2 h.p., 900 r.p.m. and smaller) totally-enclosed, non-ventilated motor. These motors have ample radiating surface to assure proper cooling without the use of external fans.



Type K, Non-Ventilated

For larger motors the standard is the totally-enclosed fan-cooled construction. The construction involves essentially a totally-enclosed motor surrounded by an external housing. A single fan, mounted between motor endshield and the external protecting endshield at the end opposite the shaft extension, draws air through the protecting screen,

forces it across the surface of the stator punchings and out the drive end, providing positive and direct ventilation. This design provides a strong and rigid construction and permits a greater output per pound of material than is possible with ordinary methods of total enclosure, with the result that the mounting dimensions of totally-enclosed fan-cooled motors are identical with those of open motors of the same rating in all except the largest sizes.

These motors are of special design to operate successfully under adverse conditions of abrasive dust, lint and moisture. When specified on order, motors will be furnished with Underwriters' label, indicating their suitability for Class II Group G hazardous dust locations.

110, 220, 440 and 550 Volts

H.P. at 55° C.	Frame No.	Sync. Speed R.P.M.	Type K Each	H.P. at 55° C.	Frame No.	Sync. Speed R.P.M.	Type K Each
1/2	204	900	*\$62.00	1	204	1800	*\$54.00
3/4	204	1200	*\$57.00		204	1200	*\$61.00
	224	900	*\$73.00		225	900	*\$81.00

220, 440 and 550 Volts

1 1/2	224	1800	*\$62.00	3	254	1200	\$117.00
	224	1200	*\$70.00		284	900	157.00
	254	900	*\$97.00		234	720	208.00
2	224	3600	93.00	5	326	600	229.00
	225	1800	87.00		225	3600	119.00
	225	1200	98.00		254	1800	116.00
	254	900	131.00		284	1200	151.00
	284	720	177.00		324	900	202.00
3	324	600	207.00	326	720	252.00	
	224	3600	102.00	365	600	319.00	
	225	1800	96.00	...	...	.....	

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

\*Enclosed non-ventilated frames.

**G-E Totally-Enclosed Squirrel-Cage Induction Motors**

Fan-Cooled, Ball-Bearing, Constant Speed

7 1/2 to 75 H.P., 2 and 3-Phase, 60 Cycles

Types K and KF  
220, 440 and 550 Volts

H.P. at 55° C.	Frame No.	Sync. Speed R.P.M.	Type K Each	Type KF Each	
7 1/2	254	3600	.....	\$143.00	
	284	1800	\$151.00	151.00	
	324	1200	202.00	202.00	
	326	900	237.00	237.00	
	365	720	336.00	336.00	
	404	600	390.00	390.00	
10	284	3600	.....	175.00	
	324	1800	189.00	189.00	
	326	1200	226.00	226.00	
	365	900	294.00	294.00	
	404	720	399.00	399.00	
	405	600	428.00	428.00	
15	324	3600	.....	230.00	
	326	1800	223.00	223.00	
	365	1200	298.00	298.00	
	404	900	371.00	371.00	
	405	720	456.00	456.00	
	444	600	635.00	635.00	
20	326	3600	.....	271.00	
	364	1800	293.00	293.00	
	404	1200	375.00	375.00	
	405	900	424.00	424.00	
	444	720	672.00	672.00	
	445	600	744.00	744.00	
25	364S	3600	.....	341.00	
	365	1800	329.00	329.00	
	405	1200	414.00	414.00	
	444	900	557.00	557.00	
	445	720	750.00	750.00	
	504	600	950.00	950.00	
30	365S	3600	.....	410.00	
	405	1800	396.00	396.00	
	444	1200	536.00	536.00	
	445	900	629.00	629.00	
	504	720	908.00	908.00	
	505	600	1004.00	1004.00	
40	404S	3600	.....	542.00	
	444	1800	526.00	542.00	
	445	1200	606.00	624.00	
	504	900	779.00	801.00	
	505	720	1010.00	1066.00	
	50	405S	3600	.....	696.00
445S		1800	678.00	697.00	
504		1200	760.00	780.00	
505		900	908.00	933.00	
60		444Z	3600	.....	832.00
		504S	1800	811.00	834.00
	505	1200	920.00	945.00	
	75	445Z	3600	.....	1153.00
		505S	1800	1060.00	1113.00
		2200 Volts			
30		444	1200	\$684.00	\$684.00
		445	900	800.00	800.00
		504	720	1079.00	1079.00
40	505	600	1172.00	1172.00	
	444	1800	639.00	661.00	
	445	1200	759.00	785.00	
50	504	900	955.00	985.00	
	505	720	1158.00	1016.00	
	445S	1800	793.00	817.00	
60	504	1200	915.00	1065.00	
	505	900	1074.00	1108.00	
	444Z	3600	.....	944.00	
75	504S	1800	912.00	940.00	
	505	1200	1048.00	1079.00	
	445Z	3600	.....	1302.00	
	505S	1800	1159.00	1222.00	

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.



## G-E Totally-Enclosed Squirrel-Cage Induction Motors

**Fan-Cooled, Ball-Bearing, Explosion-Proof  
For Class I, Group D, Hazardous Gas Conditions  
Constant Speed, 2 and 3-Phase, 60 Cycles**

### Types K and KF

The General Electric Company has a complete line of explosion-proof motors for Class I Group D hazardous gas conditions as defined by the National Electric Code. In sizes 1½ h.p., 900 r.p.m. and smaller these motors are built in totally-enclosed, non-ventilated frames. In larger sizes they are built in totally-enclosed, fan-cooled frames. These motors have been tested and listed by Underwriters' Laboratories and are furnished with a label indicating their suitability for those locations where gas involved is no more hazardous than high-test gasoline vapor.

#### 220, 440 and 550 Volts

H.P. at 55° C.	Frame No.	Sync. Speed R.P.M.	Type K Each	Type KF Each	Approx. Ship. Wt., Lbs.	
1/2	*204	900	\$82.00	.....	65	
	*224	720	114.00	.....	90	
	*225	600	121.00	.....	110	
3/4	*204	1200	77.00	.....	65	
	*224	900	93.00	.....	90	
	*225	720	125.00	.....	110	
1	254	600	133.00	.....	190	
	*204	3600	93.00	.....	65	
	*204	1800	75.00	.....	65	
	*204	1200	81.00	.....	65	
	*225	900	120.00	.....	110	
1 1/2	254	720	165.00	.....	190	
	254	600	171.00	.....	190	
	*224	3600	99.00	.....	90	
	*224	1800	100.00	.....	90	
	*225	1200	110.00	.....	110	
2	*254	900	143.00	.....	140	
	254	720	182.00	.....	190	
	284	600	200.00	.....	270	
	224	3600	111.00	.....	120	
	225	1800	105.00	.....	130	
	225	1200	116.00	.....	130	
	254	900	152.00	.....	190	
	284	720	201.00	.....	270	
	324	600	238.00	.....	340	
	224	3600	120.00	.....	120	
3	225	1800	114.00	.....	130	
	254	1200	139.00	.....	190	
	284	900	182.00	.....	270	
	324	720	234.00	.....	340	
	326	600	260.00	.....	410	
	225	3600	137.00	.....	130	
5	254	1800	138.00	.....	190	
	284	1200	175.00	.....	270	
	324	900	234.00	.....	340	
	326	720	284.00	.....	410	
	365	600	364.00	.....	770	
	254	3600	.....	\$165.00	.....	190
7 1/2	284	1800	175.00	.....	270	
	324	1200	234.00	234.00	340	
	326	900	269.00	269.00	410	
	365	720	381.00	.....	770	
	404	600	450.00	.....	930	
	284	3600	.....	198.00	.....	270
	324	1800	220.00	220.00	340	
	326	1200	258.00	258.00	410	
10	365	900	339.00	339.00	770	
	404	720	460.00	.....	930	
	405	600	489.00	.....	1000	

## G-E Totally-Enclosed Squirrel-Cage Induction Motors

**Fan-Cooled, Ball-Bearing, Explosion-Proof  
For Class I, Group D, Hazardous Gas Conditions  
Constant Speed, 2 and 3-Phase, 60 Cycles**

### Types K and KF

#### 220, 440 and 550 Volts

H.P. at 55° C.	Frame No.	Sync. Speed R.P.M.	Type K Each	Type KF Each	Approx. Ship. Wt., Lbs.	
15	324	3600	.....	\$261.00	340	
	326	1800	\$254.00	254.00	410	
	365	1200	342.00	342.00	770	
	404	900	432.00	432.00	930	
	405	720	517.00	.....	1000	
	444	600	726.00	.....	1250	
20	365S	3600	.....	316.00	730	
	364	1800	338.00	338.00	710	
	404	1200	436.00	436.00	930	
	405	900	484.00	484.00	1000	
	444	720	762.00	.....	1250	
	445	600	835.00	.....	1370	
25	404S	3600	.....	386.00	950	
	365	1800	374.00	374.00	770	
	405	1200	474.00	474.00	1000	
	444	900	647.00	647.00	1250	
	445	720	841.00	.....	1370	
	505	600	1041.00	.....	1820	
30	405S	3600	.....	471.00	950	
	405	1800	456.00	456.00	1000	
	444	1200	627.00	627.00	1250	
	445	900	720.00	720.00	1370	
	505	720	998.00	.....	1820	
	506	600	1095.00	.....	2050	
40	444Z	3600	.....	630.00	1270	
	444	1800	617.00	633.00	1250	
	445	1200	697.00	715.00	1370	
	505	900	810.00	892.00	1820	
	506	720	1101.00	.....	2050	
	50	445Z	3600	.....	188.00	1390
444S		1800	768.00	788.00	1270	
505		1200	851.00	871.00	1820	
506		900	998.00	1024.00	2050	
60		505Z	3600	922.00	.....	1870
		505S	1800	901.00	924.00	1870
	506	1200	1010.00	1036.00	2050	
75	506Z	3600	.....	1244.00	2050	
	506S	1800	1151.00	1204.00	2050	
2200 Volts						
40	504Z	3600	.....	\$777.00	1660	
	504	1800	\$730.00	751.00	1600	
	505	1200	849.00	876.00	1820	
	506	900	1045.00	1074.00	2050	
50	505Z	3600	.....	915.00	1870	
	505S	1800	883.00	908.00	1870	
	506	1200	1006.00	1035.00	2050	
60	6325	900	1165.00	1199.00	2760	
	506Z	3600	1039.00	.....	2050	
	506S	1800	1003.00	1031.00	2050	
75	506	1200	1039.00	1170.00	2050	
	506Z	3600	.....	1393.00	2050	
506S	1800	1250.00	1313.00	2050		

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

All motors listed above may be started with full-voltage, but the Type K at all speeds, and the Type KF 20 and 30-h.p. at 3600 r.p.m. as well as 40-h.p. and larger sizes at all speeds, have starting current values slightly exceeding N.E.L.A. recommendations. Reduced-voltage starting is a requirement of many operating companies; therefore, before quoting, be sure that full-voltage starting will be acceptable to those supplying the power.

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

\*Totally-enclosed non-ventilated.

All motors listed above may be started with full-voltage, but the Type K, 7½ and 10-h.p. motors have starting current values slightly exceeding N.E.L.A. recommendations. Reduced-voltage starting is a requirement of many operating companies; therefore, before quoting, be sure that full-voltage starting will be acceptable to those supplying the power.

**G-E General Purpose Gear Motors**

40° C., Continuous Rated

Types K, KG and M—2 and 3-Phase, 60 Cycles, 220, 440 and 550 Volts

Type B—D.C., Shunt-Wound, 115 or 230 Volts

Type SCR—Single-Phase, 60 Cycles, 110-220 Volts

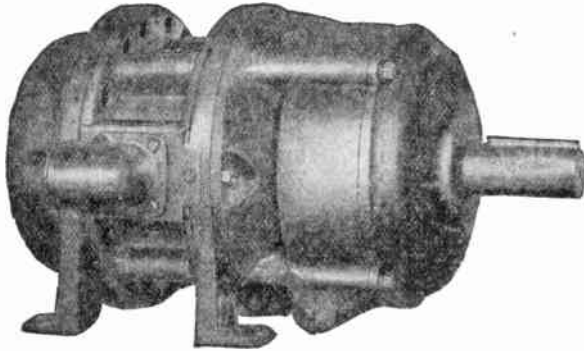
**G-E General Purpose Gear Motors**

40° C., Continuous Rated

Types K, KG and M—2 and 3-Phase, 60 Cycles, 220, 440 and 550 Volts

Type B—D.C., Shunt-Wound, 115 or 230 Volts

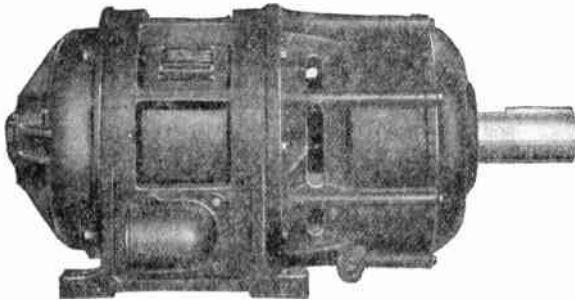
Type SCR—Single-Phase, 60 Cycles, 110-220 Volts



Typical of Riveted-Frame, Squirrel-Cage Induction Designs, Single-Reduction

The G-E Gear Motor consists of a highly efficient straight-line helical gear reduction unit built into the end frame of a standard ball-bearing, normal speed motor. Connection to the driven machine may be either direct, or through a belt, chain or gear. The listed low speed r.p.m. are based on 1800 r.p.m. synchronous speed and full load r.p.m. will be slightly lower depending on the variation of full load motor speed from synchronous speed. Access to entire gear mechanism is obtained by removing front cover plate. Gears run in oil. Oil is kept in and dust kept out by felt shields on shaft apertures. Pinions are of G-E Textolite and with helical gears eliminate the noises associated with geared speed reduction.

Gear motors may be furnished for vertical or flange mounting and with all mechanical and electrical modifications available with standard general purpose motors.



Typical of Skeleton-Frame, Squirrel-Cage Induction Designs, Single-Reduction

In applying gear motors the following information should be obtained and sent with order:

Torque—starting (high) (low); accelerating (high) (low); running: constant torque, constant speed, adjustable speed; variable torque, periodic; intermittent, varies with speed, give duty cycle, including time and magnitude.

Speed—constant, variable, adjustable.

Load—continuous (8 to 10 hours daily) (24 hours daily); intermittent, frequent starts and sudden stops, reversing.

Method of drive—directly mounted, coupled, belt or chain (give type of belting and relative position of shafts), pinion. Space limitations.

Ambient conditions—hazards, temperature, protection, atmosphere (abrasive) (corrosive) (explosive) (excessive moisture).

Attention—regular (skilled), uncertain.

The normal control for the type of motor involved should be selected from the standard G-E control shown on other pages of this catalogue.

H.P. 40° C. Cont.	Gear Motor Frame	Low Speed R.P.M.	Type K Each	Type KG Each	Type M Each	Type B Each	Type SCR Each
3/4	202124	600, 572, 540, 507	\$71	...	...	\$105	\$75
	202124	475, 438, 396, 360	73	...	...	107	77
	202124	323, 300, 273, 243	77	...	...	111	81
	202128	225, 200, 174, 154	83	...	...	117	87
	202224	145, 135, 124, 114	89	...	...	123	93
	202228	103, 93, 83, 71	100	...	...	134	104
	202332	63.5, 56.5, 49, 43.5	113	...	...	147	117
	202332	40.5, 37.5, 34, 31	122	...	...	156	126
	202336	27.5, 25.5, 23, 21	133	...	...	167	137
	202340	19.5, 17, 15, 13	150	...	...	184	154
1	204124	600, 572, 540, 507	84	...	...	121	94
	204124	475, 438, 396, 360	86	...	...	123	96
	204128	323, 300, 273, 243	90	...	...	127	100
	204132	225, 200, 174, 154	98	...	...	135	108
	204228	145, 135, 124, 114	107	...	...	144	117
	204232	103, 93, 83, 71	119	...	...	156	129
	204332	63.5, 56.5, 49, 43.5	135	...	...	172	145
	204336	40.5, 37.5, 34, 31	145	...	...	182	155
	204340	27.5, 25.5, 23, 21	160	...	...	197	170
	204344	19.5, 17, 15, 13	180	...	...	217	190
1 1/2	224128	600, 572, 540, 507	97	...	\$162	139	116
	224128	475, 438, 396, 360	100	...	165	142	119
	224132	323, 300, 273, 243	106	...	171	148	125
	224136	225, 200, 174, 154	116	...	181	158	135
	224232	145, 135, 124, 114	124	...	189	166	143
	224236	103, 93, 83, 71	140	...	205	182	159
	224340	63.5, 56.5, 49, 43.5	159	...	224	201	178
	224340	40.5, 37.5, 34, 31	173	...	238	215	192
	224344	27.5, 25.5, 23, 21	191	...	256	223	210
	224348	19.5, 17, 15, 13	215	...	280	247	234
2	*225132	600, 572, 540, 507	110	...	175	158	140
	*225132	475, 438, 396, 360	112	...	177	160	142
	*225136	323, 300, 273, 243	119	...	184	167	149
	*225140	225, 200, 174, 154	130	...	195	178	160
	*225236	145, 135, 124, 114	140	...	205	188	170
	*225240	103, 93, 83, 71	158	...	223	206	188
	*225340	63.5, 56.5, 49, 43.5	181	...	246	229	211
	*225344	40.5, 37.5, 34, 31	197	...	262	245	227
	*225348	27.5, 25.5, 23, 21	219	...	284	267	249
	*225352	19.5, 17, 15, 13	249	...	314	297	279
3	225136	600, 572, 540, 507	123	\$133	198	190	174
	225136	475, 438, 396, 360	126	136	201	193	177
	225140	323, 300, 273, 243	133	143	208	200	184
	225144	225, 200, 174, 154	145	155	220	212	196
	225240	145, 135, 124, 114	156	166	231	223	207
	225244	103, 93, 83, 71	177	187	252	244	228
	225344	63.5, 56.5, 49, 43.5	204	214	279	271	255
	225348	40.5, 37.5, 34, 31	224	234	299	291	275
	225352	27.5, 25.5, 23, 21	249	259	324	316	300
	225356	19.5, 17, 15, 13	285	295	360	352	336
5	254140	600, 572, 540, 507	147	160	238	276	233
	254140	475, 438, 396, 360	150	163	241	279	236
	254144	323, 300, 273, 243	158	171	249	287	244

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

\*For Type SCR motors, frame is A-225.

All types of gear motors are suitable for operation with standard listed controllers. Where full-voltage starting is used to obtain maximum starting torque of motor, the number of starts should be limited to 4 to 6 per day.

## G-E General Purpose Gear Motors

40° C., Continuous Rated

Types K, KF, KG and M—2 and 3-Phase, 60 Cycles,  
220, 440 and 550 Volts

Type B—D.C., Shunt-Wound, 115 or 230 Volts

Type SCR—Single-Phase, 60 Cycles, 110-220 Volts

(Continued)

H.P. 40° C. Cont.	Gear Motor Frame	Low Speed R.P.M.	Type K Each	Type KF Each	Type KG Each	Type M Each	Type B Each	Type SCR Each
5	254148	225, 200, 174, 154	\$172	...	\$185	\$263	\$301	\$258
	254244	145, 135, 124, 114	184	...	197	275	313	270
	254248	103, 93, 83, 71	211	...	224	302	340	297
	254348	63.5, 56.5, 49, 43.5	244	...	257	335	373	330
	254352	40.5, 37.5, 34, 31	269	...	282	360	398	355
	254356	27.5, 25.5, 23, 21	301	...	314	392	430	387
	254360	19.5, 17, 15, 13	348	...	361	439	477	434
7½	284144	600, 572, 540, 507	178	\$183	194	282	333	...
	284144	475, 438, 396, 360	183	188	199	287	338	...
	284148	323, 300, 273, 243	194	199	210	298	349	...
	284152	225, 200, 174, 154	212	217	228	316	367	...
	284248	145, 135, 124, 114	228	233	244	332	383	...
	284252	103, 93, 83, 71	261	266	277	365	416	...
	284352	63.5, 56.5, 49, 43.5	302	307	318	406	457	...
	284356	40.5, 37.5, 34, 31	335	340	351	439	490	...
	284360	27.5, 25.5, 23, 21	378	383	394	482	533	...
	284364	19.5, 17, 15, 13	437	442	453	541	592	...
10	324148	600, 572, 540, 507	221	227	238	342	...	...
	324148	475, 438, 396, 360	228	234	245	349	...	...
	324152	323, 300, 273, 243	240	246	257	361	...	...
	324156	225, 200, 174, 154	261	267	278	382	...	...
	324252	145, 135, 124, 114	279	285	296	400	...	...
	324256	103, 93, 83, 71	323	329	340	444	...	...
	324356	63.5, 56.5, 49, 43.5	379	385	396	500	...	...
	324360	40.5, 37.5, 34, 31	421	427	438	542	...	...
	324364	27.5, 25.5, 23, 21	475	481	492	596	...	...
	324368	19.5, 17, 15, 13	555	561	572	676	...	...
15	326152	600, 572, 540, 507	274	281	297	456	...	...
	326152	475, 438, 396, 360	281	288	304	463	...	...
	326156	323, 300, 273, 243	298	305	321	480	...	...
	326160	225, 200, 174, 154	324	331	347	506	...	...
	326256	145, 135, 124, 114	350	357	373	532	...	...
	326260	103, 93, 83, 71	405	412	428	587	...	...
	326360	63.5, 56.5, 49, 43.5	474	481	497	656	...	...
	326364	40.5, 37.5, 34, 31	527	534	550	709	...	...
	326368	27.5, 25.5, 23, 21	596	603	619	778	...	...
	326372	19.5, 17, 15, 13	694	701	717	886	...	...
20	364156	600, 572, 540, 507	326	335	355	534	...	...
	364156	475, 438, 396, 360	337	346	366	545	...	...
	364160	323, 300, 273, 243	360	369	389	568	...	...
	364164	225, 200, 174, 154	396	405	425	604	...	...
	364260	145, 135, 124, 114	430	439	459	638	...	...
	364264	103, 93, 83, 71	501	510	530	709	...	...
	364364	63.5, 56.5, 49, 43.5	592	601	621	800	...	...
	364368	40.5, 37.5, 34, 31	664	673	693	872	...	...
	364372	27.5, 25.5, 23, 21	760	769	789	968	...	...
	364376	19.5, 17, 15, 13	890	899	919	1098	...	...
25	365156	600, 572, 540, 507	361	373	395	585	...	...
	365156	475, 438, 396, 360	373	385	407	597	...	...
	365160	323, 300, 273, 243	400	412	434	624	...	...
	365164	225, 200, 174, 154	443	455	477	667	...	...
	365260	145, 135, 124, 114	483	495	517	707	...	...
	365264	103, 93, 83, 71	565	577	599	789	...	...

## G-E General Purpose Gear Motors

40° C., Continuous Rated

Types K, KF, KG and M—2 and 3-Phase, 60 Cycles,  
220, 440 and 550 Volts

(Continued)

H.P. 40° C. Cont.	Gear Motor Frame	Low Speed R.P.M.	Type K Each	Type KF Each	Type KG Each	Type M Each
25	365368	63.5, 56.5, 49, 43.5	\$670	\$682	\$704	\$894
	365372	40.5, 37.5, 34, 31	750	762	784	974
	365376	27.5, 25.5, 23, 21	855	867	889	1079
	365380	19.5, 17, 15, 13	1000	1012	1034	1124
30	405160	600, 572, 540, 507	415	428	455	650
	405160	475, 438, 396, 360	432	445	472	667
	405164	323, 300, 273, 243	467	480	507	702
	405168	225, 200, 174, 154	521	534	561	756
	405264	145, 135, 124, 114	570	583	610	805
	405268	103, 93, 83, 71	670	683	710	905
	405368	63.5, 56.5, 49, 43.5	790	803	830	1025
	405372	40.5, 37.5, 34, 31	890	903	930	1125
	405376	27.5, 25.5, 23, 21	1020	1033	1060	1255
	405380	19.5, 17, 15, 13	1200	1213	1240	1435
	444164	600, 572, 540, 507	482	499	532	742
	444164	475, 438, 396, 360	500	517	550	760
	444168	323, 300, 273, 243	538	555	588	798
	444172	225, 200, 174, 154	598	615	648	858
	444268	145, 135, 124, 114	650	667	700	910
	444272	103, 93, 83, 71	765	782	815	1025
	444372	63.5, 56.5, 49, 43.5	915	932	965	1175
	444376	40.5, 37.5, 34, 31	1030	1047	1080	1290
	444380	27.5, 25.5, 23, 21	1180	1197	1230	1440
	444384	19.5, 17, 15, 13	1400	1417	1450	1660
50	445164	600, 572, 540, 507	558	577	617	838
	445164	475, 438, 396, 360	580	599	639	860
	445168	323, 300, 273, 243	620	639	679	900
	445172	225, 200, 174, 154	695	714	754	975
	445268	145, 135, 124, 114	755	774	814	1035
	445272	103, 93, 83, 71	895	914	954	1175
	445376	63.5, 56.5, 49, 43.5	1070	1089	1129	1350
	445380	40.5, 37.5, 34, 31	1210	1229	1269	1490
	445380	27.5, 25.5, 23, 21	1390	1409	1449	1670
	445384	19.5, 17, 15, 13	1650	1669	1709	1930
60	504168	600, 572, 540, 507	690	714	760	972
	504168	475, 438, 396, 360	720	744	790	1002
	504172	323, 300, 273, 243	775	799	845	1057
	504176	225, 200, 174, 154	865	889	935	1147
	504272	145, 135, 124, 114	945	969	1015	1227
	504276	103, 93, 83, 71	1120	1144	1190	1402
	504376	63.5, 56.5, 49, 43.5	1330	1354	1400	1612
	504380	40.5, 37.5, 34, 31	1490	1514	1560	1772
	504384	27.5, 25.5, 23, 21	1700	1724	1770	1982
75	505168	600, 572, 540, 507	795	850	878	1105
	505168	475, 438, 396, 360	835	890	918	1145
	505172	323, 300, 273, 243	910	965	993	1220
	505176	225, 200, 174, 154	1030	1085	1113	1340
	505272	145, 135, 124, 114	1140	1195	1223	1450
	505276	103, 93, 83, 71	1340	1395	1423	1650
	505380	63.5, 56.5, 49, 43.5	1600	1655	1683	1910
	505384	40.5, 37.5, 34, 31	1800	1855	1883	2110
	505384	27.5, 25.5, 23, 21	2060	2115	2143	2370

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

All types of gear motors are suitable for operation with standard listed controllers. Where full-voltage starting is used to obtain maximum starting torque of motor, the number of starts should be limited to 4 to 6 per day.

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

All types of gear motors are suitable for operation with standard listed controllers. Where full-voltage starting is used to obtain maximum starting torque of motor, the number of starts should be limited to 4 to 6 per day.



G-E General Purpose Synchronous Motors

High Speed, 60 Cycles  
 1.0 Power-Factor—40° C. Stator and Rotor  
 0.8 Power-Factor—40° C. Stator, 50° C. Rotor

Type TS (3-Phase)—Type QS (2-Phase)

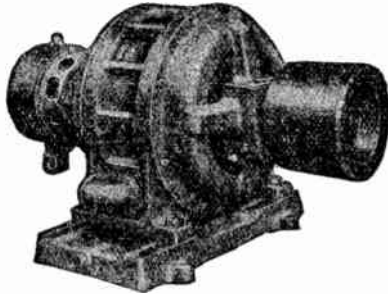
7500 Series—Form BL (except 1800 R.P.M.)—

Skeleton Frame, Sleeve Bearings

7500 Series—Form EL (1800 R.P.M.)—Closed Box Frame (with Air Intake and Discharge Openings)

Sleeve Bearings

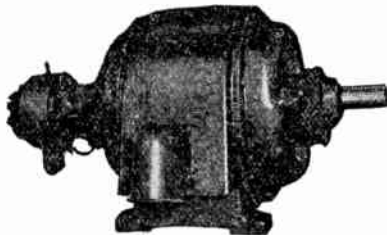
7600 Series—Form AL, Cast Frame, Sleeve Bearings



Form BL—25 to 600 H.P., at 1200 R.P.M.

Developed to fill the need for a synchronous motor which could be recommended for most general purpose applications, in the same way that a squirrel-cage induction motor is recommended—that is, without a detailed study of the requirements of this application. For this reason, in the line of general purpose synchronous motors, there were incorporated high starting torque, overload capacity, mechanical simplicity, and reliability of G-E squirrel-cage motors.

Since the exciter is direct connected and overhung on the motor end shield, the general purpose synchronous motors form complete and compact units which like the squirrel-cage induction motors, merely require connection to the a. c. power supply.



Form EL—75 to 450 H.P. at 1800 R.P.M.

H.P.	Speed R.P.M.	Volts	Unity Power-Factor			0.8 Power-Factor		
			Frame No.	Motor Only Each	Ex-citer Each	Frame No.	Motor Only Each	Ex-citer Each
20	1200	220	.....	.....	.....	7522	\$570	\$149
		440-550	.....	.....	.....	7522	601	149
		2200	.....	.....	.....	7526	583	149
25	1200	220	7522	\$570	\$149	7526	583	149
		440-550	7522	601	149	7526	614	149
		2200	.....	.....	.....	7532	670	252
30	1200	220	7526	583	149	7532	711	252
		440-550	7526	583	149	7532	607	149
		2200	7532	670	252	7532	639	149
40	1800	220	7532	670	252	7536	712	252
		440-550	7532	711	252	7536	749	252
		2200	.....	.....	.....	7542	837	288
40	1800	220	.....	.....	.....	7542	881	288
		440-550	.....	.....	.....	*.....	1030	128
		2200	.....	.....	.....	*.....	1085	128
40	1200	220	7532	607	149	7536	638	173
		440-550	7532	607	149	7536	672	173
		2200	.....	.....	.....	7536	638	173

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

\*For direct connection. Not recommended for belt drive.

G-E General Purpose Synchronous Motors

High Speed, 60 Cycles  
 1.0 Power-Factor—40° C. Stator and Rotor  
 0.8 Power-Factor—40° C. Stator, 50° C. Rotor

Type TS (3-Phase)—Type QS (2-Phase)

7500 Series—Form BL (except 1800 R.P.M.)—

Skeleton Frame, Sleeve Bearings

7500 Series—Form EL (1800 R.P.M.)—Closed Box Frame (with Air Intake and Discharge Openings)

Sleeve Bearings

7600 Series—Form AL, Cast Frame, Sleeve Bearings

(Continued)

H.P.	Speed R.P.M.	Volts	Unity Power-Factor			0.8 Power-Factor		
			Frame No.	Motor Only Each	Ex-citer Each	Frame No.	Motor Only Each	Ex-citer Each
40	900	220	7536	\$712	\$252	7542	\$748	\$252
		440-550	7536	749	252	7542	788	252
		2200	7542	837	288	7546	878	323
40	720	220	7542	881	288	7546	932	323
		440-550	.....	.....	.....	7552	1043	363
		2200	.....	.....	.....	7552	1098	363
50	1800	220	*.....	1030	128	*.....	1067	128
		440-550	.....	.....	.....	7552	1098	363
		2200	*.....	1085	128	*.....	1123	128
50	1200	220	7536	638	173	7536	656	173
		440-550	7536	672	173	7536	691	173
		2200	7542	748	252	7546	796	289
50	1200	220	7542	788	252	7546	837	289
		440-550	7542	788	252	7546	837	289
		2200	7546	878	323	7552	936	323
50	720	220	7546	878	323	7552	936	323
		440-550	7546	923	323	7552	986	323
		2200	7552	1043	363	7556	1101	363
60	1800	220	7552	1098	363	7556	1170	363
		440-550	*.....	1067	128	*7547	1195	128
		2200	*.....	1123	128	*7547	1195	128
60	1200	220	7536	656	173	7541	755	173
		440-550	7536	691	173	7541	755	173
		2200	7546	796	289	7546	862	289
60	1200	220	7546	796	289	7546	862	289
		440-550	7546	837	289	7546	862	289
		2200	7552	936	323	7552	1000	384
60	720	220	7552	986	323	7552	1000	384
		440-550	7552	1101	363	7556	1179	427
		2200	7552	1101	363	7556	1179	427
75	1800	220	7552	1170	363	7556	1179	427
		440-550	*7543	1195	128	*7549	1317	128
		2200	*7543	1195	128	*7549	1317	128
75	1200	220	7541	755	173	7545	876	252
		440-550	7541	755	173	7545	876	252
		2200	7546	862	289	7552	974	289
75	900	220	7546	862	289	7552	974	289
		440-550	7546	862	289	7552	974	289
		2200	7552	1000	323	7556	1106	384
75	720	220	7552	1000	323	7556	1106	384
		440-550	7552	1000	323	7556	1106	384
		2200	7556	1179	427	7558	1295	427
100	1800	220	7556	1179	427	7558	1295	427
		440-550	*7547	1317	128	*7557	1432	128
		2200	*7547	1317	128	*7557	1432	128
100	1200	220	*7545	876	252	*7552	976	252
		440-550	*7545	876	252	*7552	976	252
		2200	7552	974	289	7556	1095	329
100	900	220	7552	974	289	7556	1095	329
		440-550	7552	974	289	7556	1095	329
		2200	7552	974	289	7556	1095	329

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

\*For direct connection. Not recommended for belt drive.

## G-E General Purpose Synchronous Motors

High Speed, 60 Cycles  
 1.0 Power-Factor—40° C. Stator and Rotor  
 0.8 Power-Factor—40° C. Stator, 50° C. Rotor  
 Type TS (3-Phase)—Type QS (2-Phase)  
 7500 Series—Form BL (except 1800 R.P.M.)—  
 Skeleton Frame, Sleeve Bearings  
 7500 Series—Form EL (1800 R.P.M.)—Closed Box  
 Frame (with Air Intake and Discharge Openings)  
 Sleeve Bearings  
 7600 Series—Form AL, Cast Frame, Sleeve Bearings

H.P.	Speed R.P.M.	Volts	(Continued)			0.8 Power-Factor			
			Frame No.	Motor Only Each	Ex- citer Each	Frame No.	Motor Only Each	Ex- citer Each	
100	720	220	7556	\$1106	\$323	7558	\$1210	\$384	
		440-550 2200							
	600	220	7558	1295	427	7641	1398	427	
		440-550 2200							
	514	220	7558	1506	485	7641	1597	613	
		440-550 2200							
	125	1800	220	*7549	1432	128	*7559	1549	146
			440-550 2200						
	1200	220	*7552	976	252	*7556	1085	292	
			440-550 2200						
	900	220	7556	1095	289	7556	1210	329	
			440-550 2200						
720	220	7558	1210	323	7632	1307	384		
		440-550 2200							
600	220	7558	1398	427	7641	1487	543		
		440-550 2200							
514	220	7641	1597	485	7651	1680	613		
		440-550 2200							
150	1800	220	*7557	1549	128	*7559	1742	146	
		440-550 2200							
1200	220	*7556	1085	252	*7558	1289	292		
		440-550 2200							
900	220	*7556	1210	289	*7558	1416	329		
		440-550 2200							
720	220	7632	1307	323	7641	1537	480		
		440-550 2200							
600	220	7641	1487	427	7644	1700	543		
		440-550 2200							
514	220	7651	1680	485	7651	1863	613		
		440-550 2200							
200	1800	220	*7559	1742	146	†....	†....	†...	
		440-550 2200							
1200	220	*7558	1289	252	†....	†....	†...		
		440-550 2200							
900	220	*7558	1416	329	†....	†....	†...		
		440-550 2200							
720	220	7641	1537	384	†....	†....	†...		
		440-550 2200							
600	220	7644	1700	427	†....	†....	†...		
		440-550 2200							
514	220	7651	1863	485	†....	†....	†...		
		440-550 2200							

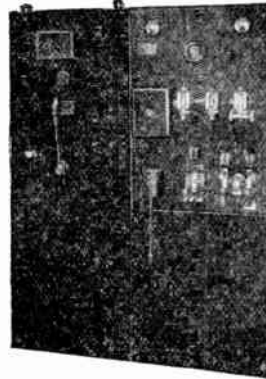
Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.  
 \*For direct connection. Not recommended for belt drive.  
 †Prices and other information upon application.

## G-E Synchronous Motor Controllers

2 or 3-Phase, 3-Wire 50 or 60 Cycles

Undervoltage Protection on Low-Voltage Panels  
 (600 Volts Maximum)

Time-Delay Undervoltage Protection on High-Voltage Panels  
 (Above 600 Volts)



Typical Reduced-Voltage Semi-Magnetic Controller CR7062 for High-Voltage Application (Above 600 Volts)

Available in 4 types: Full-voltage, magnetic; full-voltage, semi-magnetic; reduced-voltage, magnetic; reduced-voltage, semi-magnetic. Magnetic controllers are controlled by push buttons, whereas semi-magnetic controllers are equipped with manual starting devices. Both types have automatic field application and removal equipment.

The following equipment is common to all types: A.C. line ammeter; d.c. field-ammeter; field applying contactor and field discharge contactor with discharge resistor; sequencing relays for maintaining the proper sequence in application and removal of field excitation; power-factor field-removal relay which operates on lagging power-factors to remove field excitation during the first slip-cycle out of synchronism; stator temperature overload relay and temperature squirrel-cage protective relay; drilling for exciter field rheostat.

The full-voltage magnetic controllers employ a magnetically operated contactor for connecting the motor to the line, and the semi-magnetic type is equipped with a manually-operated circuit breaker.

Reduced-voltage magnetic controllers are furnished with starting and running contactors and an auto-transformer for supplying reduced voltage to the motor in starting. The accelerating time is automatically determined by a telechron-motor-operated transfer relay, which is adjustable.

The reduced-voltage semi-magnetic controllers are similar to the magnetic type except that the starting and running devices are manually-operated.

Rating of Controller		Reduced-Voltage Controller				Full-Voltage Controllers			
H.P.	D.8	Magnetic CR7061		Semi-Magnetic CR7062		Magnetic CR7065		Semi-Magnetic CR7066	
		Power-Factor	Voltage Range	Each	Panel No.	Each	Panel No.	Each	Panel No.
25	20	220	\$532	111	\$333	121	\$303	131	...
		440	532	111	333	121	303	131	...
30	25	550	532	111	333	121	303	131	...
		2200	1083	211	647	221	647	231	\$730 443
40	30	220	532	111	339	121	303	131	...
		440	532	111	339	121	303	131	...
50	40	550	532	111	332	121	303	131	...
		2200	1083	211	653	221	647	231	730 443
60	50	220	684	112	411	123	393	132	...
		440	532	111	351	121	303	131	...
75	60	550	532	111	339	121	303	131	...
		2200	1083	211	653	221	647	231	730 443
25	20	220	684	112	417	123	393	132	...
		440	563	111	351	121	303	131	...
30	25	550	538	111	351	121	303	131	...
		2200	1089	211	659	221	647	231	730 443
40	30	220	708	112	424	123	393	132	...
		440	563	111	357	121	303	131	...
50	40	550	563	111	351	121	303	131	...
		2200	1101	211	659	221	647	231	730 443
60	50	220	841	114	430	123	430	134	...
		440	696	112	430	123	393	132	...
75	60	550	563	111	357	121	303	131	...
		2200	1101	211	659	221	647	231	730 443

**G-E Type RSA Single-Phase Constant Speed Motors**

Wound Stator and Rotor, Repulsion Start, Induction Run  
\*110-220 Volts, 60 Cycles, Short Hour Service



A constant speed motor having high starting torque, good accelerating torque and large reserve power. Suitable for driving hard starting devices which operate only part of the time such as domestic water pumps, garage equipment, air compressors, etc. All motors are rated for continuous duty. The base has slots for belt tightening.

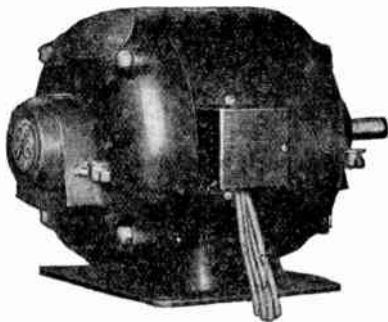
Drip-proof end shields, built in terminal box and large capacity wool-packed long-life sleeve bearings are incorporated. Reconnectable for 110 or 220 volts, direction of rotation easily changed.

Cat. No. Motor with Rigid Base	Motor with Solid Base Each	Frame No.	H.P. at 40° C.	Rated Full Load Speed R.P.M.	Ship. Wt., Lbs.
5RSA43C17	\$15.20	43	1/6	1725	30
5RSA45C45	18.00	45	1/4	1725	34
5RSA45C50	25.65	45	1/2	1725	34

\*Prices of motors for other frequencies on application. Type K polyphase and Type BC direct current motors are available with interchangeable mounting dimensions. For larger h.p. ratings use Type SCR motors.

**G-E Type SCR Single-Phase Constant Speed Motors**

Repulsion-Induction, Wound Stator, Wound Rotor with Buried Squirrel Cage  
\*110-220 Volts, 60 Cycles, Short Hour Service



Cat. No. 5SCR75AA2

A constant speed motor having high starting torque and accelerating torque and large reserve capacity. Suitable for driving hard starting devices which operate only part of the time such as floor surfacing machines, compressors, garage and dairy equipment, hoists, etc. All motors are rated for continuous duty.

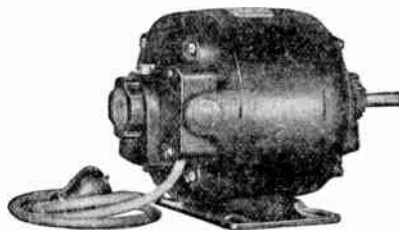
Drip-proof end shields protect the motor, large wool-packed bearing provides adequate lubrication, reconnectable for either 110 or 220 volts; rotation easily changed. Provision is made for conduit connection. A solid welded-on base is provided.

Cat. No. Motor with Rigid Base	Each	Frame No.	H.P. at 40° C.	Rated Full Load Speed R.P.M.	Ship. Wt., Lbs.
5SCR65AA4	\$32.80	65	1/2	1780	68
5SCR75AA2	43.15	75	3/4	1780	80

\*Prices on motors for other frequencies on application. Type K polyphase and Type BC direct current motors are available with interchangeable mounting dimensions.

**G-E Type KH Single-Phase Constant Speed Motors**

Wound Stator, Squirrel Cage Rotor-Resistance, Split-Phase Starting  
110-220 Volts, 60 Cycles\*



Type KH-B with 45A Frame

Type KH motors have moderate starting and accelerating torque and large reserve power. Suitable for driving any easily started device requiring constant speed, such as oil burners, blowers and ironing machines. All motors are rated for continuous duty.

Base is equipped with slots for belt tightening. Drip-proof end shields, built-in terminal box, and a device to eliminate end bump are included in the 40 series frames. While these motors are considered quiet, a resilient base can be furnished on long hour service motors at slightly additional cost where more quiet operation is desired. The 1/2 and 1/4-h.p. short service motors are for devices requiring high maximum output but which operate only a small part of the time.

All motors are reconnectable for either rotation.

**Long Hour Service**

H.P. at 40° C.	Frame No.	Rated Full Load Speed R.P.M.	Volts	Cat. No. Motor with Solid Base	Each	Ship. Wt., Lbs.
1/40	25	1140	110	5KH25AA43	\$14.95	14
			220	5KH25AA44	16.45	14
1/20	23	1725	110	5KH23AA103	12.35	12
			220	5KH23AA104	13.85	12
1/15	25	3450	110	5KH25DA47	16.30	14
			220	5KH25DA48	17.80	14
1/12	35	1140	110	5KH35CA136	17.05	20
			220	5KH35CA137	18.55	20
1/8	33	3450	110	5KH33BA41	16.80	18
			220	5KH33BA42	18.30	18
	43	1725	110	5KH43AB6	14.20	25
			220	5KH43AB7	15.70	25
	45	1140	110	5KH45AB32	17.60	29
			220	5KH45AB33	19.10	29
1/6	37	3450	110	5KH37BA237	17.05	28
			220	5KH37BA238	18.55	28
	45	1725	†110	5KH45AB16	14.45	29
			110	5KH45AB12	14.45	29
	47	1110	220	5KH45AB13	14.95	29
			110	5KH47AB14	18.10	34
	47	220	110	5KH47AB15	19.60	34
			220	5KH47AB14	18.10	28
1/4	37	3450	†110	5KH37BA229	19.60	28
			220	5KH37BA230	19.60	28
	47	1725	†110	5KH47AB4	15.35	34
			220	5KH47AB7	16.85	34
1/3	49	3450	†110	5KH49BB1	22.05	40
			220	5KH49BB2	23.55	40

**Short Hour Service**

1/6	43	1725	†110	5KH43AB12	\$9.50	25
			220	5KH43AB28	10.90	25
1/4	45	1725	†110	5KH45AB55	10.00	29
			220	5KH45AB68	11.40	29

\*Prices of motors for other frequencies on application.

†Starting current is in excess to 20 amperes.

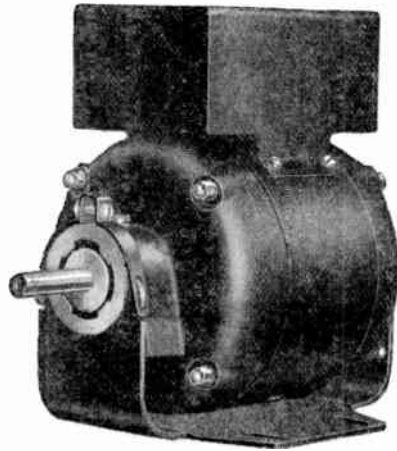
Type K polyphase and Type BC direct current motors are available with interchangeable mounting dimensions. All sizes are equipped with large oil capacity wool yarn packed sleeve bearings. Ball-bearing motors are available; prices on request.



## G-E Type KC Single-Phase Constant Speed Motors

Wound Stator, Squirrel Cage Rotor

110-220 Volts, 60 Cycles, Long Hour Service



With 45A Frame, on End-Flange Cushion Base

Type KC motors have high starting and accelerating torque and exceptionally large overload capacity.

Suitable for driving hard starting devices where service is severe such as refrigerator compressors, stokers, etc.

All motors are rated for continuous service and will give long care-free dependable service.

Bases of all motors up to the 60 and 70 series frames have slots for belt tightening. The 40, 60 and 70 series frame motors have drip-proof end shields and a device in each end shield to eliminate end bump.

The 40 series frames have a built-in terminal box for easy lead connection; either cord and plug or conduit may be used.

All motors are equipped with large oil capacity wool-yarn-packed sleeve bearings. Rotation of 40, 60 and 70 series frame motors is easily changed.

### Capacitor Start, Electrolytic

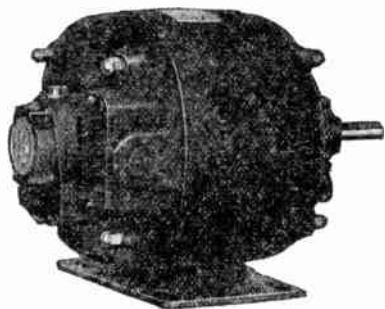
Motor Frame No.	R.P.M.	1/8 H.P., No. 112 Capacitor Case			*With Resilient Base		
		With Solid Base CAT. NOS.		Each	CAT. NOS.		Each
		110 V.	220 V.		110 V.	220 V.	
43	1725	5KC43AB 27	5KC43AB 28	\$14.80	5KC43AB 25	5KC43AB 26	\$15.20
1/8 H.P., No. 112 Capacitor Case							
45	1725	5KC45AB257	5KC45AB258	\$15.20	5KC45AB254	5KC45AB256	\$15.60
1/8 H.P., No. 112 Capacitor Case							
45	1725	5KC45AB261	5KC45AB262	\$15.95	5KC45AB259	5KC45AB260	\$16.35
1/4 H.P., No. 112 Capacitor Case							
47	1725	5KC47AB178	5KC47AB179	\$18.00	5KC47AB176	5KC47AB177	\$18.40
Capacitor Start, Permalytic							
1/8 H.P., No. 115 Capacitor Case							
43	1725	5KC43AB 12	5KC43AB 14	\$15.55	5KC43AB 29	5KC43AB 30	\$15.95
1/8 H.P., No. 125 Capacitor Case							
45	1725	5KC45AB265	5KC45AB266	\$15.95	5KC45AB263	5KC45AB264	\$16.35
1/4 H.P., No. 130 Capacitor Case							
47	1725	5KC47AB 7	5KC47AB 25	\$18.90	5KC47AB180	5KC47AB181	\$19.30
Capacitor Start and Run							
1/8 H.P., No. 55 Capacitor Case							
43	1725	5KC43AB 35	5KC43AB 36	\$16.75	5KC43AB 33	5KC43AB 34	\$17.15
45	1140	5KC45AB 71	5KC45AB 72	23.10	5KC45AB 69	5KC45AB 70	23.50
1/8 H.P., No. 55 Capacitor Case							
37	3450	5KC37BA172	5KC37BA174	\$24.00	5KC37BA168	5KC37BA170	\$24.40
45	1725	5KC45AB273	5KC45AB274	17.20	5KC45AB271	5KC45AB272	17.60
47	1140	5KC47AB 45	5KC47AB 46	27.50	5KC47AB 43	5KC47AB 44	27.90
1/4 H.P., No. 55 Capacitor Case							
37	3450	5KC37BA184	5KC37BA186	\$25.20	5KC37BA180	5KC37BA182	\$25.60
47	1725	5KC47AB184	5KC47AB185	18.90	5KC47AB182	5KC47AB183	19.30
55	1140	5KC55CA 37	5KC55CA 38	31.90	5KC55CA 35	5KC55CA 36	33.00
1/8 H.P., No. 55 Capacitor Case							
49	3450	5KC49BB 64	5KC49BB 65	\$29.70	5KC49BB124	5KC49BB125	\$30.10
53	1725	5KC53AA155	5KC53AA156	27.00	5KC53AA153	5KC53AA154	28.10
65	1140	5KC65AB 9	5KC65AB 10	38.50	.....	.....	.....
1/2 H.P., No. 60 Capacitor Case							
49	3450	5KC49BB 60	5KC49BB 61	\$35.75	5KC49BB122	5KC49BB123	\$36.85
63	1725	5KC63AB 1	5KC63AB 2	34.50	.....	.....	.....
77	1140	5KC77AB 17	5KC77AB 18	49.50	.....	.....	.....
3/4 H.P., No. 60 Capacitor Case							
55	3450	5KC55EA 56	5KC55EA 58	\$44.00	5KC55EA 52	5KC55EA 54	\$45.40
73	1725	5KC73AB 3	5KC73AB 4	45.40	.....	.....	.....
1 H.P., No. 65 Capacitor Case							
67	3450	5KC67BB 1	5KC67BB 2	\$56.10	.....	.....	.....

\*Frames 37 and 55 have spring-cushion base. Frames 43 to 49 have rubber-cushion base.

**G-E Type K 2 and 3-Phase Constant Speed Motors**

Wound Stator, Squirrel Cage Rotor

110, 220, 440, 550 Volts, 60 Cycles



Type K, with 45A Frame, with Solid Base

Type K polyphase motors have excellent starting and accelerating torque and large reserve power. They will start and drive any device operated by any of the single-phase motors of corresponding rating. As far as possible the design of the single-phase and polyphase motors are built from interchangeable mechanical parts and have similar external appearance. Mounting interchangeability between single-phase and polyphase motors is maintained. Motors are equipped with rigid base.

H.P. at 40° C.	Frame No.	Rated Full Load Speed R.P.M.	*Cat. No. 3-Ph. Motor with Rigid Base	**Each	Approx. Ship. Wt. Lbs.
1/6	33	3450	5K33BB 3	\$25.00	22
	43	1725	***§5K43AC316	22.00	26
	43	1725	†5K43AC218	22.00	26
	43	1725	†5K43AC332	22.00	26
	45	1140	5K45AC311	23.25	30
1/4	37	3450	5K37BB134	26.50	28
	43	1725	***§5K43AC364	22.50	26
	43	1725	†5K43AC 2	22.50	26
	51	1140	5K51CB403	30.00	35
1/3	49	3450	5K49BC 2	28.00	40
	51	1725	†5K51AB330	27.00	35
	45	1725	***§5K45AC 6	27.00	30
	63	1140	5K63AC 33	38.50	48
1/2	49	3450	5K49BC 18	34.10	40
	63	1725	5K63AC 1	32.00	48
	73	1140	5K73DC 81	45.10	56
3/4	55	3450	5K55EB 27	39.60	45
	73	1725	5K73DC 1	40.70	56
1	67	3450	5K67BC 1	44.00	60

\*Cat. No. covers 3-phase 60-cycle motors; 2-phase motors are available at the same price. Prices of motors for other frequencies on application.

\*\*These prices apply to 110-volt motors; 220-volt motors can be furnished at same prices. For 440 and 550-volt motors, add \$3.00 each to above prices.

\*\*\*These motors are included to provide mounting interchangeability with Type KH short hour service motors.

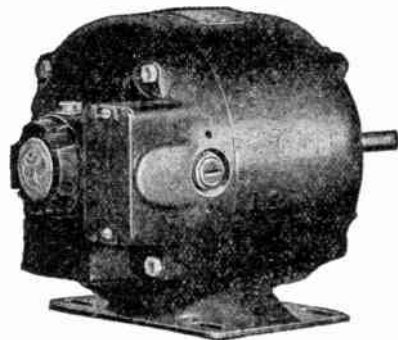
†These motors are included to provide interchangeability with Type KH long hour service motors.

‡These motors are included to provide interchangeability with Type KC motors.

§These motors are included to provide interchangeability with Type RSA motors.

**G-E Type BC Direct Current Constant Speed Motors**

32, 115 and 230 Volts



These motors have excellent starting and accelerating torque and large reserve power. They will start and drive any device operated by any of the single-phase motors of corresponding rating. As far as possible the design of the d.c. motors follows the general design of the single-phase motors. They have a similar external appearance and in general, the same mechanical features. Mounting interchangeability between single-phase and d.c. motors is maintained. Motors are equipped with rigid base.

**Shunt Wound**

H.P. at 40° C.	Frame No.	Rated Full Load Speed R.P.M.	*Cat. No. Motor with Solid Base	**Each	Ship Wt. Lbs.
1/40	28	1140	5BC28A 73	\$19.00	13
1/20	28	1725	5BC28A 9	18.00	13
1/15	28	3450	5BC28A 11	21.00	13

**Compound Wound**

1/12	36	1140	5BC36A 16	\$22.00	19
	36	3450	5BC36A 18	22.00	19
1/8	42	1725	†5BC42AB43	21.00	26
	42	1725	†5BC42AB69	21.00	26
	42	1140	†5BC42AB41	24.00	26
	42	1140	†5BC42AB64	24.00	26
1/6	36	3450	5BC36A 23	23.00	19
	42	1725	***§5BC42AB81	22.00	26
1/5	42	1725	†5BC42AB 1	22.00	26
	42	1725	†5BC42AB72	22.00	26
	44	1140	5BC44AB46	27.00	30
	42	1725	5BC42AB75	24.00	26
1/4	38	3150	5BC38A 9	24.00	24
	42	1725	***§5BC42AB57	24.00	26
1/3	44	1725	†5BC44AB 1	24.00	30
	54	1140	5BC54A 8	30.00	43
	42	3450	5BC42AB87	26.00	26
	54	1725	†5BC54A 11	27.00	43
1/2	44	1725	§5BC44AB51	27.00	30
	66	1140	5BC66AB 8	38.50	53
	44	3450	5BC44AB54	33.00	30
	66	1725	5BC66AB 2	35.20	53
3/4	74	1140	5BC74AB 4	47.30	65
	54	3450	5BC54A 21	38.50	43
	74	1725	5BC74AB 1	45.10	65
1	66	3450	5BC66AB 5	49.50	53

\*Cat. No. covers motors having counter clockwise rotation (when viewing end opposite shaft extension). Rotation may be changed internally. Clockwise rotation will be furnished from the factory if specified on order at no additional charge.

\*\*These prices apply to 115-volt motors; for 32 and 230-volt motors, add \$1.00 each to above prices.

\*\*\*These motors are included to provide mounting interchangeability with Type KH short hour motors.

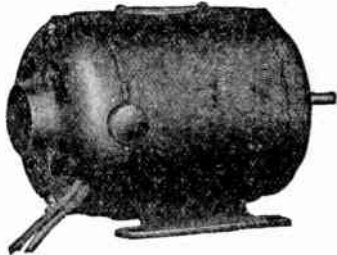
†These motors are included to provide mounting interchangeability with Type KH long hour motors.

‡These motors are included to provide interchangeability with Type KC motors.

§These motors are included to provide interchangeability with Type RSA motors.

## G-E Series Wound Motors

1/100 H.P. at 5000 R.P.M. to 1/3 H.P. at 1000 R.P.M.  
110 and 220 Volts, Varying Speed



Type BA with 45A Frame

A complete line of series wound motors are available for portable machines, domestic devices, etc. requiring high outputs with small size and weight. Self-aligning bearings and large oil capacity housings with oil returns provide lubrication. Only occasional oiling is required. Ventilating

system cools motor even when operating under heavy loads. Series type motors offer high starting and accelerating torque and operate at high speeds. They have varying speed characteristics, that is the speed varies with the load, but with constant load they offer constant speed. A motor must be chosen whose output closely matches the requirements of the device. The requirements of the device to be motorized are usually determined by test.

Motor parts, consisting of rotor, stator and brush mechanism are also available for built-in applications.

## G-E Motors for Unusual Requirements

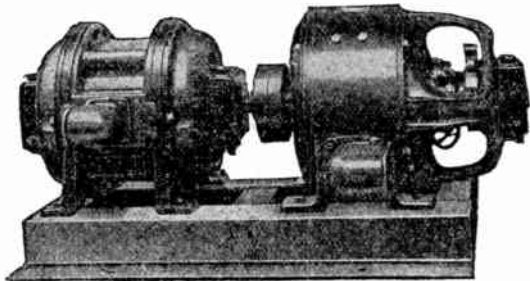
In addition to general purpose motors, G-E Fractional H.P. Motors are designed for special requirements.

The following is intended to indicate the wide scope of special service motors available: gear motors, for low speeds; explosion-proof motors, for explosive atmospheres; synchronous motors, for close speed regulation; fan duty motors, for fans and blowers; totally enclosed motors, for dusty locations; dynamotors, for converting d.c. to a.c.; motor generators, for converting power; vertical and flange-mounted motors, where special mounting arrangements are required.

Further information will be furnished on application.

## G-E Induction Motor-Generator Sets Types B or CD, D.C. Generator—Shunt or Compound Wound

3-Bearing, 40° C. Continuous Rated, 2 or 3-Phase, 60 Cycles



Made up of standard G-E motors and generators connected by solid steel couplings and mounted on welded structural steel bases. Bearings are of the self-aligning, self-feeding, oil-ring sleeve type.

K.W. Rating of Set	Sync. Speed R.P.M.	Generator Volts	Motor Volts	Set with Gen. Field Rheo. Only Each
1	1800	125 or 250	110, 220, 440, 550	\$242.00
1 1/2	1800	125 or 250	110, 220, 440, 550	276.00
2	1800	125 or 250	110, 220, 440, 550	312.00
3	1800	125 or 250	110, 220, 440, 550	396.00
5	1800	125 or 250	220, 440, 550	486.00
7 1/2	1800	125 or 250	220, 440, 550	587.00
10	1800	125 or 250	220, 440, 550	675.00
15	1800	125 or 250	220, 440, 550	826.00
20	1800	125 or 250	220, 440, 550	963.00
25	1800	125 or 250	220, 440, 550	1073.00
			2200	1186.00
30	1800	125	220, 440, 550	1225.00
			2200	1339.00
	1800	250	220, 440, 550	1191.00
			2200	1306.00

Prices are for motor only. Pulley and base when required will be furnished at slight additional cost.

## G-E Type CR1061 Motor Starting Switches

For Fractional—H.P. Motors—Manually Operated

Maximum Ratings: { A.C. Sgl.-Pole, 3/4 H.P., 110 or 220 V.  
Dbl.-Pole, 1/2 H.P., 110 or 220 V.  
D.C. Sgl.-Pole, 1/2 H.P., 115 or 230 V.



For Wall Mounting

The operating mechanism of these switches is of the positive snap-action type which prevents slow opening or closing of the contact tips and insures maximum contact-tip life; these tips are pure silver, of generous size. Vibration will not cause switch to trip.

Complete protection against stalled rotor current and injurious overload conditions is provided. It is impossible to hold switch closed under injurious overload conditions. After overload device has permitted the switch to trip, motor cannot be restarted until it has cooled to a safe operating temperature.

All molded parts, except the arc chute of the d.c. switches, are of G-E Textolite, and all metal parts are corrosion-resisting.

Order by CR and Cat. No. and specify one heater for overload device.

### Open Type

Cat. No.	*Each	Power Supply	No. of Poles	Nomenclature
4388950	\$2.05	A.C.	1	CR1061-A3B
4388954	2.35	A.C.	2	CR1061-A4B
4388952	2.05	A.C.	1	CR1061-A9A
4388953	2.35	A.C.	2	CR1061-A10A
4389054G2	2.05	D.C., 115 Volts	1	CR1061-A13B
4389054G3	2.05	D.C., 230 Volts	1	CR1061-A13B
4389055G2	2.05	D.C., 115 Volts	1	CR1061-A13C
4389055G3	2.05	D.C., 230 Volts	1	CR1061-A13C

### Enclosed Type—For Wall Mounting

4388855	\$2.65	A.C.	1	CR1061-A5A
4388856	2.95	A.C.	2	CR1061-A6A
4389056G2	2.65	D.C., 115 Volts	1	CR1061-A13D
4389056G3	2.65	D.C., 230 Volts	1	CR1061-A13D

### For Flush Mounting

4388857	\$2.85	A.C.	1	CR1061-A7A
4388858	3.15	A.C.	2	CR1061-A8A
4389820G2	2.85	D.C., 115 Volts	1	CR1061-A13F
4389820G3	2.85	D.C., 230 Volts	1	CR1061-A13F

### For Class I Group D Hazardous Locations

4389428	\$5.70	A.C.	1	CR1061-B1A
4389204	6.00	A.C.	2	CR1061-B1C
4389435G2	5.70	D.C., 115 Volts	1	CR1061-B1E
4389435G3	5.70	D.C., 230 Volts	1	CR1061-B1E

\*Price includes overload heater which must be ordered separately. Heaters may be omitted or additional ones furnished at 25 cents each.

### Heaters for Type CR1061 Switches

Heaters for thermal overload devices of Type CR1061 switches should be selected from the table below, according to the full-load current of the motor.

Heater Cat. No.	*Full Load Current of Motor Amps.	Heater Current Amps.	Heater Cat. No.	*Full Load Current of Motor Amps.	Heater Current Amps.	Heater Cat. No.	*Full Load Current of Motor Amps.	Heater Current Amps.
81D160	0.47-0.52	0.38	81D170	1.62-1.82	2.00	81D180	4.64- 5.27	5.8
81D161	0.53-0.60	0.66	81D171	1.83-1.96	2.15	81D181	5.28- 6.09	6.7
81D162	0.61-0.68	0.75	81D172	1.97-2.16	2.37	81D182	6.10- 6.73	7.4
81D163	0.69-0.77	0.95	81D173	2.17-2.42	2.57	81D183	6.74- 7.32	8.6
81D164	0.78-0.88	0.97	81D174	2.43-2.64	2.90	81D184	7.33- 8.54	9.4
81D165	0.89-1.03	1.10	81D175	2.65-2.98	3.28	81D185	8.55- 9.55	10.5
81D166	1.04-1.14	1.25	81D176	2.99-3.36	3.70	81D186	9.56-10.7	11.3
81D167	1.15-1.27	1.40	81D177	3.37-3.64	4.00	81D187	10.8- 12.4	13.6
81D168	1.28-1.45	1.60	81D178	3.65-4.18	4.60	81D188	12.5- 14.0	15.4
81D169	1.46-1.61	1.77	81D179	4.19-4.63	5.10	81D189	14.1- 15.8	17.4

\*Heaters must be selected only on the basis of full-load motor current.



**G-E Type CR1062 Motor Starting Switches**

Manually Operated—For Small A.C. Motors

25, 40, 50 and 60 Cycles



Two CR1062-C5 Switches Mounted on Pedestal Cat. No. 4923350G1

These switches are single throw with double-break contacts. Provide overload protection by means of hand-reset thermal overload device and are used for throwing small a.c. single or 3-phase, 60, 50, 40 or 25-cycle motors directly across the line. Operating mechanism trips free from handle. Contacts are of silver.

Cases have conduit knockouts and sufficient wiring space for 8 line wires with soldered terminals. Protects against single-phase operation of polyphase motors.

Order by CR and Cat. and Form No. and give rating of motor with which to be used. Specify if heaters are required for overload protection. Order pedestals by Cat. No.

**Type CR1062-B6—Single-Phase, for Wall Mounting**

Switch Cat. No.	*Each	Max. H.P. Rating	Volts	No. of Poles
4981887	\$6.00	1½	110	2
		2	220, 440, 550, 600	2

**Type CR1062-B7—3-Phase, for Wall Mounting**

4981888	\$7.00	2	110, 220, 440, 550, 600	3
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**Type CR1062-B8—3-Phase, for Pedestal Mounting**

4981889	\$7.00	2	110, 220, 440, 550, 600	3
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**Type CR1062-C4—Single-Phase, for Wall or Pedestal Mounting**

4981890	\$8.00	1½	110	2
		3	220	2
		7½	440, 550, 600	2

**Type CR1062-C5—3-Phase, for Wall or Pedestal Mounting**

4981891	\$10.00	3	110	3
		5	220	3
		7½	440, 550, 600	3

**Type CR1062—Explosion-Proof**

Complete information furnished on application.

\*Price includes heaters. Heaters may be omitted or additional ones furnished at 50 cents each.

**Heaters for G-E Type CR1062 Motor Starting Switches**

For use with standard or high-reactance squirrel-cage motors. For totally-enclosed fan-cooled motors use one size smaller than listed below.

Heater Cat. No.	FULL-LOAD CURRENT OF MOTOR, AMPS.		Heater Cat. No.	FULL-LOAD CURRENT OF MOTOR, AMPS.	
	For CR1062B Switches	For CR1062C Switches		For CR1062B Switches	For CR1062C Switches
81D106	.45-.50	0.36-0.40	81D123	3.24-3.59	2.63-2.98
81D107	.51-.57	.41-.46	81D124	3.60-3.99	2.99-3.36
81D108	.58-.64	.47-.52	81D125	4.00-4.49	3.37-3.64
81D109	.65-.74	.53-.60	81D126	4.50-5.09	3.65-4.18
81D110	.75-.84	.61-.68	81D127	5.10-5.79	4.19-4.63
81D111	.85-.96	.69-.77	81D128	5.8-6.59	4.64-5.27
81D112	.97-1.09	.78-.88	81D129	6.6-7.39	5.28-6.09
81D113	1.10-1.24	.89-1.03	81D130	7.4-8.39	6.10-6.73
81D114	1.25-1.39	1.04-1.14	81D131	8.4-9.39	6.74-7.82
81D115	1.40-1.56	1.15-1.27	81D132	9.4-10.4	7.83-8.54
81D116	1.57-1.76	1.28-1.45	81D133	10.5-11.7	8.55-9.55
81D117	1.77-1.96	1.46-1.61	81D134	11.8-13.4	9.56-10.7
81D118	1.96-2.16	1.62-1.82	81D135	13.5-15.2	10.8-12.4
81D119	2.17-2.37	1.83-1.96	81D136	15.3-17.2	12.5-14.0
81D120	2.38-2.59	1.97-2.16	81D137	17.3-19.7	14.1-15.8
81D121	2.60-2.89	2.17-2.42	81D138	.....	15.9-18.2
81D122	2.90-3.23	2.43-2.62	.....	.....	.....

**Recommended Fuse Ratings**

For protecting thermal devices in CR1062 switches.

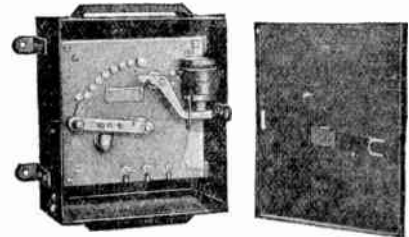
†Motor Full-Load Current Amperes	MAX. SIZE FUSES, AMPS. 250 V. 600 V.	†Motor Full-Load Current Amperes	MAX. SIZE FUSES, AMPS. 250 V. 600 V.
.36-3.36	60 30	3.65-12.4	100 60
3.37-3.64	100 30	12.5-18.2	100 100

†Heaters Cat. Nos. 81D106 to 81D138.

**Mounting Pedestals for Types CR1062-B8 CR1062-C4 or CR1062-C5 Switches**

Cat. No. ....	4923349G1	4923350G1
No. of Switches Accommodated ..	1	2
Each.....	\$2.00	\$4.00

**G-E CR1026 A.C. Enclosed Starting Rheostats For Type SCR Repulsion-Induction Motors 40, 50 and 60 Cycles, Single-Phase**



These starters may be used with motors that do not require more than 150 per cent torque to start or longer than 30 seconds to attain full speed. They comply with American Standard Resistor Classification No. 35. They are primarily for use with the single-phase repulsion-induction motors (Type SCR) where the inrush of current resulting from throwing the motor directly upon the line is objectionable. When these motors are started by being thrown directly upon the line they require from 250 to 300 per cent full-load current. While in many cases this starting current may not be objectionable, it is recommended that a starter be installed in every case with the 7½ and 10 h.p. motors and with the smaller motors when it is desired to reduce the starting current.

Starters for use with motors up to and including 5 h.p. 110 volts and 7½ h.p. 220 volts are provided with button contacts. Larger sizes have renewable segments.

H.P. of Motor	110 Volts Each	220 Volts Each	H.P. of Motor	110 Volts Each	220 Volts Each	440 Volts Each
Up to 1	\$21.00	\$21.00	5	\$25.00	\$25.00	.....
1½	23.00	23.00	7½	.....	34.00	\$36.00
2	23.00	23.00	10	.....	50.00	36.00
3	23.00	23.00	.....	.....	.....	.....

When ordering state CR No. of rheostat and h.p., voltage and frequency of motor.

## G-E Type CR1034 A.C. Hand-Starting Compensators

Manually Operated—For Squirrel-Cage Induction Motors

3-Phase, 3-Wire,—60 Cycles



Type CR1034-K1 Compensator with Ammeter Attachment



Type CR1034-K1 Compensator Cover Removed Showing Type CR2824-TC-121 Relay Mounted

Suitable for starting squirrel-cage induction motors on applications requiring not more than 15 seconds to attain full speed, once every 4 minutes for an hour.

Compensators consist of an auto-transformer with suitable taps, a switching device, an instantaneous undervoltage protective device and a hand-reset overload relay, all self-contained within a sheet metal case.

Arranged for wall mounting; has conduit wiring box. The 2200-volt size is floor mounted. Switch is oil immersed. Compensators can be furnished with attachments such as ammeters, jack type disconnecting switches or motor-circuit switches.

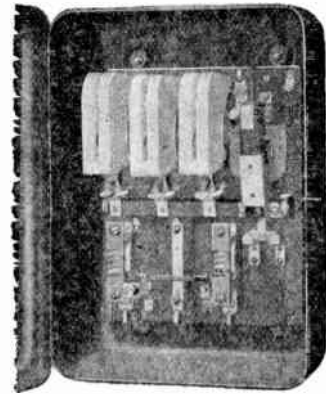
When ordering, specify a CR1034 compensator with temperature overload relay giving the complete motor rating and naming attachments wanted.

MOTOR RATING		Form	Size	Compensator and Relay Each
H.P.	Volts			
5-10	110, 220, 440, 550	K 1	1	\$87.00
15	110, 220, 440, 550	K 1	1	87.00
20	220, 440, 550	K 1	1	90.00
20	2200	K17	.	348.00
25	220, 440, 550	K 1	1	90.00
25	2200	K17	.	361.00
30	220, 440, 550	K 1	1	94.00
30	2200	K17	.	361.00
40	220	K 1	2	160.00
40	110, 550	K 1	1	99.00
40	2200	K17	.	365.00
50	220	K 1	2	165.00
50	140, 550	K 1	1	99.00
50	2200	K17	.	365.00
60	220, 440, 550	K 1	2	171.00
60	2200	K17	.	378.00
75	220, 440, 550	K 1	2	177.00
75	2200	K17	.	378.00
100	220	K 1	3	241.00
100	440, 550	K 1	2	177.00
100	2200	K17	.	385.00
125	220	K 1	3	253.00
125	440, 550	K 1	2	192.00
125	2200	K17	.	390.00
150	220	K22	.	659.00
150	440, 550	K 1	2	192.00
150	2200	K17	.	396.00
200	440, 550	K 1	3	264.00
200	2200	K17	.	408.00

## G-E Type CR7006 A.C. Magnetic Switches

For Throwing Single, 2 or 3-Phase Motors Directly on the Line

25, 50 and 60 Cycles



Type CR7006-D30B with Cover Removed

These switches consist of a 2 or 3-pole magnetically-operated contactor with overload relays mounted on a base and enclosed in a suitable case.

Provides undervoltage protection or release. May be operated by means of a push button station, float or pressure switch, etc.

Prices will be quoted on request on these switches designed specially for installation in dusty or corrosive atmospheres or in Class 1 Group D hazardous gas locations.

Order by CR No. and specify rating of motor with which to be used and heater units required for overload protection.

### 110 Volts

Nomenclature	Switch Each	OMISSION PRICES			Relay Ea.	Max. H.P.			No. of Poles
		En-clos-ing Case Each	Push-ton Ea.	Heat-er Ea.		3 or 2-Ph.	1-Ph.	Size	
CR7006-D40G	\$16	\$1	\$2	\$0.50	...	...	1½	1	2
CR7006-D40H	18	1	2	1.00	...	...	3	1½	3
CR7006-D30B	32	3	2	1.00	...	...	7½	3	2
CR7006-D 7B	44	7	2	1.00	...	...	10	7½	3
CR7006-D 7F	44	7	2	1.00	...	...	15	...	3
CR7006-D31B	109	14	2	1.00	...	...	25	...	4
CR7006-D38A	191	24	6	...	\$36	50	...	...	5

### 220 Volts

CR7006-D40G	\$16	\$1	\$2	\$0.50	...	...	3	1	2
CR7006-D40H	18	1	2	1.00	...	...	5	3	1
CR7006-D30B	32	3	2	1.00	...	...	15	10	2
CR7006-D 7B	44	7	2	1.00	...	...	25	15	3
CR7006-D 7F	44	7	2	1.00	...	...	30	...	3
CR7006-D31B	109	14	2	1.00	...	...	50	...	4

### 440 Volts

CR7006-D40G	\$16	\$1	\$2	\$0.50	...	...	7½	1	2
CR7006-D40H	18	1	2	1.00	...	...	7½	7½	1
CR7006-D30B	32	3	2	1.00	...	...	25	15	2
CR7006-D 7B	44	7	2	1.00	...	...	50	...	3

### 550 Volts

CR7006-D40G	\$16	\$1	\$2	\$0.50	...	...	7½	1	2
CR7006-D40H	18	1	2	1.00	...	...	7½	7½	1
CR7006-D30B	32	3	2	1.00	...	...	25	15	2
CR7006-D 7B	44	7	2	1.00	...	...	50	...	3

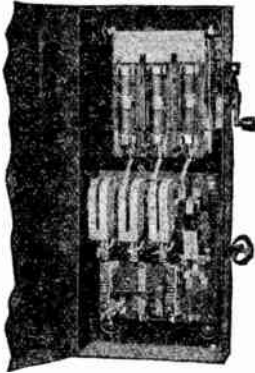
### 600 Volts

CR7006-D40G	\$16	\$1	\$2	\$0.50	...	...	7½	1	2
CR7006-D40H	18	1	2	1.00	...	...	7½	7½	1
CR7006-D30B	32	3	2	1.00	...	...	25	15	2
CR7006-D 7B	44	7	2	1.00	...	...	50	...	3

\*Price includes push-button and overload relay or heaters.

**G-E Type CR7008 Combination Magnetic Switches**

For Throwing Single, 2 and 3-Phase Motors Directly on the Line  
25, 50 and 60 Cycles



Size 2, Fusible, with Cover Removed

This switch consists of a magnetic switch (CR7006) with a quick-break manually-operated motor circuit switch. Fuses can be added and provision is made to supply a test jack if desired.

Order by CR number and specify relay heaters for over-load protection; with or without fuses or test jack.

Furnished in sheet steel or dust-tight cases.

Nomen- clature	*Switch Each	Add for Test Jack	†Switch in Dust-Tight Case	MAX. H.P.	1- Ph.		Fuse Clip Cap. Amps.
					Size No.	2 or 3-Ph.	
<b>220 Volts</b>							
CR7008-A1B	\$33.00	\$7.00	\$43.00	3	1½	1	30
CR7008-A1A	27.00	7.00	37.00	5	3	1	Unfused
CR7008-A1C	33.00	7.00	43.00	5	3	1	60
CR7008-A2B	53.00	7.00	65.00	10	7½	2	100
CR7008-A2A	44.00	7.00	56.00	15	10	2	Unfused
CR7008-A2C	59.00	7.00	71.00	15	10	2	200
CR7008-A3A	63.00	7.00	83.00	25	..	3	Unfused
CR7008-A3B	78.00	7.00	98.00	25	..	3	200

<b>440 Volts</b>							
CR7008-A1A	\$27.00	\$7.00	\$37.00	7½	7½	1	Unfused
CR7008-A1D	33.00	7.00	43.00	7½	7½	1	30
CR7008-A2D	53.00	7.00	65.00	15	10	2	60
CR7008-A2E	53.00	7.00	65.00	25	15	2	100
CR7008-A2A	44.00	7.00	56.00	25	15	2	Unfused
CR7008-A3A	63.00	7.00	83.00	50	..	3	Unfused
CR7008-A3D	84.00	7.00	104.00	50	..	3	200

<b>550 Volts</b>							
CR7008-A1A	\$27.00	\$7.00	\$37.00	7½	7½	1	Unfused
CR7008-A1D	33.00	7.00	43.00	7½	7½	1	30
CR7008-A2D	53.00	7.00	65.00	15	10	2	60
CR7008-A2E	53.00	7.00	65.00	25	15	2	100
CR7008-A2A	44.00	7.00	56.00	25	15	2	Unfused
CR7008-A3C	84.00	7.00	104.00	30	..	3	100
CR7008-A3A	63.00	7.00	83.00	50	..	3	Unfused
CR7008-A3D	84.00	7.00	104.00	50	..	3	200

<b>600 Volts</b>							
CR7008-A1A	\$27.00	\$7.00	\$37.00	7½	7½	1	Unfused
CR7008-A1D	33.00	7.00	43.00	7½	7½	1	30
CR7008-A2D	53.00	7.00	65.00	15	10	2	60
CR7008-A2E	53.00	7.00	65.00	25	15	2	100
CR7008-A2A	44.00	7.00	56.00	25	15	2	Unfused
CR7008-A3C	84.00	7.00	104.00	30	..	3	100
CR7008-A3A	63.00	7.00	83.00	50	..	3	Unfused
CR7008-A3D	84.00	7.00	104.00	50	..	3	200

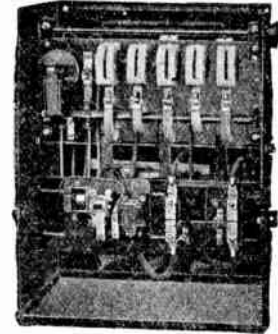
\*Price includes push-button and heaters. The relay heaters or the push-button station may be omitted or additional ones furnished at the following prices: relay heaters, 50 cents each; push-button stations, \$2.00 each.

†Price is for combination switch in cast iron case without push-button station but with relay heaters. Cast iron case cannot be furnished for combination switch with test jack. Relay heaters may be omitted at 50 cents each. If dust-tight push-button station is required, the CR2940-BS207CJ is recommended.

**G-E Type CR7051 Automatic Starting Compensators**

Manually Operated—For Squirrel-Cage Induction Motors

60 Cycles



Size 1 Compensator

Provides remote control for constant-speed squirrel-cage induction motors on compressors, blowers and any application that does not require longer than 15 seconds to attain full speed, once every 4 minutes for an hour. Consists chiefly of an autotransformer for supplying reduced voltage to motor during acceleration, accelerating contactor which connects autotransformer to line and motor to low-voltage taps, line contactor, temperature overload relay, a definite time relay which causes accelerating contactor to open and line contactor to close after a predetermined time.

**Size No. 1—3-Phase, 3-Wire**

Motor Rating H.P.	Motor Rating Volts	†Cat. No.	*Each	Motor Rating H.P.	Motor Rating Volts	†Cat. No.	*Each	
								5
		440	4386985G4	148.00		550	4386985G8	162.00
		550	4386985G5	148.00	25	220	4386985G6	162.00
7½	220	4386985G3	148.00			440	4386985G7	162.00
		440	4386985G4	148.00		550	4386985G8	162.00
		550	4386985G5	148.00	30	220	4386985G9	168.00
10	220	4386985G3	148.00			440	4386985G10	168.00
		440	4386985G4	148.00		550	4386985G11	168.00
		550	4386985G5	148.00	40	440	4386985G12	175.00
15	220	4386985G3	148.00			550	4386985G13	175.00
		440	4386985G4	148.00		440	4386985G12	175.00
		550	4386985G5	148.00	50	440	4386985G12	175.00
20	220	4386985G6	162.00			550	4386985G13	175.00

**Size No. 1—2-Phase, 3-Wire**

5	220	4386983G2	\$148.00	20	440	4386983G6	162.00	
		440	4386983G3	148.00		550	4386983G7	162.00
		550	4386983G4	148.00	25	220	4386983G5	162.00
7½	220	4386983G2	148.00			440	4386983G6	162.00
		440	4386983G3	148.00		550	4386983G7	162.00
		550	4386983G4	148.00	30	220	4386983G8	168.00
10	220	4386983G2	148.00			440	4386983G9	168.00
		440	4386983G3	148.00		550	4386983G10	168.00
		550	4386983G4	148.00	40	440	4386983G11	175.00
15	220	4386983G2	148.00			550	4386983G12	175.00
		440	4386983G3	148.00		440	4386983G11	175.00
		550	4386983G4	148.00	50	440	4386983G11	175.00
20	220	4386983G5	162.00			550	4386983G12	175.00

Ammeter Attachment (Includes Ammeter).... each \$55.00

\*Price is for compensator, relay heater units and push-button station. Relay heater units may be omitted or additional ones supplied at 50 cents each; push-button station may be omitted or additional ones supplied at \$2.00 each.

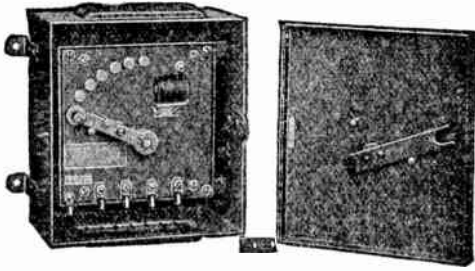
†Cat. No. does not include relay heater units.



## G-E Type CR1003 D.C. Enclosed Heavy Duty Starting Rheostats

### Undervoltage Protection

For Series, Shunt or Compound-Wound Motors  
 Amer. Std. Resistor Class. { Up to 25 H.P., No. 35  
 { Above 25 H.P., No. 34



This heavy duty starting rheostat affords a convenient, simple means of providing starting and smooth acceleration for all kinds of d.c. motors.

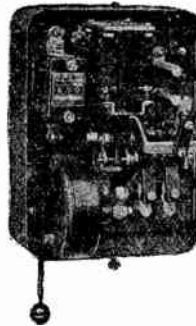
Provides undervoltage protection.

Order by CR and Cat. No. and state rating of motor with which to be used.

32 Volts		115 Volts		230 Volts		440 Volts		550 Volts							
Cat. No.	Each	H.P. of Motor	Approx. Ship. Wt. Lbs.	Cat. No.	Each	H.P. of Motor	Approx. Ship. Wt. Lbs.	Cat. No.	Each	H.P. of Motor	Approx. Ship. Wt. Lbs.	Cat. No.	Each	H.P. of Motor	Approx. Ship. Wt. Lbs.
2021100G15	\$11	1/4	20	2021000G31	\$17	1 1/2-2	40	2021100G5	\$11	1/8-1/2	20	2021688G4	\$124	35	350
2021100G17	11	1/2	20	2042441G7	36	3	120	2021688G5	21	3/4-1	45	2021688G5	142	40	350
2021000G29	17	3/4-1	40	2042441G8	40	5	120	2021000G9	17	1 1/2-2	40	2021689G2	150	50	350
2021100G3	\$11	1/8-1/2	20	2042593G3	\$54	25	175	2021000G13	21	5	50	2021689G3	150	55	350
2021100G7	11	3/4-1	20	2042593G4	56	30	175	2021000G15	22	5	50	2021690G2	183	60	400
2021000G3	17	1 1/2-2	40	2042593G6	56	35	175	2042440G3	39	10	105	2021690G3	183	75	400
2021000G7	17	3	40	2091686G2	183	40	400	2042441G4	47	15	105	2021691G2	204	85	400
2021000G11	21	5	50	2091687G2	237	50	550	2042441G5	47	20	105	2021691G3	204	100	400
2042440G2	35	7 1/2	80	2091687G3	237	55	550	2042441G6	47	25	105	2021691G4	211	125	400
2042441G2	44	10	90	2091687G4	244	60	550	2042593G5	57	30	175	2021691G5	211	150	400
2042441G3	44	15	90	2091687G5	244	75	550								
2042593G2	54	20	175												
2021100G9	11	3/4-1	20	2042593G7	\$57	35	175								
2021000G5	17	1 1/2-2	40	2042593G8	57	40	175								
2021000G9	17	3	40	2042593G9	57	50	175								
2021000G13	21	5	50	2091686G3	190	55	400								
2021000G15	22	7 1/2	50	2091686G4	190	60	400								
2042440G3	39	10	105	2091686G5	190	75	400								
2042441G4	47	15	105	2091686G6	190	85	400								
2042441G5	47	20	105	2091687G6	244	100	550								
2042441G6	47	25	105	2091687G7	244	125	550								
2042593G5	57	30	175	2091687G8	244	150	550								
2046400G3	\$21	1/8-1/2	45	2091688G4	\$142	35	350								
2046400G5	21	3/4-1	45	2091688G5	142	40	350								
2046400G7	21	1 1/2-2	45	2091689G2	150	50	350								
2046400G9	21	3	50	2091689G3	150	55	350								
2046400G11	22	5	50	2091690G2	183	60	400								
2046400G13	27	7 1/2	50	2091690G3	183	75	400								
2046828G2	69	10	80	2091691G2	204	85	400								
2046828G4	71	15	80	2091691G3	204	100	400								
2046828G6	76	20	90	2091691G4	211	125	400								
2091688G2	142	25	350	2091691G5	211	150	400								
2091688G3	142	30	350												

## G-E Type CR4065 Definite-Time Limit Automatic Starters

For Shunt or Compound-Wound, D.C. Motors



Type CR4065-A8, 3-Point Starter

These starters provide definite time limit acceleration, provide thermal overload protection as well as undervoltage release or protection. The mechanism consists of a solenoid operated, multi-fingered contactor which, with the overload relay, is mounted on a compound base. The starting resistor is mounted on the back of the base and the whole is assembled in a ventilated sheetsteel case.

Order by CR No., give complete rating of motor and specify heater units required for overload protection.

### Type CR4065-A8 (Enclosed)

H.P. of Motor	115 Volts			230 Volts		
	Cat. No.	Each	Ship. Wt. Lbs.	Cat. No.	Each	Ship. Wt. Lbs.
3/4-1 1/2	3883843G4	*\$41.00	15	3883843G2	*\$41.00	15
2 -3	3883843G5	* 41.00	15	3883843G3	* 41.00	15

### Type CR4065-A2 (Enclosed)

5 -7 1/2	3650396G2	*\$64.00	30	3650393G2	*\$47.00	25
10	3650396G3	* 70.00	30	3650396G5	* 64.00	30
15-20				3650396G6	* 70.00	30

### Type CR4065-C1 (Enclosed)

15		*\$225.00	210			
20		\$229.00	210			
25		\$358.00	490	3885463G2	*\$206.00	210
30		\$364.00	490	3885463G3	*212.00	210
35		\$370.00	490	3885463G4	*217.00	210
40		\$482.00	700	3885463G5	*223.00	210
50		\$517.00	710	3885464G2	\$375.00	495
60		\$523.00	710	3885464G3	\$381.00	495
75		\$529.00	710	3885464G4	\$387.00	495
85				3885465G2	\$505.00	710
100				3885465G3	\$517.00	710
125				3885465G4	\$523.00	710
150				3885465G5	\$529.00	710

### Type CR4065-C2 (Open)

15		*\$212.00	145			
20		\$206.00	145			
25		\$264.00	340	3885463G12	\$186.00	145
30		\$270.00	340	3885463G13	\$194.00	145
35		\$276.00	340	3885463G14	\$200.00	145
40		\$393.00	540	3885463G15	\$206.00	145
50		\$422.00	550	3885464G12	\$282.00	350
60		\$428.00	550	3885464G13	\$288.00	350
75		\$434.00	550	3885464G14	\$294.00	350
85				3885465G12	\$405.00	550
100				3885465G13	\$416.00	550
125				3885465G14	\$422.00	550
150				3885465G15	\$428.00	550

\*Price includes starter with relay heater and push-button station CR2940-BS-79-J, which may be omitted or additional ones furnished at the following prices: relay heater, 50 cents each; push-button station, \$2.00 each.

†Price includes starter with relay heater and push-button station CR2940-2A1, which may be omitted or additional ones furnished at the following prices: relay heater, 50 cents each; push-button station, \$6.00 each.

‡Price includes starter with CR2940-2A1 push-button station, which may be omitted or additional ones furnished at a price of \$6.00 each.

**G-E Type CR2927 Pressure and Vacuum Switches**

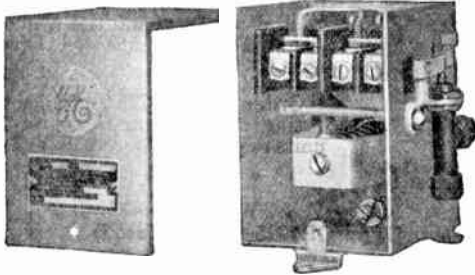
**Diaphragm Type—For Starting Small Motors or for Pilot-Circuit Control**

**Maximum H.P. Ratings:**

2 H.P. 110 Volts, 5 H.P. 220 Volts, 3 H.P. 440 and 550 Volts A.C. Polyphase

1½ H.P. 110 Volts and 3 H.P. 220 Volts A.C. Single-Phase

1 H.P. 110 Volts, 2 H.P. 220 Volts and ¾ H.P. 440 and 550 Volts D.C.



**Pressure Switch (Cover Removed) with Unloader Valve and Differential-Adjusting Attachment Mounted in Place**

These switches are designed to open or close contacts upon changes of pressure or vacuum of any gas or liquid which will not affect rubber or steel parts.

Used for starting motors not larger than 2 h.p. 110 volts, 5 h.p. 220 volts and 3 h.p. 440 and 550 volts polyphase; 1½ h.p. 110 volts and 3 h.p. 220 volts single-phase or 1 h.p. 110 volts, 2 h.p. 220 volts and ¾ h.p. 440 and 550 volts d.c. When larger motors are used, these switches can be used in connection with automatic starters which will also provide overload protection. This protection can also be secured by ordering one CR1920 which consists of 2 thermal cutouts mounted in a sheet steel enclosing case at \$5.00 each.

Order by CR No. and specify adjustment if other than factory adjustment is required.

**Pressure Switches**

Cat. No.	Each	* Operation	Max. Pressure in Lbs.		Factory Adjustment in Lbs. per Sq. In.		Min. Adjustment in Lbs. per Sq. In.		Max. Adjustment in Lbs. per Sq. In.	
			Sq. In.	Close	Open	Close	Open	Close	Open	
2248268G7	\$15	Std.	5000	3200	4500	250	1300	3650	5000	
2248268G2	7	Std.	300	200	250	15	35	245	300	
2248268G3	6	Std.	160	130	150	8	23	140	160	
2248268G4	14	Std.	80	70	80	4	12	70	80	
2248268G20	5	Std.	80	52	70	8	23	62	80	
2248268G5	14	Std.	40	36	40	2	5	36	40	
2248268G6	16	Std.	13	9	10	½	1½	12	13	
2248268G8	7	Rev.	300	250	230	35	5	300	245	
2248268G9	6	Rev.	160	150	130	23	8	160	140	
2248268G10	14	Rev.	80	80	70	12	4	80	70	
2248268G11	14	Rev.	40	40	36	5	2	40	36	
2248268G12	16	Rev.	13	10	9	1¼	½	13	12	

**Vacuum Switches**

Cat. No.	Each	* Operation	Max. Vacuum in Inches of Mercury		Factory Adjustment in Inches of Mercury		Min. Adjustment in Inches of Mercury		Max. Adjustment in Inches of Mercury	
			Close	Open	Close	Open	Close	Open		
2248269G2	\$13	Std.	26½	5¾	8	1	3	23½	26½	
2248269G3	13	Rev.	26½	8	5¾	3	1	26½	23½	

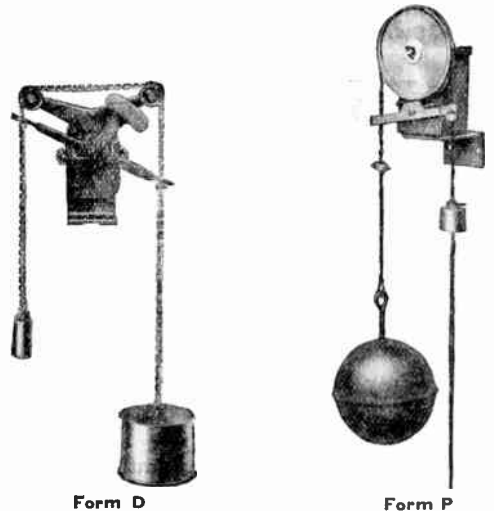
\*Std.—standard operation—open at high pressure, close at low pressure. Rev.—reverse operation—open at low pressure, close at high pressure.

**Attachments**

Cat. No. 2244498G2, Unloader, 2-Way.....	each	\$1.50
Cat. No. 2246093G1, Differential-Adjusting Attachment.....	each	1.00
Cat. No. 2246094G1, Hand-Operated Lock-Out Lever.....	each	1.50

**G-E Type CR2931 Enclosed Float Switches**

**For A.C. or D.C. Motors**



Suitable for use in the control circuit of a.c. or d.c. automatic starters, and, except for the Form P, can directly handle the circuits of small motors.

These switches, as furnished, are arranged for tank operation, that is, the switch closes as the lower liquid level is reached, and opens as the top level is reached. This action may be easily changed for sump operation by interchanging the float and counterweight. Standard floats should not be subjected to pressure. Quotation on special floats will be furnished on request.

All switches are drip and splash-proof and suitable for outdoor installation where they are not subjected to snow or sleet. Where the liquid whose level is to be controlled is subject to freezing, a float switch should not be used.

All switches are quick acting when closing and opening, and this insures a minimum of arcing and burning of the contacts.

Form	No. of Poles	Description	Each
A	Dbl.	For Clamping to Inside Top Edge of Tank; Operated by Rod and Float; Range, 10 Inches to 2 Feet.....	\$39
A	4	Same as Form A Double-Pole.....	44
B	Dbl.	For Bolting to Tank Cover; Requires Guide in Cover for Operating Rod; Range, 10 Inches to 3½ Feet.....	44
B	4	Same as Form B Double-Pole.....	48
C	Dbl.	For Bolting to Tank Cover; Range, 10 Inches to 3½ Feet.....	41
C	4	Same as Form C Double-Pole.....	46
D	Dbl.	†For Bolting to Tank Cover; Operated by Chain and Float; Suitable for Any Depth of Tank or Any Variation in Water Level Not Less Than 10 Inches.....	*44
D	4	†Same as Form D Double-Pole.....	*48
L	Dbl.	†Operated by Chain and Float; For Any Variation in Water Level Not Less Than 5".....	*25
M	Dbl.	Rod-Operated; Range, 2½ In. to 4½ Ft..	25
P	Sgl.	§Operated by Chain and Float; For Any Variation in Water Level Not Less Than 2".....	†13
U	Sgl.	Same as Form P, Except with Mercury-Tube, Heavy Duty Connectors.....	†15

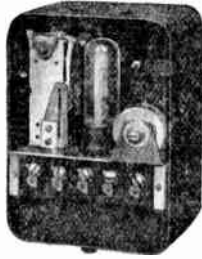
Order by CR and Form numbers. Specify number poles of switch.

\*Price includes 15 feet of bronze chain. If more is required add 15 cents for each additional foot.

†Price includes 15 feet of brass chain. If more is required add 5 cents for each additional foot.

To obtain maximum operating range: †Deduct 3½ feet from length of chain; §deduct 1½ feet from length of chain.

## G-E Type CR7505 Photoelectric Relays



**Type CR7505-K1,  
with Cover Removed**

These devices consist generally of a phototube, a relay, an amplifying tube and associated apparatus mounted on a base and within an enclosing case. Their purpose is to control an electric circuit in response to an increase or decrease in the amount of light falling on the phototube.

Form K1 is applicable to installations where at least 50% changes of light variation are obtainable and will control only small currents (1 ampere at 110 volts, non-inductive load).

Form A5 operates on 40% change in light and includes a contactor which will make or break a circuit of 15 amperes at 110 or 220 volts a.c., 10 amperes at 125 volts d.c. and 5 amperes at 250 volts d.c. (non-inductive load). Its features are in general similar to the K1.

### Features

Responds to the interception or application of light.

Operates without offering resistance to the actuating object and without impairing the accuracy of delicate mechanisms.

Will operate from light flashes or interruptions of not less than  $\frac{1}{15}$ -second duration, with not less than  $\frac{1}{15}$ -second between impulses. With these conditions, a maximum speed of 450 operations per minute can be obtained. For such high speeds of operation in counting applications, it is recommended that a .5-mfd. capacitor be used across the counter-coil.

Easily mounted by means of two screws through holes in back of enclosing case or directly on vertical rigid conduit.

Unit can be taken from case by removing two screws.

Sensitivity can be adjusted with a screwdriver through opening in front cover.

All terminals easily accessible from front of unit by removing cover.

The relay may be mounted in any position, provided vibration will not loosen the tubes in the sockets. Where excessive vibration is present, relay should not be mounted at more than 45 degrees from the vertical.

A domestic Mazda lamp, with or without reflecting shield, may be used for a light source. For applications where a higher light intensity is required or where it is necessary to mount the unit a considerable distance from the light source, standard light sources are available.

The phototube window should be shielded from extraneous light when the unit is to operate at a considerable distance from the light source.

Order by Cat. No.

Cat. No.	Including Tubes Each	Type	Volts	Cycles	Approx. Ship. Wt. Lbs.
4389209G2	\$35.00	CR7505-K1	110-120	60, 50	5
4981669G2	87.00	CR7505-A5	110-120	60, 50	35
4981669G4	87.00	CR7505-A5	110-120	25	35
4981669G3	87.00	CR7505-A5	220	60, 50	35
4981669G5	87.00	CR7505-A5	220	25	35

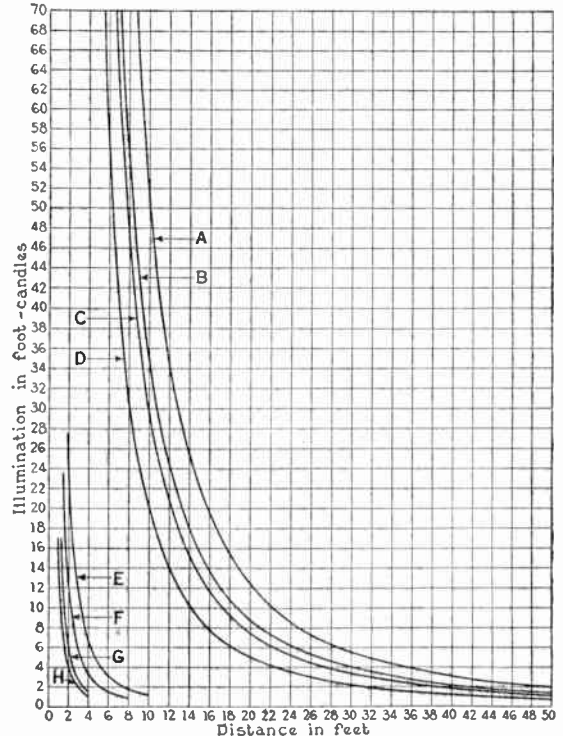
## G-E Type CR7500 Light Sources



**No. CR7500-A3**

By referring to the chart shown below, the illumination obtained from various light sources at definite distances can be readily determined. For example: the CR7505-K1 relay with a standard cover requires a minimum illumination of 5 foot-candles. The curves (see illustration below) show that 5 foot-candles can be obtained at a distance of 30 feet from the CR7500-A3 light source. Therefore, CR7500-A3 light source with a 21-candlepower lamp will operate the CR7505-K1 photoelectric relay over a distance of 30 feet, assuming a clear atmosphere between the two units.

Order by CR number with or without transformer. Unless a 6-volt supply is available transformer must be included.



**Illumination Intensities of Various Types of Light Sources**

When light beam must pass through a dusty atmosphere or through material which absorbs some light (such as glass or water), the value of illumination taken from the curves, should be decreased by a factor which is a conservative estimate of the per cent absorption of the atmosphere or material. When light beam must be reflected by some surface to reach the phototube, the value of illumination taken from the curves, must be multiplied by the reflection coefficient of the surface to obtain a proper estimate of the illumination available at the phototube.

It is sometimes desirable to have the light beam reach the phototube through an aperture smaller than the opening provided in the phototube housing. In such cases, the illumination necessary is increased in the same proportion that the area of the aperture is decreased.

Cat. No.	†Each	Installation	Form	Volts	Cycles	Ship. Wt. Lbs.
4981750	*\$11.00	Indoor	A4	110-220	50-60	6
4980621	* 19.00	Indoor	G1A	110-220	50-60	6
4980654G2	25.00	Outdoor	B2	110-220	50-60	12

\*The transformer, which mounts in a box, may be omitted at a price of \$6.00. †Price includes transformer but no lamp.

If a 110-220-volt, 25-cycle transformer is required for indoor type of light source, add \$8.00 to price of light source alone. A 25-cycle transformer cannot be mounted in outdoor type of light source because the physical dimensions of transformer are too great.

An infra-red filter may be provided with CR7500-G1A light source at a price of \$4.00.



**G-E Type CR9006 Enameled Resistor Units**



Form QD

FORM QL.—Has stranded copper leads for making external connections.

FORM QD.—Has stranded copper leads and porcelain bushings to facilitate mounting.

FORM QC.—Designed for fuse clip mounting. Leads are connected to metal ferrules.

FORM QS.—Provided with screw base for mounting in lamp sockets. The 3/4-inch size has a candelabra base and the 1 1/8-inch size has a standard Edison base.

FORM QF.—Provided with metal feet to which leads are connected and through which external connections are made.

**\*22-Watt Units**

Form	Size	Ohms	Each	Form	Size	Ohms	Each
QL K1924025	1-	800	\$ .50	QF K2155965	801-	3000	\$.75
QL K1924025	801-	3000	.55	†QS K1924034	1-	800	.80
QF K2155965	1-	800	.65	†QS K1924034	801-	3000	.85

**\*57-Watt Units**

QL K1924029	1-	225	\$.55	QC K2155968	226-	10000	\$1.05
QL K1924029	226-	10000	.60	QF K1924030	1-	225	.85
QC K2155968	1-	225	.95	QF K1924030	226-	10000	.90

**\*85-Watt Units**

QL K1924012	1-	4000	\$.65	QC K1924014	4001-	15000	\$1.05
QL K1924012	4001-	10000	.75	QF K2155983	1-	4000	.95
QD K1924013	1-	4000	.80	QF K2155983	4001-	15000	1.05
QD K1924013	4001-	15000	.85	†QS K1924049	1-	4000	1.10
QC K1924014	1-	4000	.95	†QS K1924049	4001-	15000	1.15

**\*122-Watt Units**

QL K1924015	1-	6000	\$.80	QF K1924019	1-	6000	\$1.10
QL K1924015	6001-	23000	.85	QF K1924019	6001-	23000	1.15
QD K1924016	1-	6000	.90	QF K1924020	1-	6000	1.10
QD K1924016	6001-	23000	.95	QF K1924020	6001-	23000	1.15
QC K1924017	1-	6000	1.10	†QS K1924050	1-	6000	1.15
QC K1924017	6001-	23000	1.15	†QS K1924050	6001-	23000	1.20

\*\*QE K1924021 1-23000 1.40

**\*180-Watt Units**

QL K2155954	1-	12000	\$.90	QC K2673042	12001-	34000	\$1.35
QL K2155954	12001-	34000	1.05	QF K2673017	1-	12000	1.20
QC K2673042	1-	12000	1.20	QF K2673017	12001-	34000	1.35

\*This rating is based on a single unit mounted with free ventilation. The rating is reduced if ventilation is hindered by adjacent units or by enclosure.

\*\*Used in CR9158 enclosure. Enclosed rating, 85 watts.

†Has candelabra base. ‡Has Edison screw base.

**Ratings**

Std. Resistance Values in Ohms	MAXIMUM AMPERES				Std. Resistance Values in Ohms	MAXIMUM AMPERES				
	22-57-Watt Unit	57-85-Watt Unit	85-122-Watt Unit	122-180-Watt Unit		22-57-Watt Unit	57-85-Watt Unit	85-122-Watt Unit	122-180-Watt Unit	
1	4.5	...	...	...	400	.29	.37	.45	.55	.67
3	2.6	4.3	5.1	...	500	.20	.23	.40	.49	.60
5	2.0	3.3	4.0	4.9	600	.18	.30	.36	.45	.55
10	1.4	2.3	2.7	3.5	700	.17	.28	.34	.41	.50
15	1.1	1.9	2.3	2.8	800	.16	.26	.32	.39	.47
20	1.0	1.6	2.0	2.4	900	..	.25	.30	.37	.45
25	0.9	1.5	1.8	2.2	1000	..	.23	.28	.35	.43
30	0.8	1.3	1.6	2.0	1200	..	.21	.26	.32	.39
40	0.71	1.1	1.4	1.8	1400	..	.20	.24	.29	.35
50	0.63	1.05	1.2	1.5	1600	..	.185	.22	.27	.33
60	0.58	0.96	1.1	1.4	1800	..	.175	.21	.26	.32
75	0.52	0.86	1.0	1.3	2000	..	.16	.20	.24	.30
100	0.45	0.74	0.90	1.1	2500	..	.15	.18	.22	.25
125	0.40	0.66	0.80	1.0	3000	..	.13	.16	.20	.24
150	0.36	0.60	0.73	0.90	4000	..	..	.14	.17	.20
175	0.34	0.56	0.67	0.83	5000	..	..	..	.15	.19
200	0.31	0.52	0.63	0.77	6000	..	..	..	..	.17
250	0.28	0.47	0.56	0.69	8000	..	..	..	..	.14
300	0.26	0.43	0.51	0.63	10000	..	..	..	..	.13

§Resistance of standard units varies from 95 to 110 per cent of these values. Prices for units of less resistance variation will be quoted on request.

Intermediate taps can be furnished at an additional price of 15 cents each.

Cat. No. 2X930, Fuse Clips for 57-Watt Form QC, each \$.12

Cat. No. 2X931, Fuse Clips for 85, 122 and 180-Watt, Form QC Units, each .12

Two fuse clips are required for each unit.

**G-E Type CR9504 Thrustors**

To Provide Smooth Straight-Line Thrust From Electric Motor Drive



This is a self-contained hydraulic device which exerts a smooth, straight-line thrust (50 to 3200 pound maximum thrust) in one direction throughout a definite distance (2 and 16-inch maximum stroke). The return stroke is effected by gravity or a spring.

The device can repeat this cycle of operation indefinitely at a rate of 10 to 30 times per minute depending on the size of unit. It is driven by a built-in fractional h.p. motor and therefore the power consumption is small.

The CR9504 Thrustor performs services similar to those accomplished by air cylinders and large a.c. and d.c. magnets and solenoids.

Order by CR and Form No. giving voltage, frequency and phase.

**CR9504-L—50 Pounds Maximum—2-Inch Stroke**

Volts	Phase	Cycle	Price †Each	*Running Current Amps.
110	3	60	\$85.00	.92
220	3	60	85.00	.43
440	3	60	85.00	.23
†110	1	60	75.00	1.8
†220	1	60	75.00	.9

**CR9504-V—100 Pounds Maximum—2-Inch Stroke**

110	3	60	\$140.00	.74
220	3	60	140.00	.37
440	3	60	140.00	.18

**CR9504-N—200 Pounds Maximum—4-Inch Stroke**

110	3	60	\$190.00	1.76
220	3	60	190.00	.88
440	3	60	190.00	.44
550	3	60	190.00	.35
110	1	60	210.00	3.0
220	1	60	210.00	1.5

**CR9504-T—400 Pounds Maximum—4-Inch Stroke**

110	3	60	\$225.00	1.88
220	3	60	225.00	.94
440	3	60	225.00	.47
550	3	60	225.00	.38
110	1	60	240.00	3.8
220	1	60	240.00	1.9

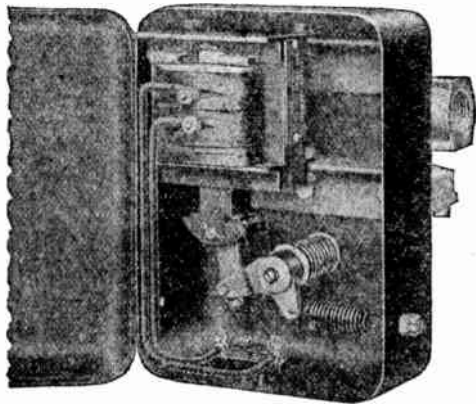
**CR9504-M—600 Pounds Maximum—6-Inch Stroke**

110	3	60	\$250.00	2.8
220	3	60	250.00	1.4
440	3	60	250.00	.7
550	3	60	250.00	.56
110	1	60	265.00	5.0
220	1	60	265.00	2.5

\*Inrush current for a.c. motors is approximately 5 times running current.

†Use these thrustors for 50-pound d.c. application also.

## G-E Type CR9507 Solenoid-Operated Valves



Cover Open to Show Operating Mechanism

### Features

Operating coils are designed for continuous duty.

Valves are of the unbalanced type and require little power for operation.

Valve seats can be ground without removing valve from the line.

Rotary-gland design results in much less wear and friction than are usual with the reciprocating type.

Solenoids have more power than required to operate valves. The operating mechanism is so designed that the solenoid plunger accelerates without load for a fraction of the stroke, thus effecting quick and reliable operation.

Minimum number of wearing parts.

Valve seats are wide and designed to provide long life and dependable operation.

Solenoids and operating mechanisms are supported from the main sections of the valve-body castings. This strong construction removes all strains from the valve seat and operating members.

Solenoids and operating mechanisms are enclosed in sheet-metal cases with knockouts suitable for conduit connection.

### A Few Suggested Uses of CR9507 Solenoid-Operated Valves

For operating steam or air whistles.

For controlling the flow of brine through cooling pipes in cold storage rooms.

For remotely or automatically controlling the supply of oil or gas to furnaces.

For automatically controlling the flow of liquids in connection with weighing machines.

For controlling the flow of water in cooling jackets on compressors.

Type CR9507 solenoid-operated valves can be supplied for a wide variety of general-purpose applications. Some of their more common uses may be classified as follows:

A—Steam, water, natural gas, air, oil, formaldehyde.

B—Ammonia gas, artificial gas, air, oil, sodium-chloride brine.

C—Chlorine gas.

D—Steam, natural gas, air.

### Construction According to Classification

Classification	Body	Trimming	Max. Max. Press. Temp. per Deg. Sq. In. F.
A	Bronze	Bronze Valve Seat and Poppet..	125 385
B	Cast Iron	Cast Iron Valve Seat and Poppet	200 385
C	Monel Metal	Monel Metal Valve Seat and Poppet.....	200 385
D	Cast Steel	Stainless Steel Seat and Poppet.	250 700

## G-E Type CR2940 Push Button Stations



Typical 3 Button Station for Front-of-Panel or Wall Mounting

The CR2940 push button stations are primarily intended for use in the control circuits of various magnetic controllers. The large contacts and substantial construction of these heavy-duty stations make them well able to withstand the frequent operation and ordinary rough usage of machine-tool and similar applications.

The stations listed are divided into three general classes: momentary contact, maintaining contact and a combination of momentary and maintaining contacts. With a momentary contact the circuit is completed or interrupted only as long as the operator's finger depresses the button. This feature is required when the station is used with a controller that must provide under-voltage protection. A maintaining contact holds the circuit open or closed as does an ordinary knife switch.



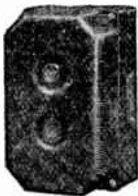
No. BS-11-AW



No. BS-79-J



No. BS-207-CJ



No. BS-82-A

### General Purpose Momentary Contact

#### Single Button

Nomenclature	Nameplate Markings	Each
CR2940-1A1	Stop.....	\$4.00
CR2940-1D1	Jog.....	4.00
CR2940-1H1	Start.....	4.00
CR2940-1K1	Forward.....	4.00
CR2940-1L1	Reverse.....	4.00
CR2940-BS11AW	No Marking (Foot-Operated)	5.00

#### 2 Buttons

CR2940-2A1	Start—Stop.....	\$6.00
CR2940-2E1	Raise—Lower....	6.00
CR2940-2F1	Up—Down.....	6.00
CR2940-2G1	Fast—Slow.....	6.00
CR2940-BS79J	Start-Stop.....	2.00

#### 3 Buttons

CR2940-3A1	Forward—Reverse—Stop.....	\$8.00
CR2940-3C1	Start—Slow—Stop	8.00
CR2940-3D1	Open—Close—Stop.....	8.00

#### 4 Buttons

CR2940-4A1	Forward—Jog Forward—Reverse—Stop.....	\$12.00
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#### 5 Buttons

CR2940-5A1	Forward—Jog Forward—Reverse—Jog Reverse—Stop.....	\$14.00
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### Maintaining Contact

#### One Selector Switch

CR2940-A2	Safe Stop—Run...	\$5.00
CR2940-B2	Stop—Run.....	5.00
CR2940-C2	Slow—Fast.....	5.00
CR2940-D2	Creep—Normal...	5.00
CR2940-E2	Open—Close.....	5.00
CR2940-F2	On—Off.....	5.00
CR2940-G2	Stop—Start.....	5.00
CR2940-H2	Raise—Lower....	5.00

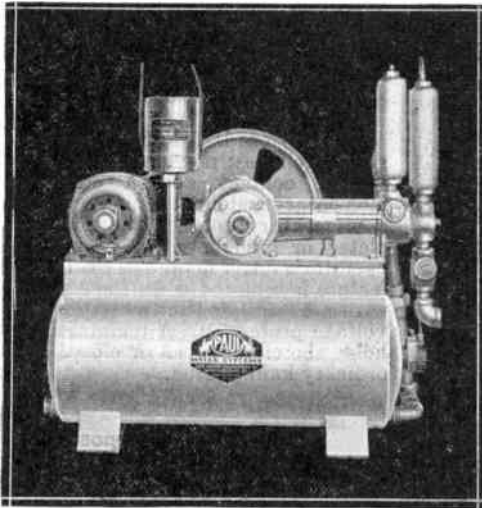
### Stations for Special Applications

CR2940-BS207CJ	Start—Stop (Water-Tight)..	\$8.00
CR2940-BS207GK	Start—Stop (Dust-Tight)....	5.00
CR2940-BS82A	Start—Stop (Time Delay Under-voltage)....	15.00

**Paul Green Knight Water Systems**

250 Gallons per Hour  
Self-Priming

A Complete Automatic System with Storage Tank



The Paul Green Knight Water System is especially designed for supplying the water requirements of the average home, either for soft water or for complete water service, where the water level of the source of supply is not more than 22 feet below the pump.

It is a completely automatic water system, consisting of a Paul Type K Pump, 10-gallon galvanized pressure tank, Paul Type G Automatic Pressure Controller, and all fittings including relief valve and automatic air volume control, all assembled into a sturdy compact unit.

The pump uses only two valves, a bronze poppet type suction valve and a live soft rubber discharge valve. This permits a greatly simplified construction and fewer moving parts—yet a more positive and efficient action.

**Standard Equipment**

Paul Type K Self-Priming Suction Pump, belt-driven.

Standard constant duty a.c. or d.c. motor, mounted on pump base. The a.c. motors are of the repulsion induction type.

Electric welded tank, heavily galvanized inside and out, guaranteed for a working pressure of 75 pounds.

V-belt drive, operating on V-motor pulley and flat face belt wheel.

Fixtures include automatic air volume control, which automatically maintains proper water level and volume of air; Paul Relief Valve for protection against excessive pressure; and all pipe and fittings connecting pump and tank.

The Type G Improved Pressure Controller, double-pole, diaphragm operated, starts pump at 20 pounds; stops at 40 pounds.

Pump, tank and pipe are finished in jade green lacquer. The motor is black enamel. Fittings are gold and nickel trimmed.

Model No.	*Each	Tank Cap. Gal.	PIPE SIZE		Ht. In.	Wdth. In.	Lgth. In.	Ship. Wt. Lbs.
			Suction	Service				
193	\$65.00	†	3/4	3/4	20	12	32	120
1932	75.00	10	3/4	3/4	29	14	32	130
1933	87.50	25	3/4	3/4	29	16	32	140

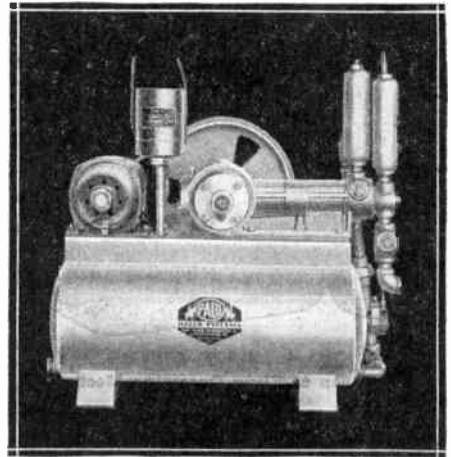
\*With a.c. 1-phase, 60-cycle, 110 or 220-volt motor or d.c. 32, 110, or 220-volt motor.

†Model 193 is not equipped with tank or air volume control. It is mounted on cast base with floor legs.

**Model GK Paul Shallow Well Water Systems**

Fully Automatic—Self-Priming

A Complete Automatic System with 10-Gallon Storage Tank



**Standard Equipment**

Paul Type K Self-Priming Suction Pump, belt-driven. Constant duty a.c. or d.c. motor, mounted on pump base. The a.c. motors are of the repulsion induction type.

Electric welded tank, heavily galvanized inside and out, guaranteed for a working pressure of 75 pounds.

V-belt drive, operating on V-motor pulley and flat face belt wheel.

Fixtures include automatic air volume control, which automatically maintains proper water level and volume of air; Paul Relief Valve for protection against excessive pressure; and all pipe and fittings connecting pump and tank.

The Type G Improved Pressure Controller, double pole, diaphragm operated, starts pump at 20 pounds and stops at 40 pounds.

Pump, tank, and pipe are finished in jade green lacquer. The motor is black enamel. Fittings are gold and nickel trimmed.

Model No. ....	1931-GK
Each .....	\$72.50
Pump Capacity .....	g.p.h. 200
Tank Capacity .....	gallons 10
Motor H.P. ....	1/6
Size Suction Pipe .....	inches 3/4
Size Service Pipe .....	inches 3/4
Height .....	inches 29
Width .....	inches 14
Length .....	inches 32
Shipping Weight .....	pounds 130

**Type GK Paul Shallow Well Pumps Fully Automatic—Self-Priming—Motor Driven**

This suction pump covers a large range of domestic or farm requirements, lifting water from any source of supply not more than 22 feet below its level. It may be operated automatically in connection with any style or size of pressure tank; this pump may be installed to operate on an open tank service by using an automatic float.

Standard equipment includes Paul Type GK Self-Priming Suction Pump, V-belt driven; constant duty a.c. or d.c. motor, mounted on base plate with pump; and Type G Improved Pressure Controller, double pole, diaphragm operated, which starts pump at 20 pounds and stops at 40 pounds.

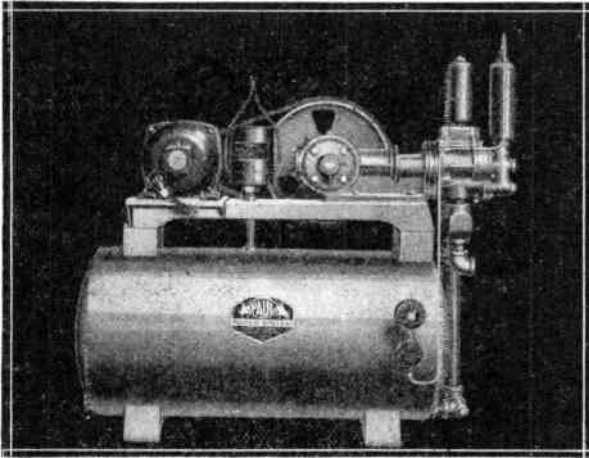
Model No. ....	191-GK
Each .....	\$62.50
Capacity .....	g.p.h. 200
Motor H.P. ....	1/6
Size Suction and Service Pipe .....	inches 3/4
Height .....	inches 25
Width .....	inches 31
Depth .....	inches 11
Shipping Weight .....	pounds 135



**Model SP Paul Shallow Well Water Systems**

**Fully Automatic—Self-Priming**

**A Complete Automatic System with Storage Tank**



Especially designed for the requirements of the average home, either for soft water or complete water service, where the water level of the source of supply is not more than 22 feet below the pump.

Has standard constant duty a.c. or d.c. motor. The a.c. motors are of the repulsion induction type.

Fitted with automatic air volume control which automatically maintains proper water level and volume of air, and Paul Relief Valve for protection against excessive pressure, and all pipe and fittings connecting pump and tank.

The Type G Improved Pressure Controller, double pole, diaphragm operated, starts pump at 20 pounds and stops at 40 pounds.

Pump, tank, and pipe are nickel bronze. Motor is black enamel. Fittings are gold and nickel trimmed.

The Model No. 250-SP System has Paul Type K Self-Priming Suction Pump, belt-driven; electric welded tank, heavily galvanized, and guaranteed for a working pressure of 75 pounds; and V-belt drive, operating on V-motor pulley and flat face belt wheel.

Model Nos. 300-SP and 400-SP have Paul Type L Self-Priming Suction Pump, belt-driven; electric welded tank, heavily galvanized, and guaranteed for a working pressure of 85 pounds; and are fitted with a pressure gauge showing pressure in the pressure tank.

Model No.	Each	Pump Cap. G.P.H.	Tank Cap. Gal.	Motor H.P.	Suc. & Serv. Pipe, In.	Ht. In.	Wdth. In.	Lgth. In.	Ship. Wt. Lbs.
250-SP	\$105.00	250	25	1/4	3/4	29	16	32	140
300-SP	130.00	300	30	1/3	1	38	20	41	270
400-SP	142.00	400	30	1/2	1	38	20	41	280

**Type L Paul Shallow Well Pumps**

**Double Acting—Fully Automatic Self-Priming—Motor Driven**

This suction pump covers a large range of domestic or farm requirements, lifting water from any source of supply not more than 22 feet below its level. It may be operated automatically in connection with any style or size of pressure tank; this pump may be installed to operate on an open tank service by using an automatic float switch.

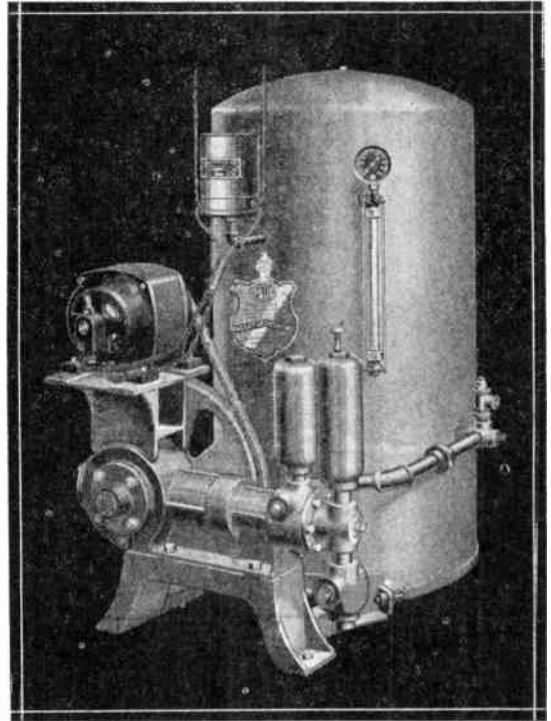
Standard equipment includes Paul Type L Self-Priming Suction Pump, V-belt driven; constant duty a.c. or d.c. motor, mounted on base plate with pump; and Type G Improved Pressure Controller, double pole, diaphragm operated, which starts pump at 20 pounds and stops at 40 pounds.

Model No.	Each	C.p. G.P.H.	Motor H.P.	Suc. & Serv. Pipe, In.	Ht. In.	Wdth. In.	Lgth. In.	Ship. Wt. Lbs.
300-LM	\$100.00	300	1/3	1	26	16	38	160
400-LM	109.00	400	1/2	1	26	16	38	170

**Type US Paul Shallow Well Water Systems**

**Fully Automatic—Self-Priming**

**A Complete Automatic System with Storage Tank**



Especially designed for the requirements of the average home, either for soft water or complete water service, where the water level of the source of supply is not more than 22 feet below the pump.

Its compact arrangement requires the minimum of floor space. There is no mess from oil or water leaks, and no stuffing boxes to require adjustment.

The Paul Direct-from-Well Attachment may be used in connection with this system to furnish water fresh from the source, for drinking purposes.

**Standard Equipment**

Paul Type K Self-Priming Suction Pump, belt driven.

Standard constant duty a.c. or d.c. motor, mounted directly above the pump. The a.c. motors are of the repulsion induction type.

Electric welded tank, heavily galvanized inside and out, and guaranteed for a working pressure of 85 pounds.

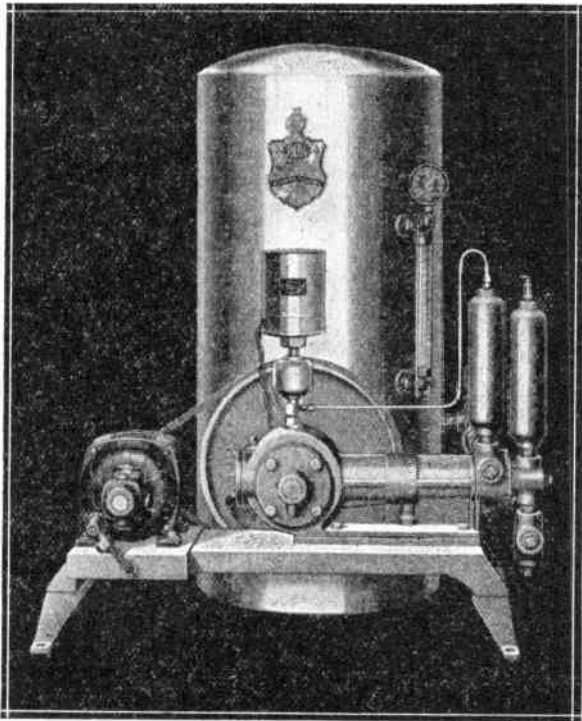
Fixtures include water gauge showing the water level in the pressure tank, pressure gauge showing pressure in the pressure tank, Paul Relief Valve for protection against excessive pressure, and all pipe and fittings connecting pump and tank.

The Type G Improved Pressure Controller, double pole, diaphragm operated, starts pump at 20 pounds and stops at 40 pounds. Controller may be adjusted for other pressures.

Pump, tank, and pipe are royal blue lacquer. Motor is black enamel. Fittings are brass and nickel trimmed.

Model No.	Each	Pump Cap. G.P.H.	Tank Cap. Gal.	Motor H.P.	Suc. & Serv. Pipe In.	Ht. In.	Wdth. In.	Dpth. In.	Ship. Wt. Lbs.
950-US	\$106.00	200	30	1/6	3/4	36	26	34	225
951-US	113.00	200	50	1/6	3/4	55	28	36	300
960-US	113.00	250	30	1/4	3/4	36	26	34	230
961-US	120.00	250	50	1/4	3/4	55	28	36	305

**Type K Paul Shallow Well Water Systems**  
**Fully Automatic—Self-Priming**  
**A Complete Water Service for the Home**



This type of system is especially adapted for complete water service in the average home, or soft water service if a large reserve supply is desired. It will pump from cistern, well, lake, or stream, wherever the water is not more than 22 feet below the level of the pump.

If the system is used for supplying water for drinking purposes, it is recommended that the pump be equipped with a Paul Direct-from-Well Attachment.

**Standard Equipment**

Standard equipment includes Paul Type K Self-Priming Suction Pump, belt driven; standard constant duty a.c. or d.c. motor, mounted on pump base; electric welded tank, galvanized and tested for 85 pounds working pressure; water gauge, pressure gauge, and relief valve.

The Type G Improved Pressure Controller, double pole, diaphragm operated, starts pump at 20 pounds and stops at 40 pounds. Range may be adjusted at other pressures if desired. Controller is mounted in connection with non-pulsating device, producing quiet operation.

Model No.	Each	Pump Cap. G.P.H.	Tank Cap. Gal.	Motor H.P.	Suc. & Serv. Pipe, In.	Ht. In.	Wdth. In.	Dpth. In.	Shp. Wt. Lbs.
950-K	\$105.00	200	30	1/6	3/4	32	27	32	250
951-K	115.00	200	50	1/6	3/4	54	27	32	270
952-K	123.00	200	80	1/6	3/4	66	27	32	340
953-K	126.00	200	100	1/6	3/4	66	27	34	345
954-K	130.00	200	120	1/6	3/4	66	30	36	375
960-K	110.00	250	30	1/4	3/4	32	27	32	270
961-K	120.00	250	50	1/4	3/4	54	27	32	290
962-K	128.00	250	80	1/4	3/4	66	27	32	355
963-K	134.00	250	100	1/4	3/4	66	27	34	370
964-K	138.00	250	120	1/4	3/4	66	30	36	390

**Type K Paul Shallow Well Pumps**  
**Fully Automatic—Self-Priming—Motor Driven**

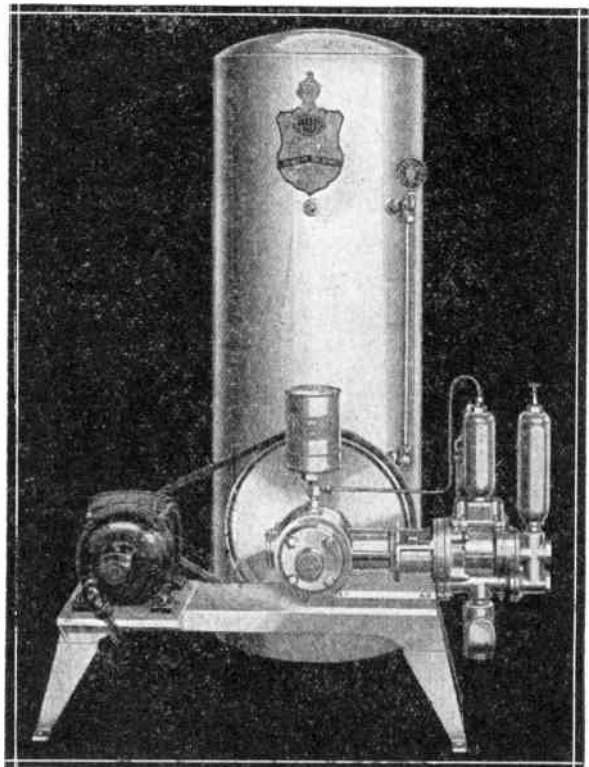
This pump will lift water from any source of supply not more than 22 feet below its level. May be operated automatically in conjunction with any style or size of pressure tank. May be installed to operate upon an open tank service by using an automatic float.

Equipped with Paul Type K Suction Pump, V-belt driven; constant duty a.c. or d.c. motor; and Type G Pressure Controller.

Model No.	Each	Cap. G.P.H.	Motor H.P.	Suc. & Serv. Pipe, In.	Ht. In.	Wdth. In.	Dpth. In.	Shp. Wt. Lbs.
95-KM	\$70.00	200	1/6	3/4	25	31	11	135
96-KM	75.00	250	1/4	3/4	25	31	11	140

**Type L Paul Shallow Well Water Systems**

**Double Acting—Fully Automatic—Self-Priming**  
**A Complete Water Service with 50 to 120-Gallon Tank**



This type of system is especially adapted for complete water service in the average home, or soft water service if a large reserve supply is desired. It will pump from cistern, well, lake or stream, wherever the water is not more than 22 feet below the level of the pump.

If the system is used for supplying water for drinking purposes, it is recommended that, because of the large size of the tank, the pump be equipped with a Paul Direct-from-Well Attachment.

The pump and tank, being mounted separately, permit that the installation be arranged to suit the location.

**Standard Equipment**

Paul Type L Self-Priming, Suction Pump, belt driven. Standard constant duty a.c. or d.c. motor, mounted on pump base. The a.c. motors are of the repulsion induction type.

Electric welded tank, galvanized inside and out by the hot dip process. Tested for 85 pounds working pressure.

Type G Improved Pressure Controller, double pole, diaphragm operated. Starts pump at 20 pounds and stops at 40 pounds. Range may be adjusted at other pressures if desired.

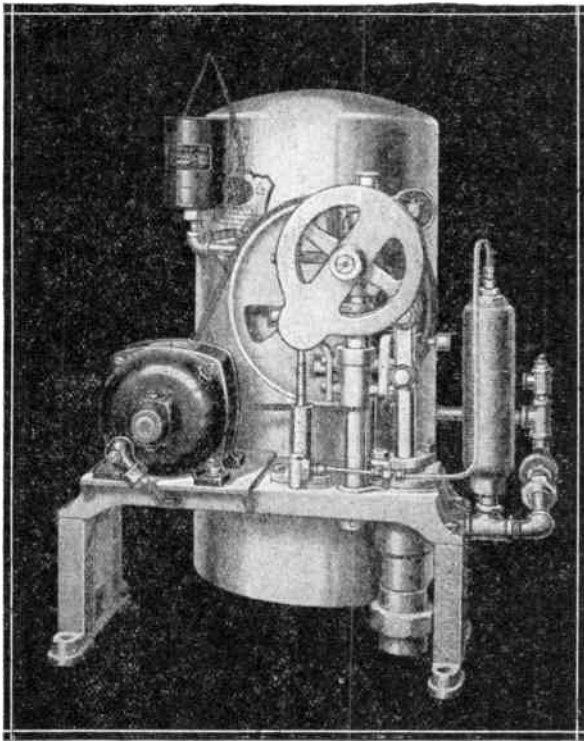
Fitted with water gauge, pressure gauge, and relief valve.

Pump, controller and base are finished in royal blue lacquer. Tank is natural galvanized.

Model No.	Each	Pump Cap. G.P.H.	Tank Cap. Gal.	Motor H.P.	Suc. & Serv. Pipe, In.	Ht. In.	Wdth. In.	Lgth. In.	Shp. Wt. Lbs.
301-LA	\$134.00	300	50	1/3	1	48	36	38	370
302-LB	142.00	300	80	1/3	1	60	38	38	425
303-LC	147.00	300	100	1/3	1	60	40	38	440
304-LD	150.00	300	120	1/3	1	60	42	38	460
401-LA	141.00	400	50	1/2	1	48	36	38	380
402-LB	149.00	400	80	1/2	1	60	38	38	435
403-LC	154.00	400	100	1/2	1	60	40	38	450
404-LD	157.00	400	120	1/2	1	60	42	38	470



## Type US Paul Deep Well Cushion Stroke Systems



A completely automatic water system, delivering the water from the well to point of use under pressure. Assembled into a sturdy, compact unit especially designed for the requirements of the average home.

### Standard Equipment

Equipment includes Paul Type J Cushion Stroke Deep Well Pump, belt driven; standard a.c. or d.c. motor, mounted on pump base; electric welded tank, galvanized, and guaranteed for a working pressure of 85 pounds.

Has Paul Deep Well Cylinder of either the spring or ball valve type, and either octagon ash wood or round steel pump rod, depending upon type of cylinder used.

Type G Improved Pressure Controller is double pole, diaphragm operated. Starts pump at 20 pounds and stops at 40 pounds. May be adjusted for other pressures as desired.

Water gauge, relief valve, and all pipe and fittings connecting pump and tank.

Model No.	Each	Pump No.	Pump Cap. Gal.	Tank Cap. Gal.	Ht. In.	Wdth. In.	Dpth. In.	Shp. Wt. Lbs.
480-US	\$150.00	48-J	120	30	36	32	36	310
490-US	160.00	49-J	120-160	30	36	32	36	320
500-US	180.00	50-J	165-220	50	42	38	44	500
505-US	200.00	505-J	165-330	50	42	38	44	510

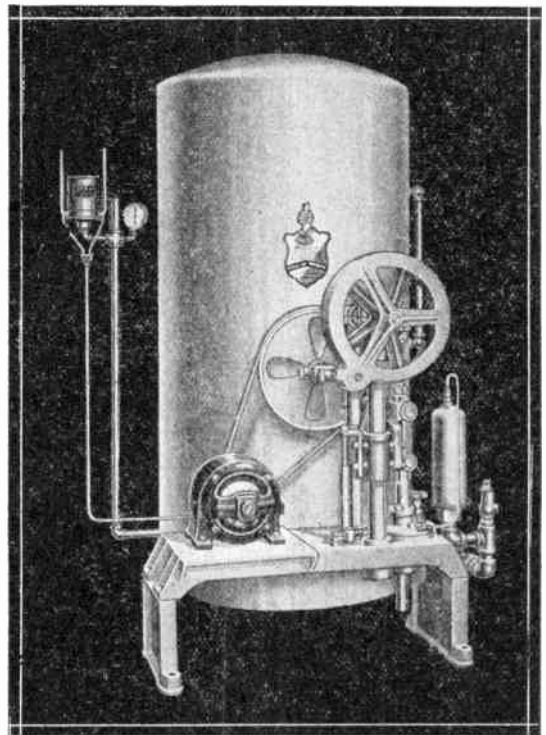
## Type J Paul Deep Well Cushion Stroke Pumps

### Fully Automatic—Motor-Driven 120 to 1950 Gallons per Hour

This pump may be used for fully automatic water supply with a pneumatic tank; or it may be operated by the Paul Float Switch, maintaining the desired level in an open storage tank. Compactly assembled upon a heavy cast-iron bedplate with motor and air chamber.

Model No.	Each	Pump No.	Pump Cap. Gal.	Ht. In.	Wdth. In.	Dpth. In.	Shp. Wt. Lbs.
48-JM	\$110.00	48-J	120	20	23	12	210
49-JM	120.00	49-J	120-160	20	23	12	225
50-JM	150.00	50-J	165-270	36	34	15	315
505-JM	170.00	505-J	165-330	36	34	15	335
51-JM	271.00	51-J	300-445	50	44	24	650
53-JM	300.00	53-J	400-595	50	44	24	680
54-JM	500.00	54-J	680-1260	66	58	28	1250
56-JM	577.00	56-J	815-1950	66	58	28	1300

## Type J Paul Deep Well Cushion Stroke Systems



This system is equipped with a Paul Type J Cushion Stroke Deep Well Pump, belt-driven. This pump is designed to pump water from any deep well where the water level is beyond the lift of the suction pump. Its wide range of capacities and sizes offers complete water service for home, farm, factory, or institution where water is needed.

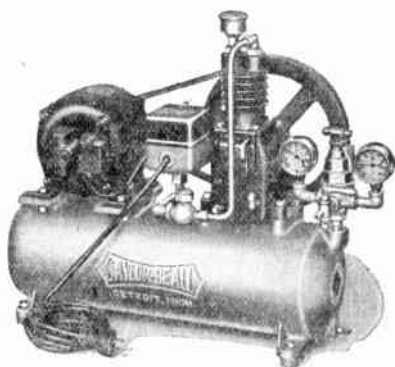
The motor is standard a.c. or d.c., mounted on pump base. The a.c. motor is of repulsion induction type. Has Paul Deep Well Cylinder of either spring or ball valve type, and either octagon ash wood or round steel pump rod, depending upon type of cylinder used. Electric welded tank, galvanized and tested for 85 pounds working pressure. Fittings include water gauge, pressure gauge, and relief valve.

If the system is used for supplying water for drinking purposes, it is recommended that the pump be equipped with a Paul Direct-from-Well Attachment.

Model No.	Each	Pump No.	Pump Cap. Gal.	Tank Cap. Gal.	Ht. Ft.	Wdth. Ft.	Dpth. Ft.	Shp. Wt. Lbs.
481-J	\$152.00	48-J	120	50	4½	2	2½	340
482-J	160.00	48-J	120	80	5½	2	3	405
483-J	165.00	48-J	120	100	5½	2	3	420
484-J	168.00	48-J	120	120	5½	2	3½	430
491-J	165.00	49-J	120-160	50	4½	2	2½	355
492-J	173.00	49-J	120-160	80	5½	2	3	420
493-J	178.00	49-J	120-160	100	5½	2	3	435
494-J	180.00	49-J	120-160	120	5½	2	3½	445
501-J	195.00	50-J	165-270	50	4½	3	3½	450
502-J	200.00	50-J	165-270	80	5½	3	4	515
503-J	205.00	50-J	165-270	100	5½	3	4	530
504-J	208.00	50-J	165-270	120	5½	3	4½	540
5051-J	215.00	505-J	165-333	50	4¼	3	3½	470
5052-J	220.00	505-J	165-333	80	5¼	3	4	535
5053-J	225.00	505-J	165-333	100	5½	3	4	550
5054-J	228.00	505-J	165-333	120	5½	3	4½	560



**Model 930-K Saylor-Beall Automatic Electric Beer Pressure Air Pumps**



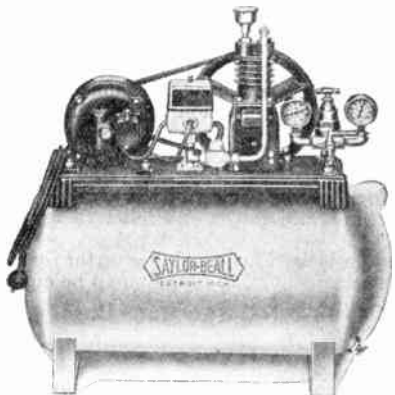
Designed for the average service bar having 1 to 4 taps. Draws air through a felt filter located on top of compressor. Pipe fittings are of bronze, cadmium-plated. Storage tank is automatically controlled at a pressure of 30 to 55 pounds. Compressor running continually will cost about three-quarters of a cent per hour.

Complete unit, with 2½-gallon storage tank, galvanized, occupies only 1.58 square feet floor space. Height, 19½ inches; width, 9½ inches; length, 24 inches over all.

With automatic pressure switch, tank pressure gauge, safety valve and regulator and gauge for pressure at taps. Standard equipment includes a ¼-h.p., 110-volt, 60-cycle G-E motor with V-belt drive. Operates compressors at 450 r.p.m., and at this speed has a piston displacement of 1.43 cubic feet of air per minute. Relief valve set at 70 pounds pressure.

Model 930-K, Complete ..... each \$69.50  
 Extra for D.C. ¼-H.P., 115 Volts..... each 7.00

**Model 950-K Saylor-Beall Automatic Electric Beer Pressure Air Pumps**



Recommended for dispensers having 6 to 12 taps where volume and constant air pressure is required. Storage tank automatically controlled at a pressure of 30 to 55 pounds. Completely equipped with air regulator with gauge, also storage tank pressure gauge.

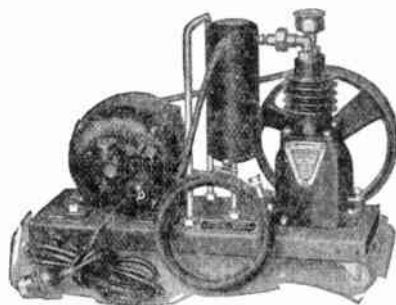
To assure quietness, moving parts are cushioned with rubber. Pipe fittings are of bronze, cadmium-plated.

Complete unit, with 11-gallon galvanized storage tank, occupies 2.07 square feet floor space. Height, 26 inches; width, 13 inches; length, 25 inches over all.

Standard equipment includes a ¼-h.p., 110-volt, 60-cycle G-E motor for a.c. with V-belt drive. It operates compressor at 450 r.p.m., and at this speed has a piston displacement of 1.43 cubic feet of air per minute. Relief valve set at 70 pounds pressure.

Model 950-K, Complete ..... each \$79.50  
 Extra for D. C. ¼-H.P., 115 Volts..... each 7.00

**Model 116-KC Saylor-Beall Portable Air Compressors**



This compressor furnishes compressed air for spraying paints or lacquers, tire inflation, operating small tools and many other purposes. Ideal for use in homes, hotels, apartments, hospitals, schools, office buildings, etc.

Simple in design and sturdy in construction.

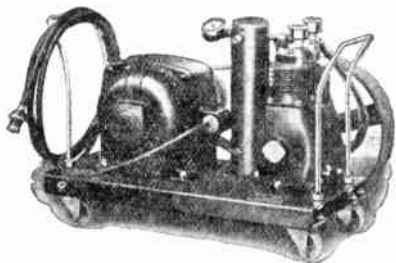
Adjustable rubber belt drive. With bronze bearings; positive lubrication. Fittings are cadmium-plated. Rubber hose, 14 feet of 3-ply cloth inserted with connections.

Finished in red and black enamel.

Motor, ¼ h.p., 110 volts, 60 cycles, a.c.

Model.....	116-KC
Each.....	\$39.50
Extra for D. C. Motor, ¼-H. P., 115 Volts.....	\$7.00
Bore.....inches	2
Stroke.....inches	1¼
Speed.....r.p.m.	755
Piston Displacement, Free Air per Minute.....cu. ft.	2.42
Pressure.....pounds	45
Shipping Weight.....pounds	76

**Model 590-K Saylor-Beall Portable Air Compressors**



This twin cylinder unit is designed especially to meet all requirements for compressed air up to a volume of 6 cubic feet of free air per minute.

Develops a sufficient volume and pressure of air to operate mostly all of the larger paint spray guns and small pneumatic tools. Used by painters, stone-cutters and for garages, factories, hotels, apartment houses, etc.

Where high pressure and lower volume are required, a change is made in the motor pulley at slight additional cost, and the relief valve set to operate at 90, 120 or 150 pounds pressure.

Adjustable rubber belt drive. Special dipper type lubrication. Fittings are cadmium-plated. Bearings are of bronze. Finished in red and black enamel.

Motors, ¾ h.p., 110/220 volts, 60 cycles, a.c.

Model.....	590-K
Each.....	\$129.50
Bore.....inches	2½
Stroke.....inches	2
Speed.....r.p.m.	730
Piston Displacement, Free Air per Minute.....cu. ft.	8.25
Pressure.....pounds	50-60
Shipping Weight.....pounds	185

## Model 317-K Saylor-Beall Spray Guns For Use with Model 116-KC Air Compressors



Can be used as a syphon or pressure type and also with a pressure feed material tank.

The adjustments on the material and air nozzles are so constructed that any width of spray can be obtained from 1/2 inch to 10 inches. All grades of paints, lacquers, enamels, varnishes, oils, insecticides and other liquids can be sprayed successfully.

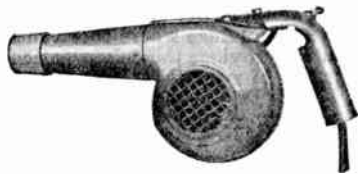
The material cup is of heavy copper and will stand 75 pounds pressure without bulging the bottom. The threads are machined on a brass ring soldered on cup and then ground to give an even, flat surface for gasket, to prevent leaks. Threads machined in this manner will wear indefinitely. Capacity of cup, 1 full quart.

The internal spray nozzles are machined from brass and chromium-plated to increase durability. External nozzles are made from same material and nickel-plated.

In order to do all kinds of spraying it is advisable to have a complete set of air and material nozzles which includes flat and round nozzles of both internal and external atomizing types. Internal nozzles are specially adapted to spray slow drying materials and the external for fast drying materials, such as lacquers and enamels. Complete instructions are packed with every spray gun.

Model	Description	Each
317-KA	With Internal Atomizing Fan Spray Nozzle	\$10.00
317-KB	With External Atomizing Fan Spray Nozzle	11.00
317-KC	With External and Internal Atomizing Fan Spray Nozzle	12.75
317-KD	With Complete Set of Nozzles	16.00
317-KE	With 6-Inch Oiling and Cleaning Nozzles	11.00
317-KF	With 10-Inch Oiling and Cleaning Nozzles	11.50

## Type 403 Speedway Portable Blowers



A powerful 5-pound tool that delivers a blast of clean, dry air at high velocity for cleaning and drying purposes. Indispensable wherever dust and dirt collect on motors, etc.

Universal motor operates a centrifugal fan at 12,000 r.p.m. Made of pressed steel throughout. Soft rubber nozzle covering prevents shorting when cleaning electrical apparatus. Toggle switch is located at operator's thumb.

Equipped with 8-foot cord, unbreakable rubber plug and soft rubber nozzle covering. Universal motor, 110 volts.

Operates from any light socket and is easily handled.

Type 403.....each \$19.50

## Sturtevant Big Midget Portable Blowers



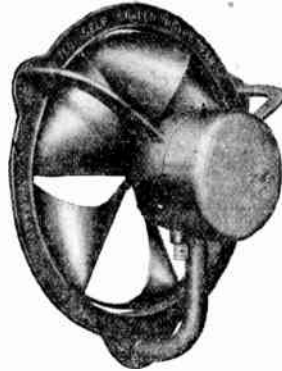
Delivers dry air for removing dust from machinery. Compressed air ordinarily contains moisture; this blower shoots dry air. Does away with air lines and lugging a

hose around, and work is reached from all sides. Has 1/2 h.p. universal motor, 110 or 220 volts; speed, open outlet, 9895 r.p.m., closed outlet, 11100 r.p.m.; volume delivered, 43.2 cubic feet per minute; air velocity, 14820 feet per minute; static pressure, outlet closed, 16.62 ins. water; inside diameter nozzle, 3/4 inch.

Furnished with 20 feet cord and plug; switch in handle. Weight, 7 Pounds.

Price.....each \$50.00

## 1lg Self-Cooled Propeller Fans



The construction of the 1lg Fan combines strength and simplicity. The round-bodied motor fits into a cast iron ring supported by forged arms fastened to the outer ring. This makes it possible to interchange or replace motor without disturbing the alignment. Frame and motor can be installed separately, thus dividing weight.

The vacuum that is created at the axis of the motor draws a current of cool air from the outside over the motor, after which it is carried away with the general exhaust.

The 1lg Lubricating System is used on all fans larger than the 20-inch size. This system permits the lubrication of the motor, while the fan is in operation, by providing grease cups at the front of the ball bearing motors.

### A.C., 2-Speed, 50-60-Cycle, Single Phase

Type Size	110-220 Volts Each	Speed R.P.M.	C.F.M.	Watts Input	Motor Frame No.	Ship. Wt. Lbs.
*12 1lgair	\$38.00	1140	750	70	13	35
*16 1lgair	65.00	855	1000	100	15	65
*16 S.H.	63.00	1140	1400	100	15	65
16S	84.00	855	1000	100	15	65
		1140	1400			
18S	115.00	855	1750	170	D- 87	90
		1140	2300			
20S	136.00	855	2400	250	D- 87	130
		1140	3200			
24S	193.00	600	2880	275	D-102	190
		855	4100			
30S	252.00	500	5420	350	D-101	265
		685	7300			
36S	399.00	400	6900	500	D-104	500
		570	9650			
42S	†425.00	380	9800	800	D-104	675
		490	12300			

\*Single speed only. †For 220 volts only.

### A.C., 50-60-Cycle, 2 or 3-Phase

Type Size	220-440 Volts Each	550 Volts Each	Speed R.P.M.	C.F.M.	Watts Input	Motor Frame No.	Ship. Wt. Lbs.
18M	\$122.00	\$149.00	1140	2300	120	87	100
20M	136.00	169.00	1140	3200	200	87	150
24M	157.00	189.00	855	4100	250	102	225
30M	189.00	220.00	685	7300	400	101	325
36MML	304.00	346.00	490	8300	460	104	450
36M	304.00	346.00	570	9650	460	104	460
42M	350.00	390.00	490	12300	800	104	630
48M	470.00	480.00	490	18400	1300	105	780
54M	820.00	920.00	425	23200	1950	107	900
60M	1030.00	1180.00	380	28400	2000	108	1150
72M	1220.00	1380.00	315	40500	2100	109	1600

### D.C.

Type Size	110-220 Volts Each	500 Volts Each	Speed R.P.M.	C.F.M.	Watts Input	Motor Frame No.	Ship. Wt. Lbs.
12 1lgair	\$ 42.00	.....	1140	750	70	100	35
16B	73.00	.....	1140	1400	100	1/8	65
18B	105.00	.....	1140	2300	150	1/6	90
24A	210.00	\$220.00	855	4100	300	1197	235
30A	252.00	265.00	690	7300	440	1199	345
36A	378.00	397.00	570	9650	600	1207	450
42B	440.00	462.00	490	12300	800	1207	625
48B	590.00	620.00	490	18400	1300	1211	890
54B	870.00	913.50	425	23200	1800	1213	1025
60B	1200.00	1260.00	380	28400	2270	1215	1520
72B	1340.00	1407.00	315	40500	2300	1217	1980

Enclosed speed controllers furnished with all d.c. fans except the Type 12 size.

**Ilgair Portable Floor Fans**



With the Ilgair Portable Floor Fan, the cooling vitalizing blasts of air overcome the heat in operations of all kinds.

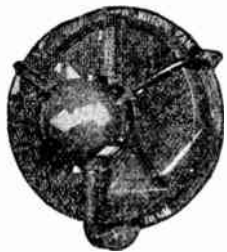
Used for recirculation of air in drying rooms and prevention of stratification in refrigeration rooms.

The 12-inch size is furnished with cord and plug; the 30 and 36-inch sizes furnished with standard enclosed switch.

Size.....in.	12	30	36
A.C.....each	\$112.00	410.00	567.00
D.C.....each	\$115.00	577.00	703.00
C.F.M.....	2000	10,000	15,000
R.P.M.....	3400	1140	1140
Input.....watts	370	1230	2850
Weight.....lbs.	40	400	550

**Ilg Propeller Fan Guards**

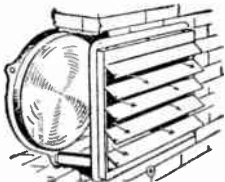
Ilg Woven Wire Guards are strong and durable and do not obstruct flow of air to the fan. Furnished in one, two, or three sections; all sections are interchangeable.



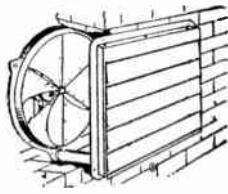
Propeller Fan with 3-Section Guard

Size Inches	Per Section Each	Complete Each	Weight Pounds Complete
12	\$3.00	\$9.00	2
16	3.20	9.60	2 1/4
18	3.50	10.50	3 1/2
20	5.25	15.75	4
24	6.30	18.90	5
30	7.35	22.00	8
36	8.80	26.40	11
42	9.35	28.00	15
48	11.70	35.00	24
54	15.00	45.00	38
60	20.00	60.00	50
72	26.70	80.00	75

**Ilg Automatic Shutters**



Fan Running



Fan Not Running

These shutters are used on the outside of propeller fans to protect the fan when not running and also to keep out the wind, rain, snow and cold.

Ilg Automatic Shutters are built of special hard rolled aluminum leaves, pressed on Whiting Alloy copper coated rods supported in cast frame.

When fan is running, the shutter is held open by the force of the air current. When fan is shut off, the shutter closes automatically by gravity.

Shutters are moisture proof and need no attention after they are installed.

Size of shutter corresponds to size of fan.

Sizes 48-inch and larger are built in two sections.

Size Inches	Approx. Shipping Wt., Lbs.	Price Each	Size Inches	Approx. Shipping Wt., Lbs.	Price Each
12	10	\$8.00	36	112	\$52.00
16	19	11.00	42	152	75.00
18	30	13.00	48	188	100.00
20	43	16.00	54	195	120.00
24	67	19.00	60	210	170.00
30	80	36.00	72	314	190.00

**Type P Ilg Volume Blowers**



The Ilg Type P Volume Blower is designed to handle small quantities of air over a pressure range of 1/2 to 3 inches. The housing is of heavy cast-iron; the wheel is of cast aluminum.

This blower can be hung from ceiling or suspended from side wall and fitted into any one of four different discharges quickly and easily.

It is particularly useful for exhausting fumes from chemical laboratories. It can also be used

for handling light dust from polishing wheels and grinders and is suitable for any small exhaust purpose where a considerable amount of resistance is caused by a long run of small duct. The 7 1/2 Type P Blower at 3400 r.p.m. can be satisfactorily used on single-fire blacksmith forges.

**A.C., 60-Cycle, Single Phase**

Size No.	110 Volts Each	220 Volts Each	Rated R.P.M.	C.F.M.	Watts Input	Shipping Wt., Lbs.
7 1/2 P	\$60.00	\$62.00	3400	225	200	62
10 P	80.00	81.00	1720	300	160	68
15 P	105.00	110.00	1720	450	250	115
20 P	240.00	246.00	1720	1310	850	285

**A.C., 60-Cycle, 3-Phase**

20 P	.....	\$213.00	1720	1310	850	285
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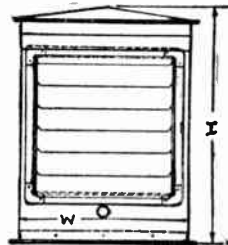
**A.C., 25-Cycle, Single Phase**

10 P	\$79.00	\$90.00	1420	205	110	65
15 P	111.00	115.00	1420	375	160	105
20 P	272.00	277.00	1420	1090	490	245

**D.C.**

7 1/2 P	\$57.00	\$60.00	3400	225	200	62
10 P	74.00	78.00	1720	300	160	68
15 P	103.00	108.00	1720	450	250	115
20 P	192.00	200.00	1720	1310	850	285

**Ilg Power Roof Ventilators**



FRONT VIEW Pent-House with Automatic Shutter

The Ilg Power Roof Ventilator is for buildings where roof ventilation provides the only practical means of exhausting foul air.

With this ventilator there is a constant suction created by the Ilg Self-Cooled Motor Propeller Fan which is enclosed in the penthouse. The foul, dead air and excess heat are positively and uniformly drawn off by the action of the fan. Wind and weather can have no effect.

Placed above machines in special processes and connected by duct work, the unit serves as a fume or smoke and heat exhauster. Since heat's natural direction of travel is upward, the Ilg Power Roof Ventilator has found wide use in every industry confronted with excessive heat.

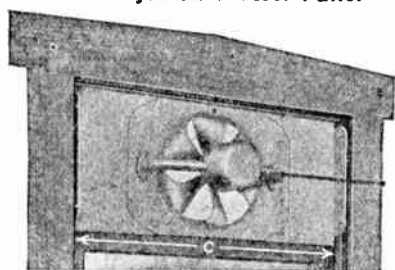
The Ilg Self-Cooled Motor Propeller Fan is mounted within a sheet steel penthouse. Solidly constructed over a heavy angle iron frame, the house is weathertight in every respect.

Furnished complete with shutter. Prices do not include fan.

Size Ventilator In.	Standard Each	Insulated Each	Size Shutter & Fan In.	PENTHOUSE DIMEN., In.			Ga. Metal	Ship. Wt. Lbs.
				Depth	Width	Ht.		
12	\$63.00	\$92.00	12	16	20	30	20	90
16	63.00	94.00	16	16	20	30	20	95
18	73.00	115.00	18	18	24	36	18	105
20	84.00	131.00	20	18	26	36	18	135
24	99.00	147.00	24	21 1/2	30	42	18	170
30	142.00	199.00	30	25 1/4	36	49	18	235
36	189.00	250.00	36	27 1/4	44	58	18	400
42	280.00	350.00	42	32	50	62	18	580
48	360.00	450.00	48	36	56	72	18	740
54	550.00	660.00	54	40	63	82	16	820
60	630.00	770.00	60	44	69	98	16	910
72	930.00	1100.00	72	48	82	102	16	1070



## Ilgair 12-Inch Adjustable Portable Ventilators With Adjustable Steel Panel

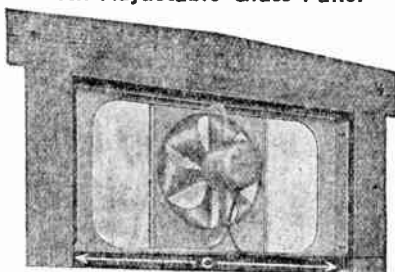


Two panel widths, 26 to 36 inches and 36 to 46 inches.

Finished in ivory. Supplied with 10 feet of rubber covered cord with switch and plug. Exhausts 750 cubic feet of air per minute. Shipping weight, 40 pounds.

50-60-Cycle 110 Volts A.C. . . . . each \$41.00  
110 Volts D.C., 25-Cycle A.C. . . . . each 45.00

### With Adjustable Glass Panel

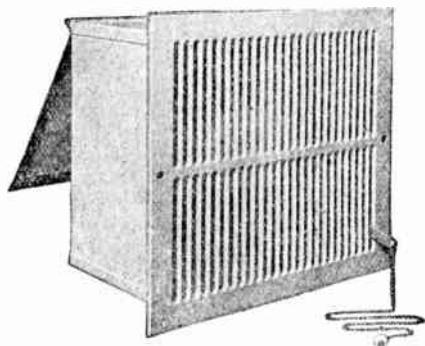


Furnished with two-piece clear vision plate glass panel supported in stainless steel frame. Adjustable panel widths, 30 to 36 inches, 36 to 42 inches, and 42 to 48 inches.

50-60-Cycle 110 Volts A.C. . . . . each \$54.50  
110 Volts D.C., 25-Cycle A.C. . . . . each 67.00

## Ilgair Kitchen Ventilators

### 12-Inch Built-In Cabinet Type



This built-in-the-wall type ventilator can be installed in old or new kitchens.

The quiet Ilgair ventilator is inconspicuous behind the clean-cut white grille front.

A nickel silver pull chain operates the Ilgair and opens the outer weather-tight door. No adjustment need be made for different wall thicknesses.

Exhausts 750 cubic feet of air per minute.

Operates at 1140 r.p.m.

Consumes only 70 watts.

Depth, 8 $\frac{5}{8}$  inches; height, 12 $\frac{3}{4}$  inches; width, 13 $\frac{5}{8}$  inches.

Finished in white.

Shipping weight, approximately 42 pounds.

Rear View of Cabinet Showing Weathertight Door

50-60-Cycle 110 Volts A.C. . . . . each \$54.50  
110 Volts D.C. and 25-Cycle A.C. . . . . each 67.00

## Ilg Variable Speed Controllers

A.C., 2 and 3-Phase



2-Speed Type



Variable Speed Type

Ilg Variable Speed Controller is furnished for 2 and 3-phase fans.

The 2-speed type gives full speed and approximately 40 per cent reduction. The variable speed type gives variable speed adjustment from full speed to approximately 50 per cent reduction.

Size . . . . . inches	18, 20, & 24	30 & 36
2-Speed Type . . . . . each	\$76.00	84.00
Size . . . . . inches	42	48
Variable Speed Type ea.	\$161.00	191.00
		244.00

## No. 55 National Pyramid Brush Assortment

For Fractional Horsepower Motors



Brushes for vacuum cleaners, fans, vibrators, electric ironers, washing machines, sewing machines, food and drink mixers, heat regulators, pumps, electric tools, cash registers and office appliances.

Designed for effective counter or store display. Resale prices for each brush and spring shown on the label in each compartment. Contains 198 brushes of 17 different sizes (3 sizes complete with shunts, springs and terminals) and 100 springs in 3 sizes.

Sizes range between  $\frac{5}{32}$  in. square and  $\frac{5}{16}$  in. square with 10 intermediate sizes of round and rectangular brushes including 3 types of brushes with shunts, springs and terminals. Springs are made of the best grade phosphor bronze wire.

No. 55 Assortment Complete . . . . . \$10.00



**Type 53-C Speedway Electric Drills**

1/4 Inch Capacity in Steel



Steel body is finished in chromium. With oilless, self-aligning bearings, open grip handle, 1/4-inch keyless chuck and universal motor. Furnished with 8-foot rubber-covered cable and separable plug. Over all length, 13 inches. No load speed, 2000 r.p.m. Normal load speed, 1200 r.p.m. Weight, 5 1/2 pounds. Type 53-C.....each \$19.50

**Type 56-C Speedway Electric Drills**

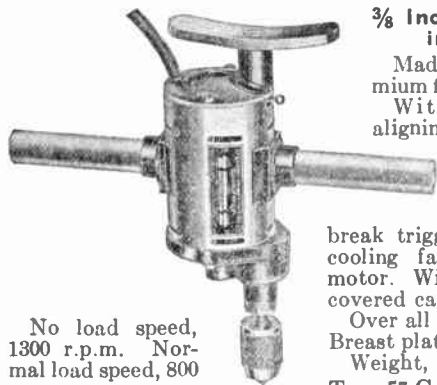
5/16 Inch Capacity in Steel



Steel body is finished in chromium. With oilless, self-aligning bearings, closed grip handle, 5/16-inch keyless chuck and universal motor. Double gear reduction. With 8-foot rubber-covered cable and plug. Over all length, 13 inches. No load speed, 1500 r.p.m. Normal load speed, 900 r.p.m. Weight, 6 1/2 pounds. Type 56-C.....each \$21.50

**Type 57-C Speedway Electric Drills**

3/8 Inch Capacity in Steel

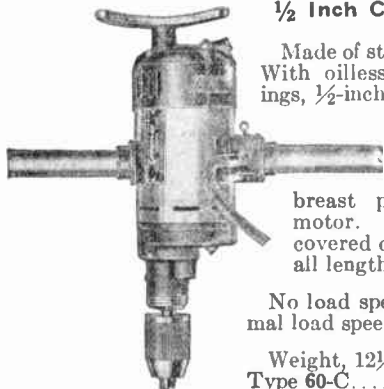


Made of steel, chromium finish. With oilless, self-aligning bearings, keyless chuck, ball-bearing thrust, quick-make-and-break trigger switch, large cooling fan and universal motor. With 8-foot rubber-covered cable and plug. Over all length, 14 inches. Breast plate, 3/8-inch. Weight, 8 pounds. Type 57-C.....each \$30.00

No load speed, 1300 r.p.m. Normal load speed, 800 r.p.m.

**Type 60-C Speedway Electric Drills**

1/2 Inch Capacity in Steel



Made of steel, chromium finish. With oilless, self-aligning bearings, 1/2-inch keyless chuck, ball-bearing thrust, quick-make-and-break trigger switch, large cooling fan, breast plate and universal motor. With 8-foot rubber-covered cable and plug. Over all length, 15 inches. No load speed, 500 r.p.m. Normal load speed, 300 r.p.m. Weight, 12 1/2 pounds. Type 60-C.....each \$45.00

**Speedway Portable Drills Heavy Duty**



Of ball bearing construction.

Operates on both a.c. and d.c. Heavy duty switch, toggle type.

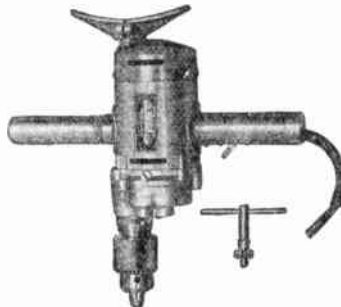
Jacobs 3-jaw key type chuck and chuck key; 8-foot heavy rubber lead cord with indestructible soft rubber split plug connection. Specify voltage when ordering.

Type.....	88	90	92
Each.....	\$45.00	50.00	55.00
Capacity in Steel.....inches	1/4	5/16	3/8
No Load Speed.....r.p.m.	1450	1100	850
Drilling Speed.....r.p.m.	875	650	500
Gear Reduction.....	13 to 1	17 to 1	22 to 1
Length Over All.....inches	14	15	15
Weight.....pounds	8	8 1/2	9

**Type 59 Speedway Electric Drills**

1/2 Inch Capacity in Steel

Has a wood drilling capacity of 1 inch holes or better; average reaming capacity, 3/16 inch. Has oversize 110 volt universal motor. Heavy duty trigger switch in side handle. Ball bearing construction.

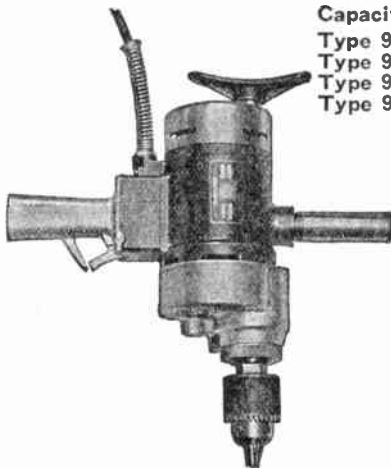


With Jacobs Chuck, chuck wrench, 8-foot lead cord and plug. Length, 14 inches. Speed r.p.m. load, 350; no load, 700. Weight, 14 pounds.

Type 59....each \$65.00  
Type 220 Drill Stand....each 22.50

**Speedway Master Electric Drills**

Capacity in Steel:  
Type 94 - 5/8 Inch  
Type 95 - 3/4 Inch  
Type 96 - 7/8 Inch  
Type 97 - 1 1/4 Inches



Reaming capacity averages 75 per cent of drilling capacity in steel. Capacity in wood ordinarily runs double capacity in steel and over.

Heavy duty trigger switches can be locked on contact. With 110-volt universal motor, 8-foot lead cord and plug. Types 94 and 95 with Jacobs Chuck and Chuck Wrench; Types 96 and 97 with Nos. 2 and 3 Morse Taper Sockets.

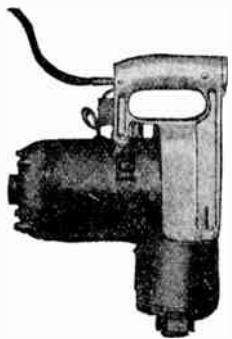
Type	Each	Cap. in Steel In.	Lgth. In.	Load Speed R.P.M.	No Load Speed R.P.M.	Wt. Lbs.
94	\$85.00	5/8	17 1/2	300	500	23
95	90.00	3/4	18	250	450	24
96	100.00	7/8	18 1/2	200	370	28
97	115.00	1 1/4	19	180	300	28

1/2-Inch Jacobs Chuck on Morse Taper Arbor for Morse Taper Sockets, for Types 96 and 97....each \$10.00  
Type 223 Drill Stand.....each 35.00



## Type 6 Speedway Portable Hammers

110 Volts



Primarily built for drilling into concrete, stone, brick, etc., light chipping, channeling, scaling and other uses where a great number of blows is required.

Operates at about 15 per cent of the power cost of operating air tools and without the expense and inconvenience of compressor, air piping hose, etc., Over handwork, the economy is from 80 to 90 per cent. Every tool is controlled by a switch mounted in the handle and equipped with flexible cord and plug. They may be attached to any lamp socket.

A man drilling by hand strikes from 40 to 65 blows per minute, this hammer, 1800 blows per minute. Power cost is negligible, about 15 cents a day for ordinary work. The hammer, element is at all times free from the motor and the strength of the blow is constant. Cannot overload the machine, no burning out of armatures.

Drills 1 1/4-inch diameter hole in concrete or softstone, and drills 2 inches deep per minute.

Operated on both a.c. and d.c. Watts, 275.

Weight, No. 6, 26 pounds; No. 10, 16 pounds.

Type 6 ..... each \$165.00  
 Type 10 ..... each 110.00  
 Add \$3.00 for 220 or 32 volts.

For drilling speed in brick multiply by 2. For drilling speed in granite divide by 2 and use diamond drills.

### Electric Hammer Stands

Useful for Coiling Drilling, Taking the Strain Off the Operators

No. ....	46	46-s
Each .....	\$35.00	20.00
Length Feed..... inches	8	8
Minimum Height.....	7 ft. 6 in.	5 ft.
Maximum Height.....	12 ft.	7 ft. 8 1/2 in.

### Steels for Hammers

The Star drill is especially adapted for working in concrete, brick and soft stone and is regarded as the standard tool for practically all purposes.

### 4-Point Star Drills, Bull Points, Chisels, Blanks, and Diamond Points

For Type 6 or Type 10 Hammers. Class A.

These sizes are standard.

Diameter Inches	PER DOZEN DRILLING LENGTH, INCHES							
	5	8	12	18	24	36	48	
3/8 or Under	\$16.00	\$19.00	\$21.00	\$24.00				
7/16	17.00	19.00	21.00	24.00				
1/2	19.00	21.00	22.00	25.00				
9/16	20.00	21.00	22.00	25.00				
5/8	20.00	21.00	22.00	25.00				
3/4		22.00	23.00	26.00	\$30.00			
7/8			22.00	24.00	27.00	31.00		
1			23.00	25.00	28.00	32.00	\$39.00	
1 1/8			24.00	26.00	29.00	34.00	40.00	\$46.00
1 1/4			25.00	27.00	30.00	35.00	41.00	47.00

### Bush Hammers

For Type 6 or Type 10 hammer. Class A

Each ..... \$5.00

### Channeling Tools

For Type 6 or Type 10 hammer. Class A

Each ..... \$3.00

### Mill Pick Chisels

For Type 6 or Type 10 hammer. Class A

Each ..... \$3.50

Prices on special tools upon application.

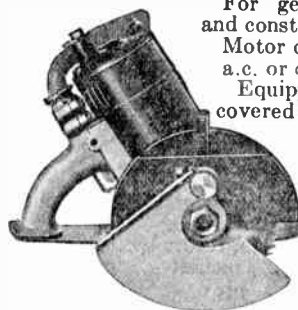
## Type 175 Speedway Portable Electric Saws

For general maintenance, carpentry and construction.

Motor operates from any light socket, a.c. or d.c.

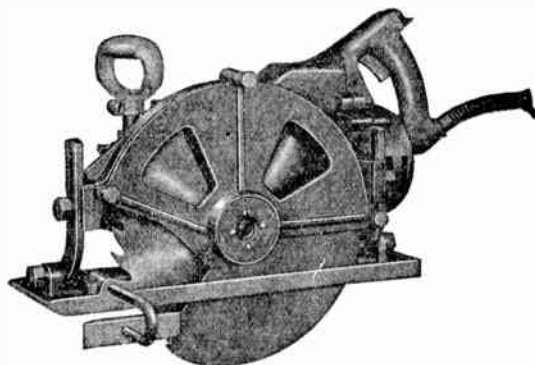
Equipped with 8 feet heavy rubber covered lead cord with soft rubber indestructible split plug connection. Choice of either rip or cross cut blade. A 6-inch blade provides cutting capacity up to 1 3/4 inches. A 7-inch blade with cutting capacity of 2 1/4 inches at extra cost.

Length over all, 15 inches.



Weight, 15 pounds. Speed, 3800 r.p.m.  
 Type 175, 110-Volt..... each \$48.00  
 Type 175, 220-Volt..... each 51.00  
 Type 175, 32-Volt..... each 51.00

## Speedway Portable Electric Saws



Slipper plate can be raised or lowered for adjustment of depth of cut. A ripping guide is mounted on the front of the slipper plate to facilitate long cuts.

Base plate tilts 45° to cut bevels.

Each machine is furnished with a light frame which permits the saw to be turned up side down and used as a table saw.

Swinging saw guard automatically pushes out of the way when cutting pressure is applied and returns to position when pressure is released.

The machine is fitted with ball bearings. All gears and shafts are made from heat treated chrome nickel steel.

Equipped with an adjustable D type handle. Motor cases, handles, and slipper plates are of cast aluminum.

Furnished complete with necessary wrenches and a carrying case. Runs on either a.c. or d.c.

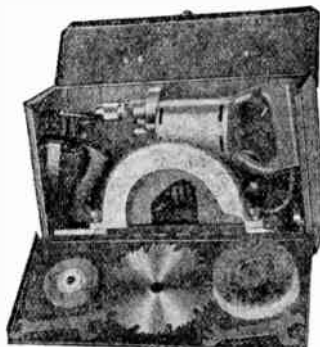
Type .....	183	184	185
Each .....	\$200.00	175.00	147.50
Size of Blade..... inches	12	10	10
Size of Cut..... inches	4 3/8	3 3/8	3 5/8
Motor..... h. p.	1	3/4	3/4
No Load Speed..... r.p.m.	1750	1800	4600
Weight..... pounds	23	25	25

## Type 281 Speedway Combination Drill and Saw Kit

### Universal Motor

Five power driven portable electric tools are built into this kit. One power unit is adapted to all 5 to make an attractive price for so practical a set.

The set includes a portable saw, drill, grinding wheel, buffer, scratch brush, motor stand, accessory arbor and steel carrying case. Specify voltage. Add \$3.00 for 32 or 220 volts.

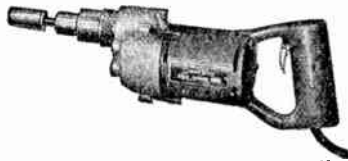


Price, Type 281 ..... each \$37.50



**Speedway Screw-Drivers and Nut-Tighteners**

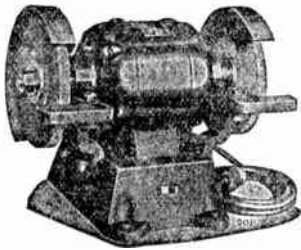
This is a light and compact driver for small and medium sized screws. A simple change from screw-driver tang to nut-socket converts it into nut-tightener.



Housing is of drawn steel, electrically welded to handle. The motor operates on both a.c. and d.c.; 32, 110, or 220 volts. Quick make and break switch, return spring type. Capacity, No. 16 screws up to 2½ inches.

Type.....	155	156
Each.....	\$65.00	75.00
No Load Speed.....r.p.m.	700	700
Driving Speed.....r.p.m.	375	375
Clutch.....	Positive Drive	Positive and Slip Drive
Gear Reduction.....	26 to 1	26 to 1

**Type 122 Speedway Bench Grinders**



Oversize shaft and dust-proof ball-bearings are features of this tool.

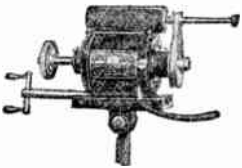
Operates two 6-inch grinding wheels at 3500 r.p.m. Wheels are well guarded. Has adjustable tool rests.

Equipped with ¼-h.p. a.c. or d.c. motor, 110 or 220 volts, not universal.

Weight, 39 pounds.

Type 122, A.C. Only, 110 or 220 Volts.....	each	\$35.00
Type 122, D.C. Only, 110 or 220 Volts.....	each	37.50
Add for 32 or 220 Volts.....		3.00

**Type 108 Speedway Tool Post Grinders Universal Motor**



Type 108 is a precision grinder combining correct speed with accuracy and ample power. Ball-bearing throughout. Speed of bare grinder is 10000 r.p.m.

Standard equipment includes one 2½ and one 4½-inch grinding wheels. Specify voltage.

Price, Type 108.....	each	\$35.00
Add \$3.00 for 32 or 220 volts.		

**Extra Equipment for Types 108 and 110 Grinders**

Price, A, Arm for 3-Inch Internal 30000 R.P.M.	each	\$20.00
Price, D, Arm for 5-Inch Internal 10000 R.P.M.	each	20.00
Price, B, Arm for 10-Inch Internal 10000 R.P.M.	each	30.00
Price, E, Arm for 15-Inch Internal 10000 R.P.M.	each	35.00
Price, C, Arm for Button Die Grinding.....	each	35.00

**Speedway Portable Drill Stands**

The usefulness of a portable drill is greatly increased with the added equipment of a drill stand as shown here.

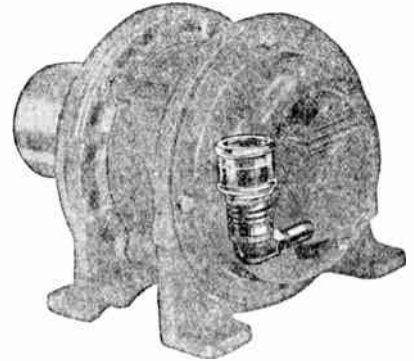
This stand insures perfect alignment and makes drilling a much easier job. A type for each drill is available.



Type	Each	Class	For Use with Drills Types	Weight Pounds
210	\$10.00	B	49, 53, 56	9
214	16.00	B	60	40
220	22.50	A	59	41
221	22.50	A	88, 90, 92	35
223	35.00	A	94, 95, 96, 97	60

**Speedway Oilers**

**Types A and B Constant Level Oilers**



Showing Type A Oil Bearing Installed

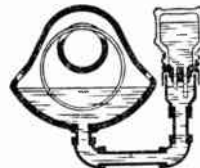
For ring-oiled and waste-packed bearings.

The oil level in the bearing is held at the same height as the opening of the short tube in inverted bottle cap. As soon as the oil gets below this level air enters the jar through this tube, and oil flows out through long tube until level is raised enough to again seal the air opening in the short tube. The oil level cannot vary more than a slight fraction of an inch.

This oiler doubles the capacity of the oil reservoir, so bearings need inspection only half as often. Inspection is simplified and speeded up.

No oil is wasted by this oiler. Every drop goes to the bearing when it is needed.

A glance at the glass tells if oil level is correct. If not, the bottle can be refilled and replaced in an instant. Keep oil in the bottle and the level cannot vary.



For Ring-Oiled Bearings Bottom Opening

Type A oilers are quickly and easily installed on most ring-oiled bearings by connecting directly to the side oil opening.

Type B oilers are used on ring-oiled bearings not having a side opening. They are connected as shown in illustration at left.

Types A or B, 1-Oz. Oil Cap..ea.	\$1.25
Types A or B, 3-Oz. Oil Cap..ea.	1.30

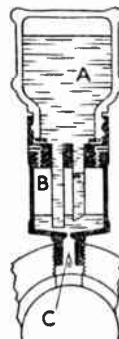
**Type T Thermal Oiler**

For plain sleeve bearings.

When Speedway Thermal Oilers are used on machine bearings it means fewer repairs, longer life and less depreciation.

Oilers are entirely automatic and are so sensitive to the varying needs of a bearing that they operate on a temperature change of 2 degrees.

Main oil supply is held in the glass bottle A from which it flows as needed to the thermal chamber B. Any slight rise in temperature of bearing is communicated to air imprisoned in B, which expands, forcing oil out of small opening C. Ratio of air and oil in chamber B is always the same, thus insuring uniform operation.



Type T-1 Oiler, 1-Ounce Size.....	each	\$1.80
Type T-3 Oiler, 3-Ounce Size.....	each	2.00

## Thor 3/16-Inch Light Production Electric Drills



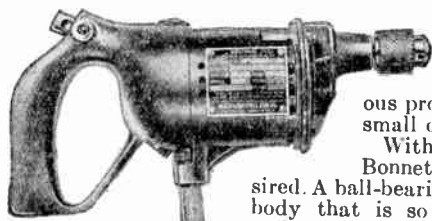
A midget type drill for rapid drilling in small work. Because of its light weight and high power it is particularly adapted for phonograph, radio, piano and automobile work.

Can also be furnished without handle for drilling in close quarters. Equipped with Jacobs chuck.

In ordering, specify voltage desired.

Size.....	ULB
Each.....	\$38.00
Free Speed.....	2300 r.p.m.
Length Over All.....	10 3/4 inches
Weight.....	3 1/4 pounds

## Thor 3/16-Inch Heavy Production Electric Drills



Built to withstand the drilling service of continuous production work for small drilling operations.

With Jacobs chuck.

Bonnet cap furnished if desired. A ball-bearing tool with small body that is so rounded that it makes it easy to grasp.

Specify voltage when ordering.

Size.....	UKC
Each.....	\$42.00
Free Speed.....	3500 r.p.m.
Length Over All.....	11 inches
Weight.....	5 pounds

## Thor 1/4-Inch Light Duty Electric Drills



Particularly built for light work and for intermittent drilling. This tool is receiving wide service for drilling holes

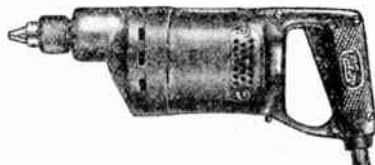
for light manufacturing work.

Large comfortable handle provides a firm, steady grip.

In ordering, specify voltage desired.

Size.....	UXD
Each.....	\$30.00
Free Speed.....	2200 r.p.m.
Length Over All.....	11 3/8 inches
Weight.....	5 3/4 pounds

## Thor 1/4-Inch Heavy Production Electric Drills



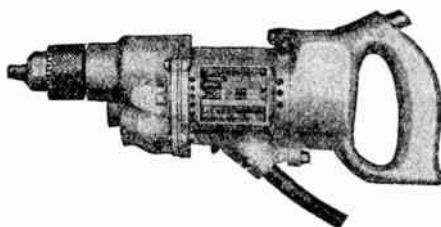
Powerful, rugged drills perfectly balanced with small rounded exterior. Equipped with Jacobs chuck.

Sizes USA and UAC with grip switch; Size UAA with side switch.

In ordering, specify voltage desired.

Size.....	USA	UAC	UAA
Each.....	\$45.00	47.00	47.00
Free Speed.....	2500 r.p.m.	2300	2300
Length Over All.....	12 5/8 inches	13 1/8	13
Weight.....	8 pounds	8 1/4	8 3/4

## Thor 5/16-Inch Heavy Production Electric Drills



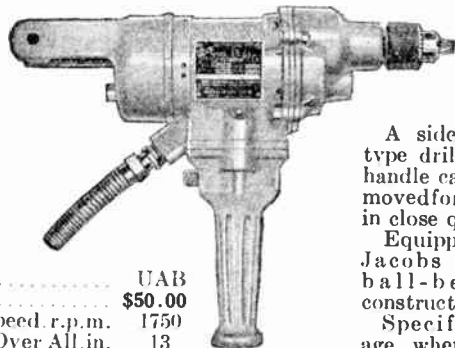
For production drilling in wood or metal.

With Jacobs chuck. Fully balanced and with ball-bearing construction.

In ordering, specify voltage desired.

Size.....	UAD
Each.....	\$50.00
Free Speed.....	1750 r.p.m.
Length Over All.....	13 3/8 inches
Weight.....	8 pounds

## Thor 5/16-Inch Heavy Production Electric Drills



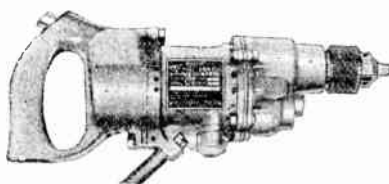
A side switch type drill. Grip handle can be removed for drilling in close quarters.

Equipped with Jacobs chuck; ball-bearing construction.

Specify voltage, when ordering.

Size.....	UAB
Each.....	\$50.00
Free Speed.....	1750 r.p.m.
Lgth. Over All.....	13 inches
Wt.....	8 1/8 lbs.

## Thor 3/8-Inch Heavy Production Electric Drills



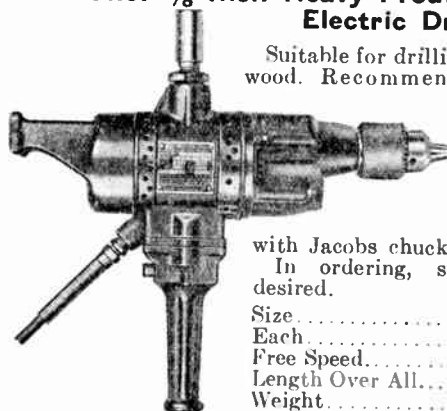
A powerful, sturdy tool. Used mainly in industrial plants and shops where it is necessary to drill all sizes of holes up to and including 3/8 inch.

Equipped with Jacobs chuck.

In ordering, specify voltage desired.

Size.....	UBD
Each.....	\$52.00
Free Speed.....	750 r.p.m.
Length Over All.....	14 inches
Weight.....	9 pounds

## Thor 3/8-Inch Heavy Production Electric Drills

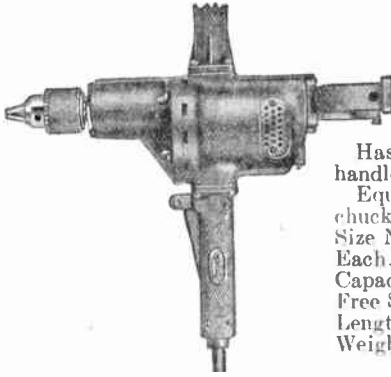


Suitable for drilling deep holes in wood. Recommended for drilling where speed of larger drills is too slow and power of smaller drills is too light.

Equipped with Jacobs chuck. In ordering, specify voltage desired.

Size.....	UCE
Each.....	\$54.00
Free Speed.....	750 r.p.m.
Length Over All.....	15 inches
Weight.....	13 3/4 pounds

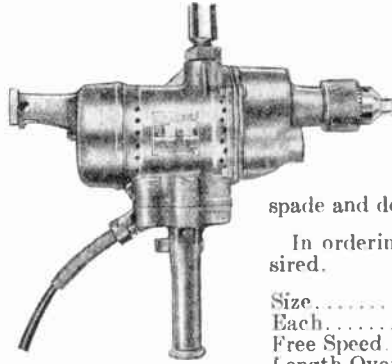
**1/2-Inch Thor Universal Electric Drills**



This is a general purpose drill for either maintenance or production work. Especially adapted for use in a drill stand.

Has combination spade handle and breast plate. Equipped with Jacobs chuck and dead handle.  
 Size Number..... URA  
 Each..... \$55.00  
 Capacity.....in. 1/2  
 Free Speed.....r.p.m. 500  
 Length Over All in. 16 1/2  
 Weight.....lbs. 14 1/2

**Thor 5/8-Inch Heavy Electric Drills**



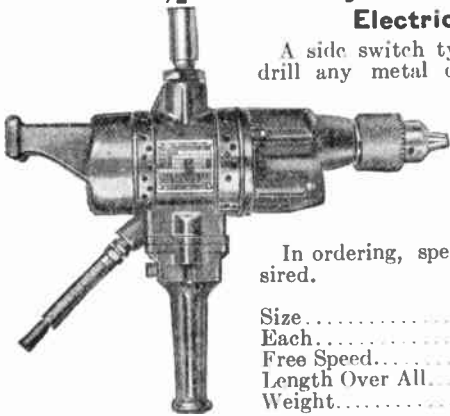
A side heavy duty switch type drill. For drilling and reaming tough materials.

Equipped with either No. 2 Morse Taper Spindle or Jacobs chuck. Has spade and dead handles.

In ordering, specify voltage desired.

Size..... UEN  
 Each..... \$85.00  
 Free Speed.....r.p.m. 400  
 Length Over All.....inches 16 3/4  
 Weight.....pounds 21 1/2

**Thor 1/2-Inch Heavy Production Electric Drills**



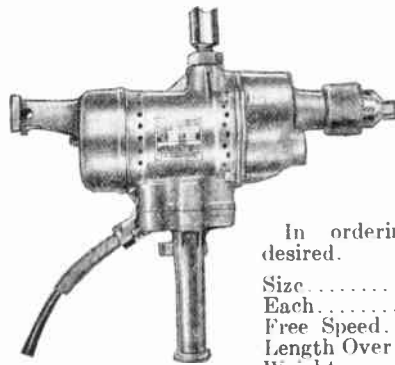
A side switch type drill. Will drill any metal or other material up to its capacity.

Equipped with Jacobs chuck, spade handle and dead handles.

In ordering, specify voltage desired.

Size..... UCL  
 Each..... \$68.00  
 Free Speed.....r.p.m. 550  
 Length Over All.....inches 15 1/4  
 Weight.....pounds 14 1/2

**Thor 3/4-Inch Light Electric Drills**



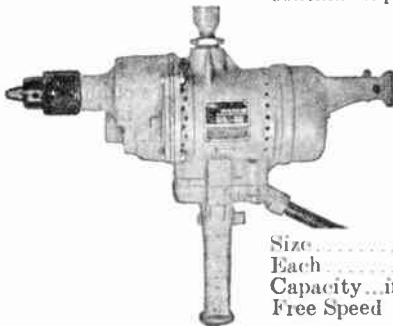
Specially adapted for the hardest kind of service in production shops on a wide variety of work.

Equipped with No. 2 Morse Taper Spindle, spade handle and dead handle. Heavy duty.

In ordering, specify voltage desired.

Size..... UES  
 Each..... \$85.00  
 Free Speed.....r.p.m. 330  
 Length Over All.....inches 16 3/4  
 Weight.....pounds 22

**Thor 1/2 and 9/16-Inch Extra Heavy Production Electric Drills**



Exceptionally rugged tools for continuous production drilling.

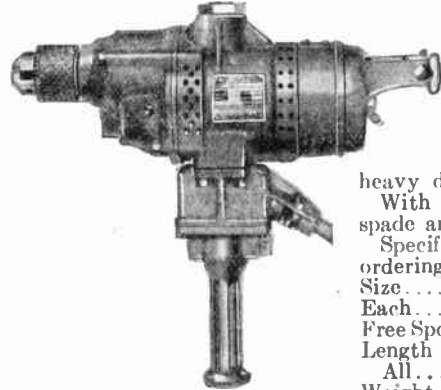
With Jacobs chuck, spade handle, side switch handle and dead handle.

Length over all, 16 1/2 inches. Weight, 20 3/4 pounds.

Specify voltage when ordering.

Size..... UDA UDB  
 Each..... \$70.00 72.00  
 Capacity.....in. 1/2 9/16  
 Free Speed r.p.m. 650 500

**Thor 3/4-Inch Heavy Electric Drills**

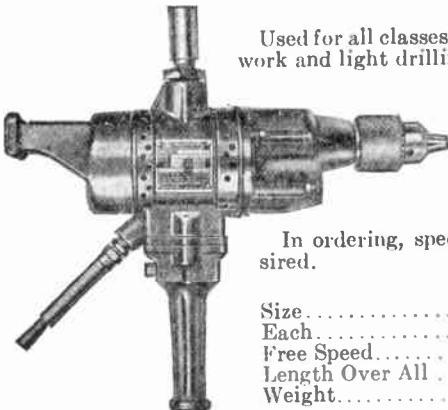


A side switch type drill of extra heavy construction. Suitable for all heavy duty work.

With Jacobs chuck, spade and dead handles. Specify voltage when ordering.

Size..... UFH  
 Each..... \$95.00  
 Free Speed r.p.m. 550  
 Length Over All.....inches 17  
 Weight.....pounds 26 1/2

**Thor 5/8-Inch Medium Electric Drills**



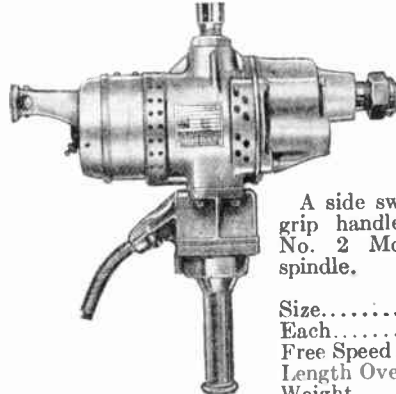
Used for all classes of maintenance work and light drilling.

Equipped with Jacobs chuck, side switch handle, spade handle and dead handle.

In ordering, specify voltage desired.

Size..... UCN  
 Each..... \$76.00  
 Free Speed.....r.p.m. 550  
 Length Over All.....inches 15 3/8  
 Weight.....pounds 15 1/2

**Thor 7/8-Inch Universal Electric Drills**



For heavy production work. Used by manufacturers of heavy machinery, in railway shops and in mine and construction work.

A side switch type drill; with grip handle, dead handle and No. 2 Morse Taper internal spindle.

Size..... UFS  
 Each..... \$96.00  
 Free Speed.....r.p.m. 350  
 Length Over All.....inches 19 1/2  
 Weight.....pounds 27 1/4



## Thor 1 and 1 1/4-Inch Heavy Production Electric Drills



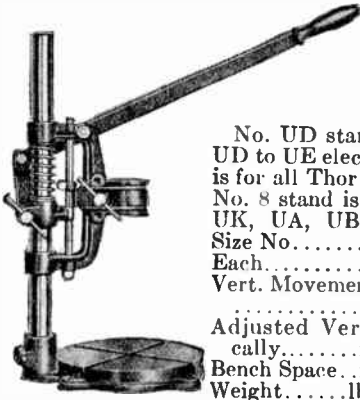
Powerful, sturdy tools for the heaviest type of drilling and reaming.

Equipped with No. 3 Morse Taper spindle, spade and dead handles.

In ordering, specify voltage desired.

Size.....	UFZ	U3Z
Each.....	\$115.00	150.00
Cap.....in.	1	1 1/4
Free Speed		
.....r.p.m.	350	350
Lgth. Over		
All.....in.	20	19 7/8
Wt.....lbs.	29	49 1/2

## Thor Electric Drill Stands

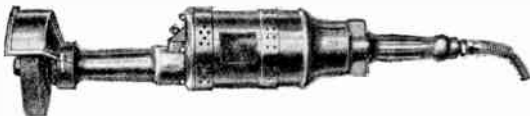


Thor Drill Stands quickly convert a portable electric drill into an accurate, sensitive drill press.

No. UD stand is for all Thor Types UD to UE electric drills; No. UC stand is for all Thor Type UC electric drills; No. 8 stand is for all Thor Types UI, UK, UA, UB, UR and UX drills.

Size No.....	8	UC	UD
Each.....	\$18.00	28.00	28.00
Vert. Movement			
.....in.	3	6 3/4	6 3/4
Adjusted Vertically.....in.	9	17 1/2	16 1/4
Bench Space.....in.	15x9	15x9	15x9
Weight.....lbs.	28	40	40

## No. U60 Thor Universal Electric Grinders

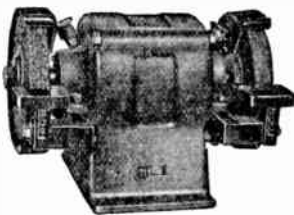


Equipped with super-power motor, special heat-treated gears, large ball bearings. Carries a 6x1-inch wheel. Furnished with straight switch handle and emery wheel guard.

Size No.....	U60
Each.....	\$100.00
Speed, No Load.....	r.p.m. 4000
Length Over All.....	in. 25 3/8
Weight.....	lbs. 17

## No. BG6 Thor Electric Bench Grinders

110 Volts, 60 Cycles, Single-Phase, A. C.



An exceptionally powerful machine designed for 6-inch wheels. Sturdy construction, quiet in operation and free from vibration. Heavy ball bearings on spindle, fully protected from dust and dirt. Extra heavy wheel guards. Tool rests are adjustable and independent from the guards.

Speed, no load, 3600 r.p.m. Size grinding wheels: 6-inch diameter x 1-inch face x 5/8-inch hole. Equipped with switch in base. Cable can be connected to lamp socket. Weight, 40 pounds. Alternating current only.

No. BG6, 110 Volts.....each \$42.00

## Thor Universal Electric Screwdrivers



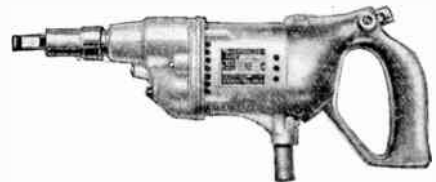
No. ULT for No. 10-24 metal screws. Used for driving small screws and nuts in metal work on radios, phonographs, pianos, automobiles, furniture, etc.

No. ULP for No. 8 wood screws. Designed for cabinet work, radios,

aeroplane assembly and automobile trim work. Both types equipped with Thor double slip clutch attachment which can be adjusted to drive screws to any pre-determined tension.

Size No.....	ULT	ULP
Each.....	\$48.00	50.00
Free Speed.....	r.p.m. 900	450
Length Over All.....	in. 11 1/4	11 1/4
Weight.....	lbs. 3	3

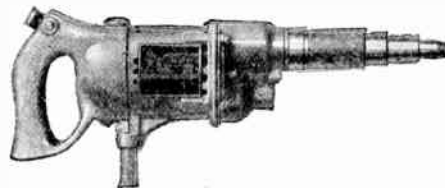
## Thor Universal Electric Screwdrivers



Grip switch type; can be used in all lines of industry that require small screws, cap screws and nuts. Positive Clutch. Capacity, 1/4 inch metal or No. 12 wood screws.

Size No.....	UKG	UKH
Each.....	\$54.00	54.00
Free Speed.....	r.p.m. 750	400
Length Over All.....	inches 12 1/2	12 1/2
Weight.....	pounds 5 1/2	5 1/4
Size of Case to Center of Spindle.....	in. 1 5/16	1 5/16

## Thor Universal Electric Screwdrivers



A grip switch type screwdriver for all light screw and nut driving.

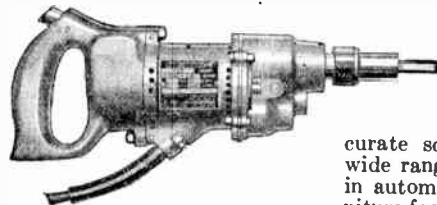
Equipped with double clutch friction type screw driv-

ing attachment with stationary finder.

Capacity, 1/4 inch metal or No. 12 wood screws.

Size.....	UKP
Each.....	\$64.00
Free Speed.....	r.p.m. 400
Length Over All.....	inches 14 3/4
From Side of Case to Center of Spindle.....	inches 1 5/16
Weight.....	pounds 5 3/4

## Thor Universal Electric Screwdrivers



A grip switch screwdriver for Nos. 10 to 16 wood screws.

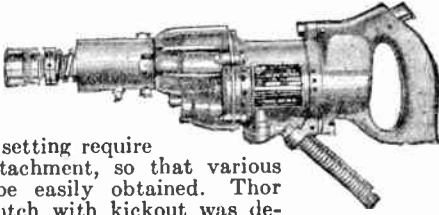
Will do fast, accurate screwdriving on a wide range of work. Used in automotive plants, furniture factories, etc.

Equipped with positive clutch attachment but can be furnished with a variety of attachments for difficult screw and nut driving.

Size.....	UBG
Each.....	\$68.00
Free Speed.....	r.p.m. 750
Length Over All.....	inches 14 1/2
Weight.....	pounds 8 1/2

**Thor 1/4-Inch Universal Electric Nut Setters**

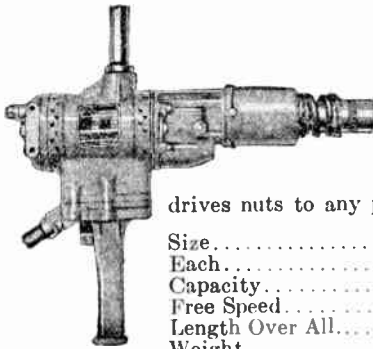
Grip switch type; with No. 140 Thor Kick-Out Nut Driving Attachment.



Nut and bolt setting require elasticity in attachment, so that various tensions may be easily obtained. Thor Double Slip Clutch with kickout was developed for this purpose.

Size.....	UBGN
Each.....	\$80.00
Free Speed.....inches	750
Length Over All.....inches	18
From Side of Case to Center of Spindle.....inches	1 3/16
Weight.....pounds	10 1/4

**Thor Electric Nut Setters for 3/8 and 1/2-Inch Nuts**

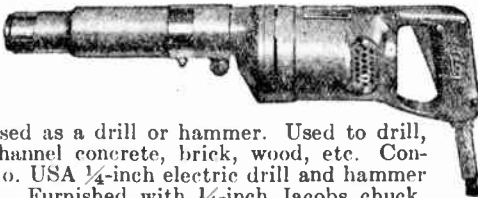


Equipped with suspension cap and hook or grip handle. Has side switch and dead handle.

Has the Thor Double Switch Clutch with kick-out attachment which drives nuts to any pre-determined tension.

Size.....	UEH	UCH
Each.....	\$125.00	105.00
Capacity.....inches	1/2	3/8
Free Speed.....r.p.m.	550	550
Length Over All.....inches	17 1/2	16 1/4
Weight.....pounds	23 1/4	15 1/2

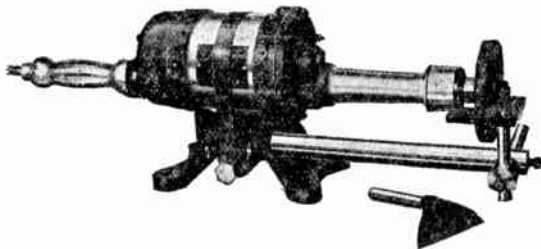
**Thor Universal Electric Hammers**



Can be used as a drill or hammer. Used to drill, chip and channel concrete, brick, wood, etc. Consists of a No. USA 1/4-inch electric drill and hammer attachment. Furnished with 1/4-inch Jacobs chuck, 5/16-inch Star drill, tool holder, ejector pin and carrying case. Capacity in concrete per minute: 1-inch hole, 3 inches deep.

Size.....	USH
Each.....	\$90.00
Blows per Minute.....	3000
Length Over All.....inches	18
Weight Complete.....pounds	16

**Thor Electric Grinder Stands**



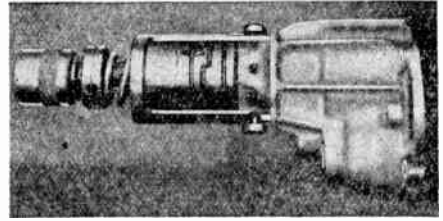
For No. 6 Thor Grinder. Converts a portable electric grinder into a bench grinder. Stand comes complete with adjusting bars and 2 tool rests.

Bench space, 5x7 5/8 inches. Weight, less electric grinder, 10 1/2 pounds.

Each.....	\$15.00
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**Thor Double Slip Clutch and Kick-Out Attachments**

For Screw and Nut Driving



These Thor features guarantee the correct tightness of every nut or screw driven, assuring 100% uniformity and accuracy in the tension of nuts and screws.

Prevents clutch breakage and wear and can be adjusted for any tension.

**Thor Universal Electric Tappers**

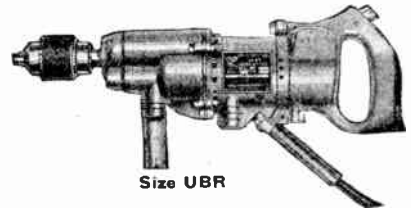


Size UKS

Grip switch type; for tapping or stud driving jobs. Super-power motors, ball-bearing design, special heat-treated gears, etc.

Tappers have the mechanical reversing feature. A slight pull on the machine disengages the forward speed and engages the reverse speed. Can be equipped with Errington Friction Clutch for bottom tapping, or all makes of 1/4-inch stud setting chucks.

Have universal motors; will operate on a.c. or d.c.



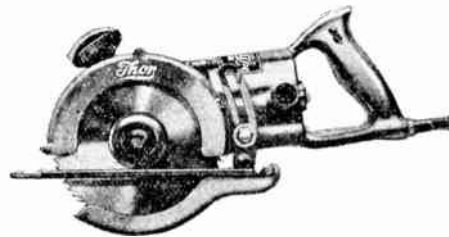
Size UBR

No. UKS is equipped with a 5/16-inch chuck, No. UBR with a 3/8-inch chuck.

From side of case to center of spindle: No. UKS, 1 inch; No. UBR, 1 3/16 inches.

Size No.....	UKS	UBR
Each.....	\$68.00	85.00
Capacity.....inches	1/4	3/8
Free Speed.....r.p.m.	460	500
Length Over All.....inches	15	16 1/2
Weight.....pounds	7 1/2	11 1/2

**Thor Portable Electric Saws**



Suitable for either metal or wood sawing.

When ordering specify type of work so that proper blade or disc can be selected.

No.....	*1	†2	3	4	5	6
All Voltages...ea.	\$45.00	72.00	135.00	150.00	165.00	195.00
Size Blade.....in.	6	6	8	9	10	12
Max. Depth Cut in Wood.....in.	1 7/8	1 7/8	2 3/4	3	3 3/4	4 5/8

\*Light duty. †Heavy duty.



## Vulcan Electric Soldering Irons



Display Board

These electric soldering irons are approved by Underwriters' Laboratories. Can be connected to any lighting socket and will operate with identical results on either a.c. or d.c.

They are wound for standard voltages as follows: 32, 110, 115, 120, 125, 200, 220, 230, 240 and 250 volts. An extra charge of \$1.00 is made for special voltages. Specify voltage when ordering.

Each iron is equipped with a patented, ventilated, adjustable handle, by which it can be lengthened or shortened, and a 6-foot approved heater cord and attachment plug cap.

### No. 10 and No. 20

For finest instruments, smallest fuses, light telephone repairs, radio, and all very light soldering.

No. 20 is recommended for industrial use.

No.	Each	Extra Tip Each	Watts	Equal to Old Style Copper Lbs. per Pair	Diam. Tip In.	Wt. Oz.
*10	\$3.75	\$.30	44	1	3/16	10
20	5.00	.30	50	1	7/16	10

\*No. 10 made only in 32-110-115 and 120 volts.

### No. 30

For radio and home use, fuses, instruments, inspectors' or linemen's tool kits, etc.

30	\$6.25	\$.40	60	1 1/2	1/2	12
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### No. 40

For telephone switchboards, electrical instruments, light manufacturing, fuses and radio. High speed tool.

40	\$7.00	\$.40	90	2 1/2	1/2	13 1/2
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### No. 50

For fast telephone work, art glass, light automobile repairs, light tinware and general home use.

50	\$8.00	\$.65	130	3 1/2	7/8	18
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### No. 60

For light automobile repairs, light tinware, general utility and home use.

60	\$9.25	\$.90	175	4 1/2	1	22
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### No. 70

For medium tinware, general manufacturing, metal patterns and automobile work.

70	\$10.75	\$1.20	220	6	1 1/8	28
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### No. 80

For heavy tinware, sheet steel work, metal boat making, refrigerator work and automobile radiator work.

80	\$12.50	\$1.60	310	7 1/2	1 3/8	37 1/2
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### No. 90

For heavy sheet metal work, large patterns and all heavy soldering.

90	\$14.50	\$2.10	430	10	1 5/8	50 1/2
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## Vulcan Rheostats

Provides more flexible and accurate temperature control in the use of soldering tools. Protects them when not actually delivering their working heat by preventing the unused heat from storing up.

Protects tinning from burning off tip and prolongs life of the winding. Maintains exact degree of temperature required for perfect soldering on any particular job.

For Tool Nos.	Each	For Tool Nos.	Each
10, 20 and 30	\$8.50	60, 70 and 80	\$10.50
40 and 50	9.50	90	12.00

## American Beauty Electric Soldering Irons



No. 3138

All irons except No. 3138 have special baffle-plate construction at shank to prevent free conduction of heat to handles. No. 3138 iron does not need baffle plate.

Copper tips are coated with pure nickel to prevent oxidation and corrosion.

Standard tips regularly supplied. Pointed tips can be supplied in place of chisel tips and vice versa; for No. 3138 iron a special long drawn semi-chisel shaped tip can be furnished in place of standard tip.



No. 3158

Stands are supplied with all irons.

Heating element core is machined from solid steel rod; outer surfaces are impregnated with zinc.

In standard voltage ranges: 100-109, 110-120, 121-130, 190-209, 210-240, 241-260. Will operate on a.c. or d.c. circuits. Can also be supplied for 32 volts.

No. 3138.—Primarily adapted for light work; radio, telephone, telegraph, ignition work, etc.

No. 3158.—For the same purposes as No. 3138 iron and for work of a somewhat heavier nature; for electric starter and ignition manufacturers, repair work, etc.

No. 3178.—For use on heavier work; connections, light commutators and for service and production work.

No. 3198.—For shop, service, production work, etc. Supplies a large volume of heat at high temperature.

Cat. No.	Each	Diam. Tip In.	Watts	Lgth. In.	OVER ALL INCHES		Net POUNDS	Ship.
					Diam.	Net		
3138	\$7.20	3/8	100	12 7/8	7/8	1	2	
3158	8.60	5/8	200	13 3/8	1 1/4	1 3/4	3	
3178	11.50	7/8	300	14 3/8	1 9/16	2 5/8	4	
3198	15.00	1 1/8	550	15	1 3/4	3 3/4	5 3/4	

## G-E Soldering Irons



Cat. Nos. 43X700 and 43X701

These irons are simple in design and construction. There are only 8 different parts. Copper tip surrounds the cartridge type heating unit and all heat generated must pass through the tip. Copper has high heat conductivity, this means quick heating and low watts input.

### For Light Duty

Cat. No.	Each	Complete Irons Diam. Tip In.	Watts	Volts	Net Wt. Oz.	Copper Tips Net Wt. Oz.	Each	Sym- bol	Heating Units Each	Supporting and Radiating Stands Each
43X701	4.95	3/8	100	230	15	1	.30	183X	2.35	.20
291880	5.25	1/2	75	115	15	3	.90	174H	2.35	.20
291882	5.25	1/2	75	230	15	3	.90	174X	2.35	.20

### For Intermittent Duty

291883	\$5.80	3/4	100	115	16	4	\$9.00	175H	\$2.85	\$2.20
291885	5.80	3/4	100	230	16	4	.90	175X	2.85	.20
291886	6.45	1	150	115	27	9	1.20	176H	3.20	.20
291888	6.45	1	150	230	27	9	1.20	176X	3.20	.20

### For Heavy Continuous Duty

291889	*\$9.70	1	225	115	27	9	\$1.00	177H	\$3.20	\$3.00
291891	*9.70	1	235	230	27	9	1.00	177X	3.20	3.00
291892	*11.70	1 1/4	350	115	34	16	1.50	178H	3.50	3.80
291894	*11.70	1 1/4	350	230	34	16	1.50	178X	3.50	3.80

Socket Plug and Heater Cord . . . . . each \$9.90

\*Price includes radiating stand.

†Chisel type tips are employed on all sizes.

‡Excluding stand.



G-E Strip Heaters



Serves the double purpose of air heater and clamp-on heater. A few of the common applications are for: process machinery, drying ovens, matrix scorers, warming tables, glue tables, water baths, drying cabinets, valve and pump houses, pipe lines, etc. Made of steel-sheath, enclosing nickel-chromium resistance wire insulated by magnesium-oxide powder. Heater is  $\frac{25}{64}$  inch thick and  $1\frac{1}{2}$  inches wide. Sheath temperatures, 750° F. or 1200° F. Can be connected in series for use on 440 or 550-volt circuits. For these higher voltages, secondary insulation is recommended, especially at sheath temperatures above 600° F.

Maximum Sheath Temperature, 750° F.

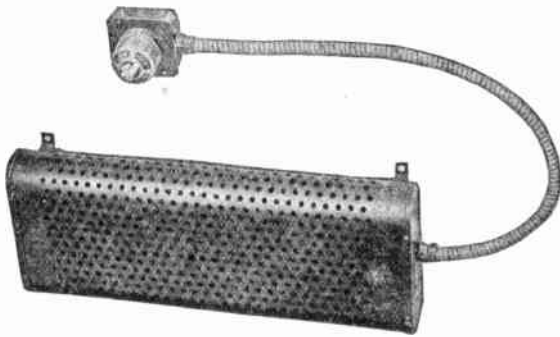
Order by Cat. No.

Terminals at One End	Terminals at Both Ends	Each	Watts	Volts	Length Inches	Approx. Ship. Wt. Lbs.
63X527	.....	\$3.25	1000	230	35 $\frac{1}{2}$	3
63X526	.....	2.75	750	230	30 $\frac{3}{8}$	3
51X340	51X348	2.25	500	115	23 $\frac{1}{2}$	2
51X341	51X349	2.25	500	230	23 $\frac{1}{2}$	2
51X338	51X346	2.10	350	115	17 $\frac{5}{8}$	2
51X339	51X347	2.10	350	230	17 $\frac{5}{8}$	2
51X336	51X344	1.90	250	115	11 $\frac{3}{4}$	2
51X337	51X345	1.90	250	230	11 $\frac{3}{4}$	2
51X334	51X342	1.80	150	115	7	1
51X335	.....	1.80	150	230	7	1

Maximum Sheath Temperature, 1200° F.

63X529	.....	\$5.00	1500	230	35 $\frac{1}{2}$	3
63X528	.....	4.40	1000	230	30 $\frac{3}{8}$	3
45X915	45X923	3.80	750	115	23 $\frac{1}{2}$	2
45X916	45X924	3.80	750	230	23 $\frac{1}{2}$	2
45X913	45X921	3.30	500	115	17 $\frac{5}{8}$	2
45X914	45X922	3.30	500	230	17 $\frac{5}{8}$	2
45X911	45X919	2.90	350	115	11 $\frac{3}{4}$	2
45X912	45X920	2.90	350	230	11 $\frac{3}{4}$	2
45X909	45X917	2.60	200	115	7	1
45X910	.....	2.60	200	230	7	1

G-E Horizontal Industrial Air Heaters



For heating garages, ticket booths, pump houses, etc. Temperature may be controlled within 1 or 2 degrees F. if used in conjunction with G-E Automatic Temperature Control. Consists of a number of strip heaters mounted in black japanned, perforated pressed steel case, 25 $\frac{5}{8}$  inches long, with proper mounting, 3-foot armored cable and 3-heat snap switch.

Wall Mounted

Cat. No.	Each	Watts	Volts	Lgth. Over All In.	Distance Bet. Supporting Screws, In.	Wdth. In.	Ship. Wt. Lbs.
50X14	\$20.00	1000	115	7 $\frac{3}{4}$	8 $\frac{5}{8}$	3 $\frac{5}{8}$	20
50X15	20.00	1000	230	7 $\frac{3}{4}$	8 $\frac{5}{8}$	3 $\frac{5}{8}$	20
50X13	27.00	2000	*230	10 $\frac{7}{16}$	11 $\frac{3}{8}$	3 $\frac{5}{8}$	25
50X7	34.00	3000	*230	14 $\frac{1}{4}$	15 $\frac{1}{8}$	3 $\frac{5}{8}$	30
50X5	45.00	4500	*230	14 $\frac{1}{4}$	15 $\frac{1}{8}$	3 $\frac{5}{8}$	35

Floor Mounted

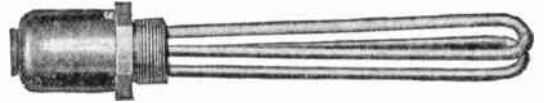
54X146	\$20.00	1000	115	17 $\frac{3}{4}$	10 $\frac{3}{4}$	3 $\frac{5}{8}$	20
54X147	20.00	1000	230	17 $\frac{3}{4}$	10 $\frac{3}{4}$	3 $\frac{5}{8}$	20
54X149	27.00	2000	*230	17 $\frac{3}{4}$	13 $\frac{1}{16}$	3 $\frac{5}{8}$	25
54X151	34.00	3000	*230	17 $\frac{3}{4}$	17 $\frac{1}{4}$	3 $\frac{5}{8}$	30
54X153	45.00	4500	*230	17 $\frac{3}{4}$	17 $\frac{1}{4}$	3 $\frac{5}{8}$	35

\*115-volt heaters are also available. †Height over all.

G-E Immersion Heaters



Single Heat, .75 and 1 Kw.



3 Heats, 1.2 to 10 Kw.



Single Heat, .6 Kw.



3 Heats, 2 Kw.

These heaters offer an economical method of heating liquids in kettles, tanks, metal barrels, etc. They are substantially constructed, utilizing G-E Calrod Sheath Wire.

For heating water, a tinned copper-sheathed unit of high heat density and having a threaded brass header is used. For heating heavier liquids, such as oil and paraffin, a heater having a much lower watts density is used because of possible damage to such liquids and to the heaters caused by carbonization, etc. Steel is used as the sheath and header material in oil-immersion heaters.

For Water Immersion

Cat. No.	Each	No. Heats	Max. Demand Kw.	Volts	Lgth. from End of Unit to Nut on Threaded Collar In.	*Diam. Threaded Collar In.	Lgth. Over All In.	Approx. Ship. Wt. Lbs.
15X820	\$7.90	1	.6	115	5	1 $\frac{1}{4}$	8 $\frac{1}{2}$	2
15X821	7.90	1	.6	230	5	1 $\frac{1}{4}$	8 $\frac{1}{2}$	2
15X822	8.40	1	.75	115	8	1 $\frac{1}{4}$	11 $\frac{1}{2}$	2
15X823	8.40	1	.75	230	8	1 $\frac{1}{4}$	11 $\frac{1}{2}$	2
15X824	9.30	1	1.0	115	10	1 $\frac{1}{4}$	13 $\frac{1}{2}$	2
15X825	9.30	1	1.0	230	10	1 $\frac{1}{4}$	13 $\frac{1}{2}$	2
15X826	11.70	3	1.2	115	8	1 $\frac{1}{4}$	11 $\frac{1}{2}$	3
15X827	11.70	3	1.2	230	8	1 $\frac{1}{4}$	11 $\frac{1}{2}$	3
15X828	13.60	3	2.0	115	10	1 $\frac{1}{4}$	13 $\frac{1}{2}$	3 $\frac{1}{2}$
15X829	13.60	3	2.0	230	10	1 $\frac{1}{4}$	13 $\frac{1}{2}$	3 $\frac{1}{2}$
15X830	16.00	3	2.0	115	1 $\frac{1}{8}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$
15X831	16.00	3	2.0	230	1 $\frac{1}{8}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$
15X832	16.00	3	3.0	115	14	2	18	6
15X833	16.00	3	3.0	230	14	2	18	6
15X834	18.40	3	4.0	115	18	2	22	7
15X835	18.40	3	4.0	230	18	2	22	7
15X836	20.90	3	5.0	115	22	2	26	8
15X837	20.90	3	5.0	230	22	2	26	8
150X595	26.80	3	7.5	230	30	2	34	11
114X426	33.00	3	10.0	230	42	2	46	14

For Oil Immersion

33X825	\$13.60	3	1.0	115	10	1 $\frac{1}{4}$	13 $\frac{1}{2}$	5
33X826	13.60	3	1.0	230	10	1 $\frac{1}{4}$	13 $\frac{1}{2}$	5
32X820	16.00	3	1.5	115	14	2	15	6
32X821	16.00	3	1.5	230	14	2	15	6
32X822	18.40	3	2.0	115	18	2	22	7
32X823	18.40	3	2.0	230	18	2	22	7
15X838	20.70	3	2.5	115	22	2	26	8
115X839	20.70	3	2.5	230	22	2	26	8
32X824	23.00	3	3.0	115	26	2	30	10
32X825	23.00	3	3.0	230	26	2	30	10
32X826	27.70	3	4.0	115	36	2	40	12
32X827	27.70	3	4.0	230	36	2	40	12
32X828	32.30	3	5.0	115	42	2	46	14
32X829	32.30	3	5.0	230	42	2	46	14

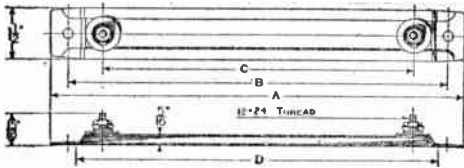
\*Diameter is standard pipe thread of size given.  
 †For operation on 230-volt circuit; can be operated single heat on a 440-volt circuit by running two elements in series. Switches listed should not be used on circuits over 250 volts.  
 ‡Straight thread—not pipe thread.

Snap Switches for Hand Control—250 Volts Maximum

Cat. No.	Each	No. Heats	For Heaters Cat. Nos.
60451	\$ .83	Sgl.	15X820 to 15X825
29X924	1.40	3	15X826 and 15X827 33X825, 33X826, 32X820, 32X821
278607	2.10	3	15X828 to 15X832
278610	4.34	3	32X822 to 32X824, 15X838, 15X839 15X833 to 15X837, 32X825 to 32X829

## Type S Chromalox Electric Strip Heaters

With One Bolt Terminal at Each End  
For 115 or 230 Volts



Dimensions

Size In.	DIMEN., IN.				Size In.	DIMEN., IN.			
	A	B	C	D		A	B	C	D
8	8	7	5	6 1/2	24	23 3/4	22 3/4	20 3/4	22 1/4
9 1/2	9 1/2	8 1/2	6 1/2	8	25 1/2	25 1/2	24 1/2	22 1/2	24
12	12	11	9	10 1/2	26 3/4	26 3/4	25 3/4	23 3/4	25 1/4
14	14	13	11	12 1/2	30 1/2	30 1/2	29 3/8	26 1/2	28
15 1/4	15 1/4	14 1/4	12 1/4	13 3/4	33 1/2	33 1/2	32 3/8	29 1/2	31
18	17 7/8	16 7/8	14 7/8	16 3/8	36	36	34 3/4	31 7/8	33 1/2
19 1/2	19 1/2	18 1/2	16 1/2	18	43	42 5/8	41 3/8	38 1/2	40 1/8
21	21	20	18	19 1/2					

Dimension D indicates over all length of Type 5 heaters.

### Maximum Sheath Temperature 750° F.

(Sheath of Rust-Resisting Iron)

Cat. No.	OVER ALL LENGTH INCHES				Watts
	Each	*Standard	†Type 5		
S-815	\$1.80	8	6 1/2	150	
S-920	1.85	9 1/2	8	200	
S-1225	1.90	12	10 1/2	250	
S-1430	2.00	14	12 1/2	300	
S-1532	2.05	15 1/4	13 3/4	325	
S-1837	2.10	18	16 3/8	375	
S-1850	2.10	18	16 3/8	500	
S-1950	2.15	19 1/2	18	500	
S-2050	2.20	21	19 1/2	500	
S-2425	2.25	24	22 1/2	250	
†S-2450	2.25	24	22 1/2	500	
S-2575	2.40	25 1/2	24	750	
S-2670	2.45	26 3/4	25 1/4	700	
S-3075	2.80	30 1/2	28	750	
S-3375	3.05	33 1/2	31	750	
S-3610	3.25	36	33 1/2	1000	
S-4312	3.85	43	40	1250	

### Maximum Sheath Temperature 1200° F.

(Sheath of Heat-Resisting Chrome Steel)

S-802	\$2.60	8	6 1/2	250
S-903	2.75	9 1/2	8	300
S-1205	2.90	12	10 1/2	500
S-1405	3.05	14	12 1/2	500
S-1505	3.10	15 1/4	13 3/4	500
S-1805	3.30	18	16 3/8	500
S-1807	3.35	18	16 3/8	750
S-1801	3.40	18	16 3/8	1000
S-1905	3.40	19 1/2	18	500
S-1901	3.50	19 1/2	18	1000
S-2005	3.50	21	19 1/2	500
S-2405	3.70	24	22 1/2	500
S-2407	3.70	24	22 1/2	750
S-2401	3.80	24	22 1/2	1000
S-2415	4.00	24	22 1/2	1500
S-2501	3.90	25 1/2	24	1000
S-2607	4.00	26 3/4	25 1/4	750
S-3007	4.40	30 1/2	28	750
S-3301	4.75	33 1/2	31	1000
S-3601	5.00	36	33 1/2	1000
S-4301	5.75	43	40	1500

\*Standard type has fastening tabs at each end with slotted mounting holes 5/16 inch wide by 1/2 inch long for bolting to supports.

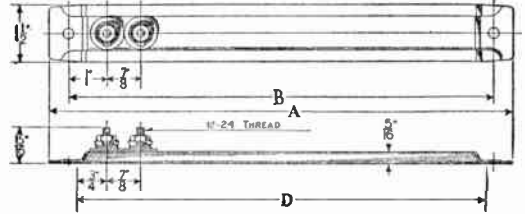
†Type 5 (blunt end) has fastening tabs cut off about 3/4 or 1 1/4 inches depending on over all length from each end for clamp-on applications.

‡Also 250 volts.

When ordering specify if Type 5 is desired, also Cat. No. and voltage.

## Type SE Chromalox Electric Strip Heaters

With 2 Bolt Terminals at One End  
For 115 and 230 Volts



Dimensions

Size In.	DIMEN., IN.				Size In.	DIMEN., IN.			
	A	B	C	D		A	B	C	D
8	8	7	6 1/2	24	23 3/4	22 3/4	20 3/4	22 1/4	24
10 1/2	10 1/2	9 1/2	9	25 1/2	25 1/2	24 1/2	22 1/2	24	24
12	12	11	10 1/2	26 3/4	26 3/4	25 3/4	23 3/4	25 1/4	25 1/4
14	14	13	12 1/2	30 1/2	30 1/2	29 3/8	26 1/2	28	28
15 1/4	15 1/4	14 1/4	13 3/4	33 1/2	33 1/2	32 3/8	29 1/2	31	31
18	17 7/8	16 7/8	16 3/8	38 1/2	38 1/2	37 3/8	34 3/4	36	36
19 1/2	19 1/2	18 1/2	18	43	42 5/8	41 3/8	38 1/2	40 1/8	40 1/8
21	21	20	19 1/2						

Dimension D indicates over all length of Type 5 heaters.

### Maximum Sheath Temperature 750° F.

(Sheath of Rust-Resisting Iron)

Cat. No.	OVER ALL LENGTH INCHES				Watts
	Each	*Standard	†Type 5		
SE-815	\$1.80	8	6 1/2	150	
SE-1025	1.85	10 1/2	9	250	
SE-1225	1.90	12	10 1/2	250	
SE-1430	2.00	14	12 1/2	300	
SE-1532	2.05	15 1/4	13 3/4	325	
SE-1835	2.10	18	16 3/8	350	
SE-1850	2.10	18	16 3/8	500	
SE-1935	2.15	19 1/2	18	350	
SE-1950	2.15	19 1/2	18	500	
SE-2050	2.20	21	19 1/2	500	
SE-2450	2.25	24	22 1/2	500	
SE-2475	2.30	24	22 1/2	750	
SE-2550	2.35	25 1/2	24	500	
SE-2575	2.40	25 1/2	24	750	
SE-2670	2.45	26 3/4	25 1/4	700	
SE-3075	2.80	30 1/2	28	750	
SE-3375	3.05	33 1/2	31	750	
SE-3610	3.25	36	33 1/2	1000	
SE-3880	3.45	38 1/2	36	800	
SE-3810	3.50	38 1/2	36	1000	
SE-4312	3.85	43	40	1250	

### Maximum Sheath Temperature 1200° F.

(Sheath of Heat-Resisting Chrome Steel)

SE-802	\$2.60	8	6 1/2	250
SE-1003	2.80	10 1/2	9	350
SE-1205	2.90	12	10 1/2	500
SE-1405	3.05	14	12 1/2	500
SE-1505	3.10	15 1/4	13 3/4	500
SE-1805	3.30	18	16 3/8	500
SE-1807	3.35	18	16 3/8	750
SE-1801	3.40	18	16 3/8	1000
SE-1905	3.40	19 1/2	18	500
SE-1901	3.50	19 1/2	18	1000
SE-2007	3.50	21	19 1/2	750
SE-2405	3.70	24	22 1/2	500
SE-2407	3.70	24	22 1/2	750
SE-2401	3.80	24	22 1/2	1000
SE-2507	3.85	25 1/2	24	750
SE-2501	3.90	25 1/2	24	1000
SE-2601	4.00	26 3/4	25 1/4	1000
SE-3007	4.40	30 1/2	28	750
SE-3307	4.75	33 1/2	31	750
SE-3801	5.25	38 1/2	36	1000
SE-4301	5.75	43	40	1500

\*Standard type has fastening tabs at each end with slotted mounting holes 5/16 inch wide by 1/2 inch long for bolting to supports.

†Type 5 (blunt end) has fastening tabs cut off about 3/4 or 1 1/4 inches depending on over all length from each end for clamp-on applications.

When ordering specify if Type 5 is desired, also Cat. No. and voltage.

**Chromalox Immersion Heaters**

Types M, MO, CM and CMO



Type M or MO



Type CM or CMO with Switch and Outlet Box

**USES.**—Because of their efficiency, Chromalox Immersion Heaters supply the most economical method for heating fluids in tanks, vats, kettles, boilers, stills and other containers where direct heat energy is desirable. Hundreds of companies are using these durable heaters for heating cleaning solutions, volatile solutions, tempering baths, pickling baths, water, oils, acids, glues, paraffin, syrups, gasoline, caustics and other fluids.

**CONSTRUCTION.**—All Chromalox Immersion Heater blades or heating units proper are similar in construction to Chromalox Strip Heaters having the resistor embedded in refractory material. The heating units are encased in seamless metal tubing or sheath pressed tightly over them, the seamless sheath being welded or brazed to the pipe threaded screw plug making entire unit waterproof and insuring efficient heat transfer.

**OPERATION.**—Single heat heaters have one blade or heating unit while 3-heat immersion heaters have two blades or heating units that can be operated in parallel or series giving full or 1/4 total wattage; operating only one blade or unit of a heater gives 1/2 total wattage. A 440-volt operation, single heat, can be obtained by connecting the two blades or heating units of a 3-heat, 230-volt immersion heater in series. A 3-heat, 115-volt immersion will operate with the two blades in series on 230 volts.

**INSTALLATION.**—Chromalox Immersion Heaters are easily installed. Where tank wall is 3/8 inch thick or more,

simply drill a hole and thread it with either 1 1/4 or 2-inch standard pipe thread, depending upon what immersion heater is used. If tank wall is less than 3/8-inch thick, solder or weld a standard 1 1/4 or 2-inch pipe threaded flange or metal disc to tank wall and install immersion heater.

**Types of Heaters**

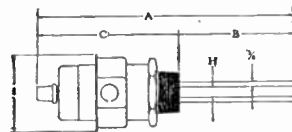
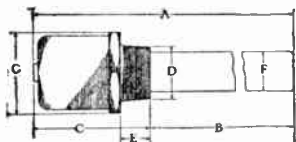
**TYPE M.**—For water heating and solutions that readily absorb generated heat. Regularly supplied with copper sheath and bronze screw plug. *For alkali solutions* where copper is attacked, steel sheath, iron screw plug and welded seam construction is supplied—when specified.

**TYPE CM.**—Same as Type M except furnished with 3-heat switch mounted on outlet box which covers heater terminals, providing for conduit or BX wiring if desired.

**TYPE MO.**—For heating mineral oils, paraffin and other fluids that absorb heat slowly. Supplied with steel sheath, iron screw plug, and brazed seams. Can be furnished with copper sheath and bronze screw plug where steel would be attacked.

**TYPE CMO.**—Same as Type MO except furnished with 3-heat switch mounted on outlet box, which covers heater terminals, providing for conduit or BX wiring if desired.

**NOTE.**—If solution to be heated will attack the standard immersion heater construction, special seamless metal sheathed heaters can be furnished. Write for prices specifying type of solution.



**For Water Heating—Copper Sheath**

Watts	Volts	Heats	Std. Pipe Thrd. In.	Cat. No.	Each	TYPES M and MO Without Hand Control Switch		TYPES CM and CMO With Hand Control Switch and Outlet Box Mounted on Heater				
						A Approx. Over All Length Inches	Heated or Blade Length Inches	Cat. No.	Each	A Approx. Over All Length Inches	B Heated or Blade Length Inches	
500	115 or 230	1	1 1/4	M-150	\$7.50	10 1/4	6	CM-150	\$8.50	13 1/4	6	6
750	115 or 230	1	1 1/4	M-175	8.40	13 3/4	8 3/4	CM-175	9.40	16	8 3/4	8 3/4
1000	115 or 230	1	1 1/4	M-110	9.30	14 3/4	10 1/4	CM-110	10.65	17 1/2	10 1/4	10 1/4
1000	115 or 230	3	1 1/4	M-110-3	11.70	10 1/4	6	CM-110-3	13.05	13 1/4	6	6
1500	115 or 230	3	1 1/4	M-115	12.40	13 1/4	8 3/4	CM-115	13.80	16	8 3/4	8 3/4
2000	115 or 230	3	1 1/4	M-120	13.60	14 3/4	10 1/4	CM-120	15.50	17 1/2	10 1/4	10 1/4
1500	115 or 230	1	2	M-215	11.00	19 1/2	14 1/2	CM-215	12.50	22	14 1/2	14 1/2
2000	115 or 230	1	2	M-220	12.70	25	20 1/2	CM-220	14.60	27 3/4	20 1/2	20 1/2
2000	115 or 230	3	2	M-220-3	13.60	14 3/4	10 1/4	CM-220-3	15.50	17 3/4	10 1/4	10 1/4
2500	115 or 230	3	2	M-225	14.80	17 1/4	13	CM-225	16.70	20 1/4	13	13
3000	115 or 230	3	2	M-230-3	16.00	19	14 1/2	CM-230-3	18.00	22	14 1/2	14 1/2
4000	115 or 230	3	2	M-240	18.40	25	20 1/2	CM-240	22.75	27 3/4	20 1/2	20 1/2
5000	115 or 230	3	2	M-250	20.90	27	22 1/2	CM-250	25.25	30	22 1/2	22 1/2
6000	230 Only	3	2	M-260	23.30	36 1/2	32	CM-260	27.65	39 1/4	32	32
10000	230 Only	3	2	M-201	33.00	50	45	.....	.....	.....	.....	.....

**For Oil Heating—Steel Sheath**

1000	115 or 230	3	1 1/4	MO-110	\$13.60	13 1/4	8 3/4	CMO-110	\$14.95	16	8 3/4	8 3/4
1500	115 or 230	3	2	MO-215	16.00	17 1/4	13	CMO-215	17.40	20 1/4	13	13
2000	115 or 230	3	2	MO-220	18.40	22	17 1/2	CMO-220	19.80	25	17 1/2	17 1/2
2500	115 or 230	3	2	MO-225	20.70	25	20 1/2	CMO-225	22.60	27 3/4	20 1/2	20 1/2
3000	115 or 230	3	2	MO-230	23.00	29	24 1/2	CMO-230	25.00	31 3/4	24 1/2	24 1/2
4000	115 or 230	3	2	MO-240	27.70	36 1/2	32	CMO-240	32.05	40	32	32
5000	115 or 230	3	2	MO-250	32.30	45	40	CMO-250	36.65	48	40	40
6000	230 Only	3	2	MO-260	37.00	50	45	CMO-260	41.35	53	45	45

Specify voltage when ordering.



## Type H Chromalox Electric Air Heaters

Underwriters' Laboratories Approval No. 7601  
For 115, 230, 250, 440 and 550 Volts



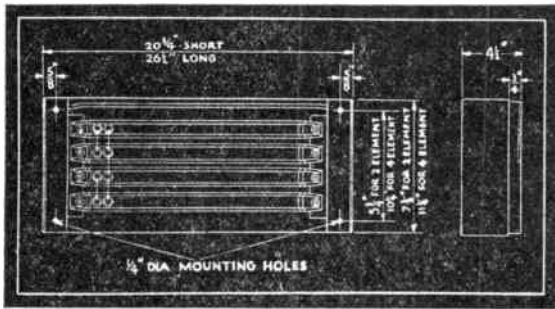
Exterior View of Heater Equipped with 2 Chromalox Units

Designed for those many hard-to-heat places where heat must be concentrated near the floor. Ideal for mounting underneath low windows—the most effective location for electric air heaters. This heater is ideal for use in offices and shops.



Interior View of Heater Equipped with 4 Chromalox Units Showing 3-Heat Switch and Conduit Box Mounted on End of Heater

Heater discharges heated air horizontally into the room where it is needed (not up to the ceiling), thereby providing even heat distribution and eliminating the usual "hot spots" and "cold corners". Mounting side (back part) is always cool, therefore this heater can be fastened to wall or wooden partition without fire hazard.



Showing Over All Dimensions of Heater

Fully Assembled with 3 Feet of Flexible Cable and 3-Heat Switch Mounted on Standard Conduit Box Ready to Connect to Power Line

Cat. No.	Complete Each	Without Switch or Cable Each	No. of Units	Over All Length Inches	Wattage
EH-1801	\$20.00	\$17.00	2	20 $\frac{3}{4}$	1000
EH-2405	23.50	20.50	2	26 $\frac{3}{4}$	1500
*EH-2406	27.00	23.00	4	26 $\frac{3}{4}$	2000
*EH-2407	34.00	29.00	4	26 $\frac{3}{4}$	3000

With 3-Heat Switch and Conduit Box Mounted on End of Heater

Cat. No.	Complete Each	No. of Units	Over All Length Inches	Wattage
EH-S-1801	\$20.00	2	†25	1000
EH-S-2405	23.50	2	†30	1500
*EH-S-2406	27.00	4	†30	2000
*EH-S-2407	34.00	4	†30	3000

\*Can be supplied for 3-heat operation on 440 or 550 volts. All other air heaters listed above can be supplied for single-heat operation on 440 or 550 volts. For 3-heat switch (440-550 volts) add \$4.00 to above prices.

†Including switch.

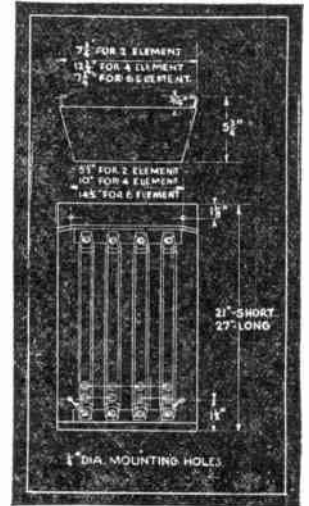
## Chromalox Electric Air Heaters

Underwriters' Laboratories Approval No. 7601

Type V—For 115, 230, 250, 440 and 550 Volts



Exterior View of Heater Equipped with 4 Chromalox Units



Showing Over All Dimensions of Heater

This heater is easily mounted on walls or wooden partitions without fire hazard.

Fully assembled with 3 feet of flexible cable and 3-heat switch mounted on standard conduit box ready to connect to power line.

Cat. No.	Complete Each	Without Switch or Cable Each	No. of Units	Over All Height Inches	Wattage
EII-1010	\$20.00	\$17.00	2	21	1000
*EII-1020	27.00	23.00	4	21	2000
EH-2015	23.50	20.50	2	27	1500
*EH-2020	27.00	23.00	4	27	2000
*EH-2030	34.00	29.00	4	27	3000
†*EH-2040	45.00	39.00	6	27	4500

\*Can be supplied for 3-heat operation on 440 or 550 volts. All other heaters listed can be supplied for single-heat operation on 440 or 550 volts. †For 3-heat switch (440-550 volts) add \$4.00 to above prices.

†The 4500-watt (4.5 kw.) heater can be supplied on order for 3-phase, 2-phase or single-phase operation and the load will be evenly balanced on each phase. If greater heating capacity is required than is supplied by a 4.5 kw. heater, mount two or more heaters side by side and thus secure the necessary total kw. of heater capacity.



Type P—For 115, 230 and 250 Volts

This heater is doubly useful because it meets the frequent requirements calling for a heater that can be quickly moved from one place to another.

Cat. No.	Complete Each	No. of Units	Over All Ht. In.	Wattage
EH-1810	\$20.00	2	22	1000
EH-1820	27.00	4	22	2000
EH-2415	23.50	2	28	1500
EH-2420	27.00	4	28	2000
EH-2430	34.00	4	28	3000

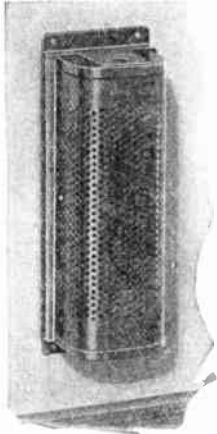
**Type HV Chromalox Electric Air Heaters**

*Underwriters' Laboratories Approval No. 7601*

For 115, 230 and 250 Volts

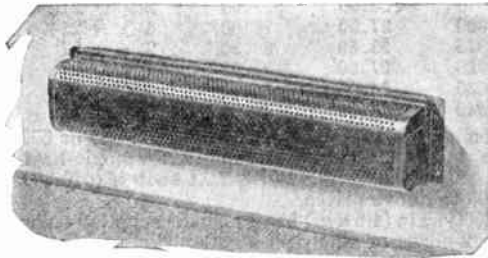
This inexpensive Chromalox auxiliary type heater is being widely adopted by chain stores, telephone companies, etc., for heating small places requiring equipment having the Underwriters' approval. Also being installed in ticket booths, valve houses, fire extinguisher houses, etc., where safe, fumeless, clean heat is a necessity and economy is a factor.

Can be mounted in any position—on walls, floors or ceilings of the space to be heated. Because of the low wattage rating, heater is not equipped with switch, but is shipped from stock ready for direct connection to the power line. If a switch is required, it can be supplied at a nominal additional charge. The low wattage also eliminates the necessity of the patented flue-back, making it possible to supply these heaters at a low price.

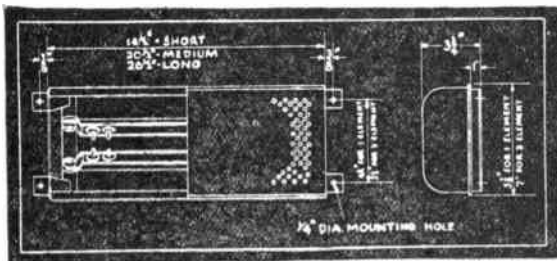


Showing Heater Mounted Vertically on Wall Near Floor

Heater is furnished complete with 6 feet of heater cord and attachment plug.



Showing Heater Mounted on Wall Near Floor



Showing Over All Dimensions of Heater

Cat. No.	Each	No. of Units	OVER ALL DIMEN., IN.			Wattage
			Length	Width	Depth	
EH-122	\$10.00	1	14 1/2	5 7/8	4	250
EH-183	11.00	1	20 1/2	5 7/8	4	375
EH-245	12.00	1	26 1/2	5 7/8	4	500
EH-125	12.00	2	14 1/2	7	4	500
EH-187	14.00	2	20 1/2	7	4	750
EH-241	15.00	2	26 1/2	7	4	1000

**American Beauty Electric Glue Pots**  
Automatic Temperature Control



Nos. 1041, 1042, 1044

Pails are equipped with reversible wiping balls.

Complete with cord, separable connector and attachment plug.

Constructed of aluminum alloy castings with heavy spun seamless copper, nicked, glue containers.

Outer enclosing casings of heavy sheet steel.

Made in the following standard voltage ranges: 95-104, 105-114, 115-125, 190-209, 210-229, 230-250.

Can be used on either d.c. or a.c. circuits.

**Water-Jacketed Type With Water Bath**

In this type the glue pail is immersed in a water bath and the contents thus heated.

Cat. No.	Each	Cap. Qts.	OVER ALL DIMEN. INCHES		INSIDE DIMEN. INCHES			Watt- age	Ship. Wt. Lbs.
			Height	Max. Diam.	Top	Bottom	Depth		
1041	\$27.50	1	6 3/8	8 1/4	4 3/4	4 1/4	4	440	12
1042	34.00	2	7 3/4	10	5 3/4	5 1/2	5 3/8	660	18
1044	54.00	4	10 1/2	12 3/8	7	6 1/4	7	880	30

**Dry Type No Water Bath**

The glue is put directly into the cast aluminum pot.

Separate glue pails to fit into the pot can be furnished if desired.

141	\$21.00	1	6 1/2	7 3/4	4 7/8	4	4 1/8	250	10
142	26.50	2	8 5/8	8 3/4	6	5	5 1/2	350	14
144	37.00	4	10	10	7	6 1/4	7	660	25

**G-E Electric Glue Pots**

Furnished in two types.

The jacketless type has no water jacket and is used for continuous operation; single heat, 145° F. maximum temperature, using aluminum pot for quick heat distribution and prevention of glue sticking to side walls.

The water-jacketed type has 3 heats and is used for quick intermittent service. Water jacket is of cast iron and pot of



copper to which glue will not stick.

The 115-volt pot operates satisfactorily on voltages from 110 to 120; the 230-volt pot on from 220 to 240 volts.

Order by Cat. No. and voltage.

**Jacketless (Single Heat)**

With contact plug, 8-foot cable, socket attaching plug.

Cat. No.	Each	Cap. Qts.	Volts	Watts	Ht.	O.D., IN.		Ship. Wt. Lbs.
						In.	Diam.	
269853	\$16.00	1	115	70	6 1/16	6	4 3/4	
269855	16.00	1	230	70	6 1/16	6	4 3/4	
259989	18.00	2	115	90	7 1/4	7	5 1/2	
259991	18.00	2	230	90	7 1/4	7	5 1/2	
259994	21.00	4	115	140	9 1/8	8 9/16	7 3/8	
259996	21.00	4	230	140	9 1/8	8 9/16	7 3/8	

**Water-Jacketed (3 Heats)**

With contact plug, 8-foot cable, 3-heat plug on cable.

Cat. No.	Each	Com- plete	Less Cover	Cap. Qts.	Volts	Watts			O.D. In.	In. Diam.	Ship. Wt. Lbs.
						Low Heat	Med. Heat	High Heat			
*280486	\$18.00	\$15.25	1	115	75	150	300	6 1/4	7 1/4	25	
*280487	18.00	15.25	1	230	75	150	300	6 1/4	7 1/4	25	
†280488	20.00	17.25	2	115	115	230	460	8 1/4	8 1/4	28	
†280489	20.00	17.25	2	230	115	230	460	8 1/4	8 1/4	28	
†280490	24.00	21.75	4	115	165	330	660	8 1/2	11	40	
†280491	24.00	21.75	4	230	175	330	660	8 1/2	11	40	

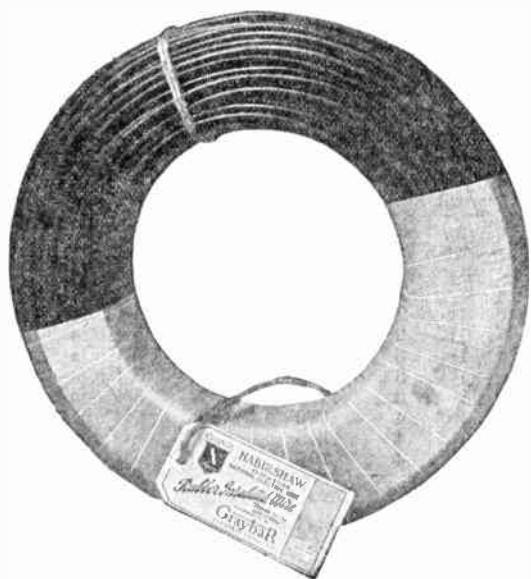
Average time required to heat from 70° F. to 145° F. on high heat: \*45 minutes; †40 minutes; ‡60 minutes.

Average constant temperature in pot at low heat, 145° F.



## Bare and Insulated Wires

### General Information



### Stocks

We carry at our various distributing houses large stocks of wire and cables, which, in addition to the large reserve stock carried by the manufacturers from whom we buy, gives this company a unique and comprehensive assortment. We handle thousands of types of wires, bare and insulated, suitable for general purposes, and, of course, in addition, special wires and cables for aerial, underground, submarine, mine, signal, telephone, and telegraph service.

### Factory Facilities

Factory facilities for the manufacture of rubber covered wires and cables have been continually improved, so that to-day the Graybar Electric Company is in a position to offer its customers unsurpassed facilities for the production of rubber insulated wires, and we are as well able to have produced promptly special wires and cables such as are used by the railroads, the mines and the United States Government.

### Price and Quality

The Graybar Electric Company sells its wires and cables at prices consistent with the quality of material used, and our customers will find that we are in line with other manufacturers producing high grade wire.

### Special Wires

Although the foregoing refers principally to the standard types of rubber covered wire, the same holds good to other classes of insulated wire handled by the Graybar Electric Company. We are in a position to furnish not only material from a large stock of wires and cables, which meet these ordinary specifications, and from which shipment can usually be made as soon as order is received, but we also have exceptional facilities for executing promptly all orders for emergency or special cables even of the most complicated construction.

### Service

Our distributing houses are so well located and our stocks are so large that we are able to give customers service of a quality that cannot be exceeded by any of our competitors in any part of the country, and salesmen can unhesitatingly assure their customers that all stock of Graybar Electric wire receives the most careful scrutiny and inspection by men experienced in that line of work.

## Habirshaw Wire and Cable



### Insulation

Habirshaw wires and cables, distributed by the Graybar Electric Co. are insulated with rubber or varnished cambric. The various types of insulation are briefly described below.

### Black Core Code Grade Compound

Habirshaw Code Compound is a standard compound and, although designed primarily to meet the minimum requirements of the National Electrical Code, it possesses superior electrical, mechanical and chemical properties. Its quality and uniformity are carefully controlled by rigid inspection.

### Engineers Intermediate Grade Compound

Habirshaw Engineers' Grade Compound is an intermediate type, that is, it contains not less than 25 per cent rubber and comes between the Code and Thirty Per Cent grades of insulation. It conforms to the N.E.M.A. Building Wire Specification for Intermediate Insulation. This compound has remarkable natural aging properties and is a satisfactory insulation for use in high-grade building construction where an inexpensive insulation of better than Code grade is required.

### Thirty-Per-Cent Hevea Compounds

Habirshaw 30 per cent Hevea compounds contain not less than 30 per cent of the best grade of new Hevea rubber, carefully compounded. Thirty Per Cent insulation is made in two grades.

1. ASTM-D-27-32-T, Grade A (N.E.M.A. Standard).
2. ASTM-D-27-32-T, Grade AO.

Grade A compound is one not permitting the use of an Anti-oxidant, and has no aging performance requirement.

Grade AO compound is one requiring the use of Anti-oxidant to meet specified aging performance tests.

### Performance Test Compound

Habirshaw Performance type of rubber insulation is a high grade insulation having long life, good electrical and physical properties as well as low water absorption. This insulation conforms to the N.E.M.A. Building Wire Specification for Performance Test Insulation and also to A.S.T.M. Specification D-353-33T for Performance Rubber Compound.

The suitability of this type of compound as insulation is determined solely by physical and electrical tests. No limitations as to the kind or amount of rubber or other ingredients are specified, so as to permit the use of new materials and modern developments in the art, provided rigid tests are complied with. The use of Performance compound will ensure the obtaining of an insulation comparable with the best type of Thirty Per Cent, and one which represents the most advanced progress in compounding unrestricted by chemical analysis.

The above compounds, Black Core, Engineers', Thirty-Per-Cent Hevea and Performance Grade, represent the standard types of insulation used for building wire and cables and low voltage power cables.



**Habirshaw Wire and Cable**

Continued

Some of the special compounds regularly furnished by the Habirshaw Cable and Wire Corporation are briefly described below. Complete specifications and information on these types of insulation will be furnished on request.

**Habirite**

Habirshaw Habirite is a high voltage compound having low water absorption, high dielectric strength, is corona-resistant and has remarkable aging qualities, as indicated by natural life and long time Geer Oven aging tests.

**Performite**

Habirshaw Performite compound represents the most modern development in so-called super-aging compounds. It shows remarkable results in both Oxygen Bomb and Geer Oven aging tests and is the best rubber compound for high temperature and long service life. This compound is standard for I.A.M.E. Fire and Police Signal Cables.

**Forty Per-Cent and Sixty Per-Cent Jacket Compounds**

These compounds are used for abrasion-proof coverings on portable cords, arc-welding cable, mine cable, etc.

**Other Compounds**

In addition to the above, rubber compounds can be furnished which are resistant to oil, acids and alkali.

The Habirshaw Cable and Wire Corporation is in a position, with its well-equipped research laboratories and technical staff, to give expert advice on all special problems.

**Habirshaw**



**Flame-Stop Finish**

The new Code requires that all 600 volt braided building wire must have a flame retarding, moisture-resisting finish. This is one of the most constructive rulings ever introduced, tending to improve the quality of wire along with the improvement of quality in other wiring materials and devices.

Several years ago, Habirshaw, looking to the future, developed Habirshaw Flame-Stop Wire with the required flame retarding finish.

There has been over 200,000,000 feet of Habirshaw Flame-Stop Wire installed in the outstanding buildings of the United States due to the foresight of the leading architects, engineers and electrical contractors.

Habirshaw Flame-Stop Wire is backed up by Habirshaw's policy slogan "Proven by the test of time."

Habirshaw Wires and Cables are also supplied with metallic protective coverings. Lead sheathed cables are carried in stock; steel strip and wire armored and other special coverings are manufactured to order.

**Varnished Cloth Insulation**

Habirshaw varnished cambric insulated cables are manufactured and guaranteed in accordance with I.P.C.E.A. Specifications. Wires and cables of this type may be used at higher operating temperatures than rubber insulated cable and are used for switchboard wiring, feeders and power wiring. They are also used for voltages higher than ordinarily recommended for rubber cables.

**Habirshaw Rubber Covered Braided Solid Wires and Cables**

Single Conductor—600 Volts N.E.C.S.



**Single Braided**

Size A.W.G.	Approved Carrying Capacity Amperes	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package Bundle	Shipping Wt., Lbs. per '000 Feet
*18	3	1	.100	5000	5 Coils	10
*16	6	1	.110	5000	5 Coils	14
18	3	2	.135	5000	5 Coils	14
16	6	2	.145	5000	5 Coils	18
14	15	3	.190	2500	5 Coils	30
12	20	3	.205	2500	5 Coils	40
10	25	3	.225	2500	5 Coils	55
8	35	4	.280	500	†Coil	86
6	50	4	.315	500	†Coil	120
4	70	4	.375	500	†Coil	180

**Double Braided**

14	15	3	.220	2500	5 Coils	36
12	20	3	.235	2500	5 Coils	47
10	25	3	.255	2500	5 Coils	62
8	35	4	.310	500	†Coil	96
6	50	4	.360	500	†Coil	135
4	70	4	.405	500	†Coil	190

\*Fixture wire.

**Habirshaw Rubber Covered Braided Stranded Wires and Cables**

Single Conductor—600 Volts N.E.C.S.



**Single Braided**

Size A.W.G.	Approved Carrying Capacity Amperes	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package Bundle	Shipping Wt., Lbs. per '000 Feet
14	15	3	.195	2500	5 Coils	32
12	20	3	.215	2500	5 Coils	43
10	25	3	.240	2500	5 Coils	59
8	35	4	.300	500	†Coil	93
6	50	4	.355	500	†Coil	135
4	70	4	.400	500	†Coil	195
2	90	4	.460	500	†Coil	285

**Double Braided**

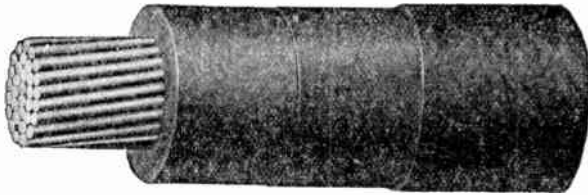
14	15	3	.225	2500	5 Coils	38
12	20	3	.245	2500	5 Coils	50
10	25	3	.270	2500	5 Coils	67
8	35	4	.330	500	†Coil	103
6	50	4	.385	500	†Coil	145
4	70	4	.430	500	†Coil	205
2	90	4	.490	500	†Coil	295
1	100	5	.565	1000	Reel, 30"	435
1/0	125	5	.605	1000	Reel, 36"	560
2/0	150	5	.650	1000	Reel, 36"	660
3/0	175	5	.700	1000	Reel, 36"	780
4/0	125	5	.760	1000	Reel, 36"	930

†Single coils paper wrapped.

NOTE.—Corrugated paper used on reels up to 42 inches, inclusive. Lagging used only when specified. Sizes 48 to 84 inches inclusive, lagged.

## Habirshaw Rubber Covered Braided Stranded Circular Mil Cables

Single Conductors  
600 Volts N. E. C. S.



Size Circular Mils	Approved Carrying Capacity Amperes	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package	Shipping Wt., Lbs. per 1000 Feet
250000	240	6	.840	1000	Reel, 36"	1090
300000	275	6	.895	1000	Reel, 42"	1390
350000	300	6	.945	1000	Reel, 42"	1560
400000	325	6	.990	1000	Reel, 42"	1740
450000	370	6	1.035	1000	Reel, 42"	1905
500000	400	6	1.110	1000	Reel, 42"	2095
600000	450	7	1.220	500	Reel, 42"	2695
650000	...	7	1.255	500	Reel, 42"	2890
700000	500	7	1.290	500	Reel, 42"	3055
750000	...	7	1.325	500	Reel, 42"	3230
800000	550	7	1.360	500	Reel, 42"	3400
900000	600	7	1.420	500	Reel, 42"	3740
1000000	650	7	1.480	500	Reel, 42"	4070
1250000	750	8	1.645	500	Reel, 48"	5490
1500000	850	8	1.770	500	Reel, 48"	6305
1750000	950	8	1.885	500	Reel, 56"	7590
2000000	1050	8	1.990	500	Reel, 56"	8420

Unless otherwise specified the above lengths and packing will be furnished. Where special lengths are required, this should be specially noted on the orders.

NOTE.—Corrugated paper used on reels up to 42 inches, inclusive. Lagging used only when specified. Sizes 48 to 84 inches inclusive, lagged.

## Habirshaw Rubber Covered Braided Wire

Twin Flat Conductor—600 Volts N. E. C. S.



### Solid

Size A.W.G.	Approved Carrying Capacity Amperes	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package Bundle	Shipping Wt., Lbs. per 1000 Feet
14	15	3	.235x.420	500	†Coil	71
12	20	3	.250x.455	500	†Coil	92
10	25	3	.270x.495	500	†Coil	125
8	35	4	.325x.610	500	†Coil	190
6	50	4	.360x.680	1000	Reel, 30"	325

### Stranded

14	15	3	.240x.440	500	Coil	76
12	20	3	.260x.475	500	Coil	99
10	25	3	.285x.525	500	Coil	130
8	35	4	.345x.645	500	Coil	200
6	50	4	.385x.725	1000	Reel, 30"	340

†Single coils paper wrapped.

NOTE.—Corrugated paper used on reels up to 42 inches, inclusive. Lagging used only when specified. Sizes 48 to 84 inches inclusive, lagged.

### Reels

Some sizes and kinds of wires necessarily must be shipped on reels.

In such cases the reels will be billed at cost and credited at full billing value, if returned to mill within six months of shipping date.

Obtain return tags and shipping instructions before shipping reels.

## Habirshaw Rubber Covered Braided Wire 3-Conductor—Solid 600 Volts



Each conductor of the 3-Conductor Rubber Covered House Wire is insulated by Black Core rubber compound. The covering over insulation is a 2 to 6 A.W.G., one rubber filled tape, and an 8 to 14 A.W.G., one saturated braid.

The conductors are grouped by twisting. They are filled with jute, covered by one rubber filled tape. The whole is covered by a saturated cotton braid.

Size A.W.G. Gauge	No. of Strands	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package	Shipping Wt., Lbs. per 1000 Feet
14	1	3	.480	1000	Reel, 30"	185
12	1	3	.515	1000	Reel, 30"	215
10	1	3	.560	1000	Reel, 30"	265
8	1	4	.690	1000	Reel, 36"	410
6	1	4	.760	1000	Reel, 36"	545
4	1	4	.850	1000	Reel, 36"	720

NOTE.—Corrugated paper used on reels up to 42 inches, inclusive, lagging used on above sizes only when specified. Sizes 48 to 84 inches inclusive, lagged.

## Habirshaw Rubber Covered Braided Cable 3-Conductor—Stranded 600 Volts



The 3-conductor stranded code house cable is used under the same conditions as solid 3-conductor code house cable unless greater flexibility is required, especially in larger sizes. Number of conductors, 3.

Range of sizes, 500,000 cm to 14 A. W. G., stranded.

Insulation on each conductor, "Black Core" rubber compound.

Covering over insulation, 500,000 cm to 6 A.W.G., one rubber filled tape, 8 to 14 A. W. G., one saturated braid.

Grouping of conductors, twisted.

Fillers, jute.

Covering over jute, one rubber filled tape.

Covering over all, one saturated braid.

Size A.W.G. Gauge	No. of Strands	Rubber Wall 64th Inch	Approximate O.D. Inches	Std. Pkg. Feet	Type Package	Shipping Wt., Lbs. per 1000 Feet
14	7	3	.500	1000	Reel, 30"	190
12	7	3	.540	1000	Reel, 30"	230
10	7	3	.590	1000	Reel, 30"	280
8	7	4	.735	1000	Reel, 36"	435
6	7	4	.805	1000	Reel, 36"	575
4	7	4	.905	1000	Reel, 42"	890
3	7	4	.970	1000	Reel, 42"	1025
2	7	4	1.040	1000	Reel, 42"	1190
1	19	5	1.225	1000	Reel, 48"	1750
1/0	19	5	1.315	500	Reel, 42"	1985
2/0	19	5	1.410	500	Reel, 48"	2820
3/0	19	5	1.520	500	Reel, 48"	3220
4/0	19	5	1.645	500	Reel, 56"	4185
2500000cm	37	6	1.815	500	Reel, 56"	4715
3000000 "	37	6	1.935	500	Reel, 62"	5280
3500000 "	37	6	2.045	500	Reel, 62"	6540
4000000 "	37	6	2.145	500	Reel, 62"	7115
4500000 "	37	6	2.240	500	Reel, 62"	7655
5000000 "	37	6	2.330	500	Reel, 62"	8210

NOTE.—Corrugated paper used on reels up to 42 inches inclusive, lagging used on above sizes only when specified. Sizes 48 to 84 inclusive, lagged.

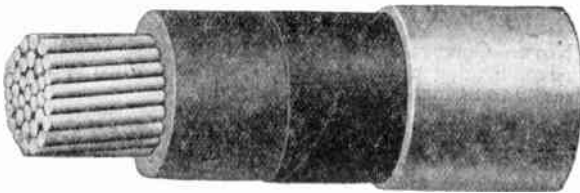
**Habirshaw Rubber and Lead Covered Cable**

**Solid Cable, Single-Conductor**



Size A.W.G.	No. of Strands Concentric	Thickness of Insulation 64ths Inch	Thickness of Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
18	1	2	2	.195	130
16	1	2	2	.205	140
14	1	3	2	.250	170
12	1	3	2	.270	190
10	1	3	3	.320	285
8	1	4	3	.375	335
6	1	4	4	.440	545
4	1	4	4	.485	640

**Stranded, Single-Conductor**  
600 Volts N. E. C. S.



14	7	3	2	.260	175
12	7	3	2	.280	195
10	7	3	3	.335	300
8	7	4	3	.395	445
6	7	4	4	.465	575
4	7	4	4	.510	680
3	7	4	4	.540	745
2	7	4	4	.570	825
1	19	5	4	.645	1015
1/0	19	5	4	.685	1120
2/0	19	5	4	.730	1270
3/0	19	5	4	.780	1440
4/0	19	5	4	.840	1645

C.M.L.	No. of Strands Concentric	Thickness of Insulation 64ths Inch	Thickness of Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
250,000	37	6	5	.950	2355
300,000	37	6	5	1.005	2595
350,000	37	6	5	1.055	2950
400,000	37	6	5	1.100	3180
450,000	37	6	5	1.145	3400
500,000	37	6	5	1.190	3610
600,000	61	7	6	1.330	4665
650,000	61	7	6	1.365	4890
700,000	61	7	6	1.400	5355
750,000	61	7	6	1.435	5575
800,000	61	7	6	1.470	5785
900,000	61	7	6	1.530	6210
1,000,000	61	7	6	1.590	6625
1,250,000	91	8	7	1.790	8645
1,500,000	91	8	7	1.910	9655
1,750,000	127	8	7	2.025	11300
2,000,000	127	8	7	2.130	12305

**Solid Cable, Twin Flat-Conductor**



18	1	2	2	.195x.330	185
16	1	2	2	.205x.350	200
14	1	3	2	.250x.440	255
12	1	3	3	.300x.505	410
10	1	3	3	.320x.545	465
8	1	4	3	.375x.660	560
6	1	4	4	.440x.760	900
4	1	4	4	.485x.845	1075

**Habirshaw Lead Covered Cable**  
**Stranded Twin Flat Conductor**  
600 Volts, N.E.C.S.



Used under the same conditions as stranded single conductor lead covered wire. Sizes range from 0000 to 14 A.W.G., stranded. Black Core rubber compound insulation on each conductor. Rubber filled tape or braid covering over insulation. Conductors grouped parallel. When specified, round cable with 2 conductors twisted will be furnished. Covering over all is lead sheath. Type letter R D L.

Size A.W.G.	No. of Strands Concentric	Thickness of Insulation 64ths Inch	Thickness of Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
14	7	3	2	.260x.455	265
12	7	3	3	.310x.525	430
10	7	3	3	.335x.575	485
8	7	4	3	.395x.695	580
6	7	4	4	.465x.804	955
4	7	4	4	.510x.900	1140
3	7	4	4	.540x.955	1270
2	7	4	4	.570x1.020	1670
1	19	5	5	.675x1.190	2170
1/0	19	5	5	.715x1.275	2550
2/0	19	5	5	.760x1.365	2835
3/0	19	5	5	.810x1.470	3185
4/0	19	5	5	.870x1.585	3835

**Habirshaw Lead Covered Cable**  
600 Volts, N.E.C.S.



Used for 3-phase circuits. Stranded are used where extra flexibility is required in smaller sizes and always in larger sizes where solid conductors would make cable too stiff to handle.

Contains 3 conductors. Sizes range from 500,000 cm. to 14 A. W. G. Each conductor insulated with Black Core rubber compound. Insulation covered by rubber filled tape. Conductors twisted, filled with jute. Rubber-filled tape covering over jute. Lead sheath covering over all.

**Stranded, 3-Conductor Round**

Size A.W.G.	No. of Strands Concentric	Thickness of Insulation 64ths Inch	Thickness of Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs. per 1000 Ft.
14	7	3	3	.550	535
12	7	3	3	.590	600
10	7	3	4	.670	890
8	7	4	4	.805	1060
6	7	4	4	.885	1595
4	7	4	5	1.015	2120
3	7	4	5	1.080	2455
2	7	4	5	1.150	2705
1	19	5	6	1.335	3695
1/0	19	5	6	1.425	4335
2/0	19	5	6	1.520	4785
3/0	19	5	6	1.630	5805
4/0	19	5	7	1.790	6910
250,000	37	6	7	1.960	7710
300,000	37	6	7	2.075	9110
350,000	37	6	7	2.185	9845
400,000	37	6	8	2.319	11145
450,000	37	6	8	2.415	11860
500,000	37	6	8	2.505	12580

**Solid, 3-Conductor Round**

18	1	2	3	.410	375
16	1	2	3	.435	405
14	1	3	3	.530	515
12	1	3	3	.565	575
10	1	3	4	.640	850
8	1	4	4	.770	1005
6	1	4	4	.840	1265
4	1	4	5	.960	2010



## Habirshaw Steel Tape Parkway Cables



Single Conductor



2-Conductor, Flat

Parkway cables are used for transmission and distribution where it is preferable to bury the cables directly in the ground rather than to put them in ducts. Any kind of cable will be furnished with park cable covering, but the following types are in general use for distribution purposes.

Standard parkway cables (0-600 volts). Number of conductors, one to three.

Insulation on each conductor, "Black Core" rubber compound for 5000 volts or less. For higher voltage, special high voltage rubber.

Covering over insulation, rubber filled tape. Covering over tape, lead sheath.

Covering over lead sheath, asphalted jute.

Protective armor, two ungalvanized steel tapes, wound in the same direction, the outer tape covering the spaces between turns of the inner tape.

Outside covering, asphalted jute.

Parkway cables with galvanized steel tapes will be furnished when so specified.

Habirshaw Parkway Cables are made to conform to I.P.C.E.A. standards for rubber insulation and metallic coverings.

### 600 Volts

#### 1-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64ths In.	Thick. Lead Covering 64ths In.	Thick. Steel Tape Armor, In.	Overall O.D., In Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
14	1	3	3	.020	.580	460	520
12	1	3	3	.020	.595	485	545
10	1	3	3	.020	.620	530	630
8	1	4	3	.020	.670	630	730
6	1	4	3	.020	.710	710	810
4	7	4	3	.020	.810	900	1000
2	7	4	4	.020	.900	1230	1330
1	19	5	4	.020	.975	1425	1525
1/0	19	5	4	.020	1.020	1570	1670
2/0	19	5	4	.020	1.060	1740	1970
3/0	19	5	4	.020	1.115	1945	2175
4/0	19	5	5	.020	1.200	2420	2650

#### 2-Conductor Rubber Insulated (Flat)

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64ths In.	Thick. Lead Covering 64ths In.	Thick. Steel Tape Armor, In.	Overall O.D., In Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
14	1	3	3	.020	.615x.805	660	760
12	1	3	3	.020	.630x.835	720	820
10	1	3	4	.020	.685x.910	935	1035
8	1	4	4	.020	.740x1.025	1150	1250
6	1	4	4	.020	.775x1.095	1310	1410
4	7	4	5	.020	.875x1.265	1840	1940
2	7	4	5	.030	1.005x1.455	2460	2690
1	19	5	5	.030	1.075x1.595	2870	3330
1/0	19	5	6	.030	1.150x1.710	3450	4410
2/0	19	5	6	.030	1.195x1.800	3820	4780
3/0	19	5	6	.030	1.250x1.900	4260	5220
4/0	19	5	6	.030	1.305x2.020	4790	5750

#### 3-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64ths In.	Thick. Lead Covering 64ths In.	Thick. Steel Tape Armor, In.	Overall O.D., In Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
14	1	3	4	.020	.890	1050	1150
12	1	3	4	.020	.920	1130	1230
10	1	3	4	.020	.975	1250	1350
8	1	4	4	.020	1.100	1550	1770
6	1	4	5	.020	1.200	2030	2250
4	7	4	5	.030	1.420	2820	3300
2	7	4	5	.030	1.540	3370	4330
1	19	5	6	.030	1.740	4300	5260
1/0	19	5	6	.030	1.825	4760	5720
2/0	19	5	6	.030	1.920	5300	6260
3/0	19	5	6	.030	2.035	5960	7560
4/0	19	5	7	.030	2.190	7210	8800

## Habirshaw Steel Tape Parkway Cables

Continued

### 1500 Volts

#### 1-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64th In.	Thick. Lead Covering 64th In.	Thick. Steel Tape Armor, In.	Overall O.D., In. Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
14	1	5	3	.020	.645	550	650
12	1	5	3	.020	.660	580	680
10	1	5	3	.020	.680	620	720
8	1	5	3	.020	.700	670	770
6	1	6	3	.020	.800	850	950
4	7	6	4	.020	.900	1180	1280
2	7	6	4	.020	.970	1360	1460
1	19	7	4	.020	1.040	1560	1780
1/0	19	7	4	.020	1.080	1710	1930
2/0	19	7	4	.020	1.120	1880	2100
3/0	19	7	5	.020	1.210	2320	2540
4/0	19	7	5	.020	1.270	2580	2800

### 2500 Volts

#### 1-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64th In.	Thick. Lead Covering 64th In.	Thick. Steel Tape Armor, In.	Overall O.D., In. Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
14	1	7	3	.020	.700	640	740
12	1	7	3	.020	.725	670	770
10	1	7	3	.020	.745	720	820
8	1	7	3	.020	.800	820	920
6	1	8	4	.020	.900	1120	1220
4	7	8	4	.020	.970	1310	1410
2	7	8	4	.020	1.030	1500	1600
1	19	8	4	.020	1.070	1630	1850
1/0	19	8	4	.020	1.110	1790	2010
2/0	19	8	4	.020	1.150	1960	2180
3/0	19	8	5	.020	1.240	2400	2880
4/0	19	8	5	.020	1.300	2660	3140

### 3500 Volts

#### 1-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64th In.	Thick. Lead Covering 64th In.	Thick. Steel Tape Armor, In.	Overall O.D., In. Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
14	1	9	3	.020	.800	780	880
12	1	9	3	.020	.820	820	920
10	1	9	3	.020	.840	870	970
8	1	9	4	.020	.895	1090	1190
6	1	9	4	.020	.930	1180	1280
4	7	9	4	.020	1.000	1370	1470
2	7	9	4	.020	1.060	1570	1590
1	19	9	4	.020	1.100	1700	1920
1/0	19	9	4	.020	1.140	1850	2070
2/0	19	9	5	.020	1.220	2260	2740
3/0	19	9	5	.020	1.270	2490	2970
4/0	19	9	5	.020	1.330	2750	3230

### 5000 Volts

#### 1-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64th In.	Thick. Lead Covering 64th In.	Thick. Steel Tape Armor, In.	Overall O.D., In. Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
14	1	10	3	.020	.830	840	940
12	1	10	3	.020	.850	887	987
10	1	10	4	.020	.900	1080	1180
8	1	10	4	.020	.930	1160	1260
6	1	10	4	.020	.960	1250	1350
4	7	10	4	.020	1.030	1450	1550
2	7	10	4	.020	1.090	1650	1870
1	19	10	4	.020	1.130	1780	2000
1/0	19	10	5	.020	1.200	2160	2380
2/0	19	10	5	.020	1.250	2350	2830
3/0	19	10	5	.020	1.300	2570	3050
4/0	19	10	5	.030	1.420	3110	3600

### 2500 Volts

#### 2-Conductor Rubber Insulated (Flat)

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64th In.	Thick. Lead Covering 64th In.	Thick. Steel Tape Armor, In.	Overall O.D., In. Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
8	1	7	5	.020	.860x1.240	1660	1880
6	1	7	5	.020	.900x1.310	1850	2070

### 3500 Volts

#### 2-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64th In.	Thick. Lead Covering 64th In.	Thick. Steel Tape Armor, In.	Overall O.D., In. Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
8	1	9	5	.030	.990x1.430	2150	2370
6	1	9	5	.030	1.020x1.220	2330	2550

### 5000 Volts

#### 2-Conductor Rubber Insulated

Size A.W.G.	No. of Strands Con-centric	Thick. Insulation 64th In.	Thick. Lead Covering 64th In.	Thick. Steel Tape Armor, In.	Overall O.D., In. Finished Cable	Net Wt., Lbs. per 1000 Ft. Finished Cable	Shipping Wt., Lbs. per 1000 Feet
8	1	10	5	.030	1.020x1.490	2290	2770
6	1	10	5	.030	1.050x1.560	2490	2970

**Habirshaw Armored Submarine Cable**

Armored cable, or submarine cable, as it is sometimes called, is used under water for crossing rivers, bays and lakes.

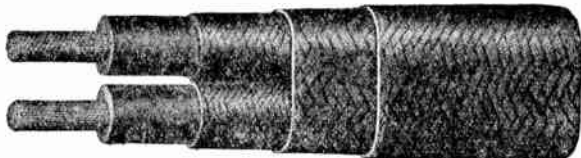
Armored cable may be insulated with paper, varnished cambric or rubber compound. If insulated with paper or varnished cambric, a lead sheath is required. If insulated with rubber compound, a lead sheath is preferable, but may be omitted where the water, in which the cable is to be laid, does not contain injurious impurities and does not attain an unusually high temperature. If the cable is rubber insulated and not lead covered, it has a rubber filled cotton tape.

The leaded or taped core is served with jute yarn, run through hot asphalt compound, then armored with galvanized steel wires, \*run through hot asphalt compound, served with two layers of yarn and finally run through asphalt compound.

The asphalt and jute over the armor may be omitted, if desired.

Upon receipt of inquiry stating the conditions of service, our Engineering Department will furnish additional data.

\*Hot asphalt compound is also applied during armoring at the points where the armor wires come into contact, insuring complete sealing of the armor.

**Habirshaw Mast-arm Cable**

Mast-arm cable is used where a flexible cable, capable of passing over a pulley, is required to connect arc-lamps suspended from a mast-arm or bracket to the feeder line where the lamps must be lowered for maintenance purposes.

Number of conductors, 2. Range of sizes, 6 and 8 A. W. G. Stranding, flexible. Insulation on each conductor, "Black Core" rubber compound. Thickness of insulation, code standard. Covering over insulation, one saturated cotton braid.

Grouping of conductors, parallel. Covering over all, 2 saturated cotton braids.

**Habirshaw Corona-Proof Cable**

This cable is used where rubber insulation is desirable, yet must be proof against the deteriorating effects of the elements and the oxidizing action of Corona discharges. It is a cable insulated with a special rubber compound, especially developed for this service, covered with a layer of tape, enclosed in one or more saturated cotton braids.

This cable is used for aerial distribution circuits at voltages of 2200 and over. Also for special purposes where extra high voltages are used.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.

**Habirshaw Fire Alarm Cable**

Habirshaw Fire Alarm and Police Signalling Cable is used to connect fire alarm and police signal boxes, on the street and in buildings, with department headquarters.

Such cables are usually made to customers' specifications or to the Specifications of the International Association of Municipal Engineers. This latter specification calls for Performite insulation and is recommended as the most satisfactory insulation for this class of cable.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish recommendations and additional data.

**Habirshaw Signal Wire and Cable****American Railroad Association Signal Division Standard**

Railway signal wire is made to conform with the exacting specifications of the American Railroad Association Signal Division Standard and represents the standard engineering practice in this line. Standard practice means a great deal more to the railway signal engineer than to most others, as upon the reliability of signals depends the safety of millions of passengers.

The present American Railroad Association Signal Division Standard specification for rubber insulation is a development resulting from a study of the manufacture, inspection and use of rubber insulated wire extending over a period of many years, by a strong and representative committee of signal engineers who have given considerable time and attention to this subject. The specification has undergone changes in this time and every change has improved the product and confirmed the opinion of signal engineers as to the excellent quality of the insulation which it exacts. Habirshaw also makes a higher grade signal wire known as Habirite signal wire which is recommended for locations where operating conditions are exceptionally severe.

Habirshaw has specialized on A. R. A. Signal wire and makes all standard types including the following:

**Rubber Insulated Signal Wire for 660 Volts or Less**

Number of conductors, one or two.

Range of sizes, 0 to 18 A. W. G., solid.

Insulation on each conductor, A. R. A. Signal Division compound.

Covering over insulation, one cotton braid, weatherproof to A. R. A. specification.

Thickness of insulation, No. 0-2 A. W. G., inclusive,  $\frac{5}{64}$  inch; 4-8 A. W. G., inclusive,  $\frac{3}{64}$  inch; 9-14 A. W. G., inclusive,  $\frac{1}{16}$  inch; 16-18 A. W. G., inclusive,  $\frac{1}{8}$  inch.

Shipped on reels or in coils as ordered. If in coils the following lengths are standard: No. 6. A. W. G., 1000 ft.; 8-12 A. W. G., inclusive, 1500 ft.; 14 A. W. G., 2000 ft.

**Aerial Braided Cable for 660 Volts or Less**

Number of conductors, as specified.

Range of sizes, 4 to 16 A. W. G. (not necessarily all the same size in a given cable).

Insulation on each conductor, A. R. A. Signal Division compound. Can be furnished lead covered if required.

Fillers, dry jute.

Covering over each layer, rubber filled tape.

Covering over all, one saturated cotton braid,  $\frac{3}{64}$  in. thick.

Thickness of insulation, No. 4 A. W. G.,  $\frac{5}{64}$  inch; 6-9 A. W. G., inclusive,  $\frac{3}{64}$  inch; 10-14 A. W. G., inclusive,  $\frac{1}{16}$  inch; 16 A. W. G.,  $\frac{1}{8}$  inch.

Cables of more than three and less than seven conductors are made with jute or sisal center. One wire in each layer is taped for a tracer.

Cables will be shipped on reels.

**Habirshaw Varnished Cambric Insulated Cable**



Varnished cambric insulated cable is used:

a. In power stations and sub-stations for connecting machinery and apparatus of all voltages (see Apparatus Cable and Station Cable).

b. In buildings in place of rubber insulated cable, especially for the larger sizes.

c. For low voltage underground distribution, where special reliability is desired.

d. On vibrating structures where paper insulation cannot be used due to the crystallization of the lead sheath.

Varnished cambric insulation consists of varnished cambric tapes applied helically to the conductor with intervening layers of mineral base grease. The turns of tape overlap and the joints in successive layers are staggered. They are also reversed at least every three layers.

Varnished cambric insulated cable is usually covered as follows:

Apparatus cable, saturated cotton braid.

Station cable, a rubber filled cotton tape and a flameproof braid.

Building mains, a rubber filled cotton tape and two saturated cotton braids.

Underground cable, lead sheath.

Cable for outdoor structures, a rubber filled cotton tape, two galvanized steel tapes, and a layer of asphalted jute under and over the armor.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.

**Habirshaw Tree Wire**



Habirshaw Tree Wire is a single rubber insulated, medium hard-drawn tinned copper conductor, enclosed in protective coverings of rubber-filled tapes, pre-asphalt-saturated jute, fibre tape armor, asphalt and a cotton braid thoroughly saturated and finished with Habirshaw Flame-Stop Finish.

Tree Wire is designed for use on aerial distribution lines consisting nominally of weatherproof wire, but where the lines pass through trees. The insulation for tree wire is not designed to carry the full voltage to ground continuously, as the line insulators carry it under normal conditions. It is only when wet and in contact with a wet tree that the full voltage is carried by the rubber insulation.

**Habirshaw Service Drop Cable**

Service Drop Cable is used for bringing power aerially from the main lines on poles to buildings.

Habirshaw Service Drop Cable is a two or three conductor cable, both conductors of the duplex and two conductors of the triplex being insulated with Type AO 30% Hevea Rubber Compound, covered with two substantial cotton braids, thoroughly saturated with asphaltic compound and finished with Habirshaw Flame-Stop Finish. The neutral conductor of the three conductor cable is without rubber insulation, but covered with three substantial weatherproof braids. Conductors in both types are laid together helically to form a twisted cable, without overall covering.

Size A.W.G. Stranded.....	8	6	4	2
Max. Diameter 2-Conductor.....in.	.78	.86	.95	1.07
Max. Diameter 3-Conductor.....in.	.84	.92	1.03	1.16

**Habirlite  
Habirshaw Headlight Wire  
Single Conductor**



Habirshaw wire is used where resistance to oil heat, sulphur fumes and steam is essential. Standard sizes, 10 to 14 A. W. G., solid. Wrapping, soft cotton wind, saturated. Insulation, heat proof compound insoluble in mineral oils, non-hygroscopic, chemically inert to reagents and flexible to breaking point of wire. Covering, three cotton braids saturated with heat resisting compound.

Size A.W.G.	Diameter Overall Inches	Weight Lbs. per 1000 Ft.	Type of Package	Feet in Package	Shipping Weight of Package
10	.220	51	10 coils in box	10000	540
12	.200	37	10 coils in box	10000	390
14	.190	29	10 coils in box	10000	310

**Habirshaw Battery Charging Cable  
2-Conductor**



Battery charging cable is used for connecting storage batteries of automobiles to the stationary charging outfit. Also used largely by railroads for charging train lighting batteries on electric baggage trucks both in the charging rooms and for boosting while in position under railroad cars and on the baggage trucks. Range of sizes, 0000 to 8 A. W. G., stranded. Insulation on each conductor, "Black Core" rubber compound. Covering over insulation, one saturated braid. Grouping of conductors, twin (flat), except No. 0 and larger, which are round. Fillers, jute (for No. 0 and larger, only). Covering over both conductors, two saturated braids.

Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inches	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
0000	259	5	1.720	2220	Reel	1000	2870
000	133	5	1.590	1750	Reel	1000	2400
00	133	5	1.474	1520	Reel	1000	2170
0	133	5	1.368	1265	Reel	1000	1915
1	91	5	.625x1.160	825	Reel	1000	1205
2	91	4	.560x1.030	645	Reel	1000	825
4	61	4	.495x .900	458	Reel	1000	638
6	61	4	.446x .802	317	Reel	1000	397
8	61	4	.395x .720	210	Reel	1000	310

**Habirshaw Control Cable**



Station control cables are used for the remote control of outdoor or automotive substations and are installed in conduit being either braid or lead covered.

Number of conductors, 1 to 7.

Usual size, 19 No. 22 A. W. G. or 37 No. 22 A. W. G.

Separator, soft cotton wind.

Insulation on each conductor, rubber compound of quality specified.

Thickness of insulation each conductor, 3/64 or 1/64 inch.

Covering over insulation, colored dry cotton braid.

Grouping of conductors, twisted.

Fillers, dry jute.

Covering over filler, one rubber filled tape.

Covering over all, two saturated cotton braids or lead as specified.

It is usual to have a different colored braid on each conductor in order to facilitate the identification of circuits.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.



**Habirshaw Rubber Covered Flexible Cable**



600 Volts						
Size B. & S.	Carrying Amps.	No. of Wires	Size Wires	Rubber Wall In.	Diameter Over All In.	Approx. Wt. per 1000 Feet
0000	225	133	.0399	5/64	.850	900
000	175	133	.0356	5/64	.780	730
00	150	133	.0317	5/64	.725	610
0	125	133	.0282	5/64	.670	490
1	100	133	.0251	5/64	.610	415
2	90	133	.0226	5/64	.550	325
4	70	49	.0291	5/64	.477	212
6	50	49	.0231	5/64	.423	146
8	35	49	.0183	4/64	.321	93
10	25	37	.0168	3/64	.240	55
12	20	19	.0186	3/64	.218	40
14	15	19	.0147	3/64	.198	30

**Habirshaw Mine Cable, Single Conductor Locomotive or Gathering Reel Cable**



Single conductor mine cable is used for operating gathering reel locomotive run on steel tracks which can be used for the return current.

Number of conductors, one.

Range of sizes, 2 to 6 A. W. G., flexible.

Insulation, "Black Core" rubber compound.

Covering over insulation, rubber filled tape.

Covering overall, one extra heavy or seine-twine (as specified), extra tight weatherproof braid.

Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inch	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
2	133	4	.59	337	Reel	1500	685
3	133	4	.55	271	"	1500	586
4	133	4	.52	234	"	1500	431
6	133	4	.46	167	"	1500	330

**Habirshaw Triplex Mine Cable**



Triplex mine cables are used with three-phase motor equipments, and are usually made for pressures up to 600 volts.

Range of sizes, 2 to 8 A.W.G., flexible.

Insulation on each conductor "Black Core" rubber compound.

Covering over insulation, one saturated cotton braid or rubber-filled tape.

Grouping of conductors, twisted.

Fillers, jute.

Covering over filler, rubber filled tape.

Covering over all, one or two saturated extra tight braids.

Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inches	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
2	49	4	1.203	1020	Reel	1500	2180
4	49	4	.997	725	"	1500	1548
6	49	4	.890	525	"	1500	1248
8	49	4	.800	345	"	1500	735

**Habirshaw Twin Mine Cable Flat**



Twin (flat) mine cable is used for gathering reel locomotives, cutting machines, hoists, drills, and other electrical machines in mines.

Number of conductors, two.

Range of sizes, 2 to 8 A.W.G., flexible.

Insulation on each conductor, "Black Core" rubber compound.

Covering over each conductor, one saturated braid.

Grouping of conductors, parallel.

Marker, raised thread in the braid of one conductor.

Covering over all, two or three saturated extra tight braids as specified.

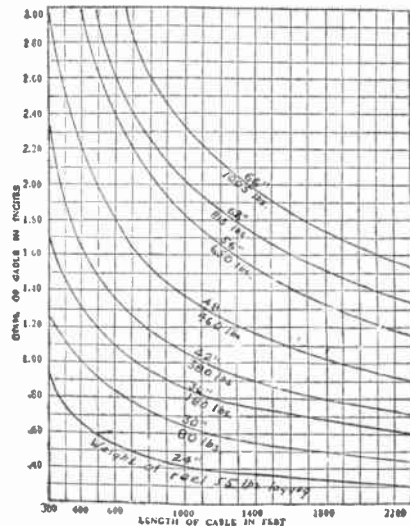
Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inches	Double Braid		Type of Package	Feet in Package	Shipping Weight of Package Lbs.
				Weight per 1000 Feet Lbs.	Feet			
2	49	4	1.094x.592	640	Reel	1500	1340	
3	49	4	1.018x.554	550	"	1500	1205	
4	49	4	.954x.522	460	"	1500	1070	
5	49	4	.898x.494	390	"	1500	965	
6	49	4	.846x.468	325	"	1500	668	
8	49	4	.760x.426	220	"	1500	430	
<b>Triple Braid</b>								
2	49	4	1.139x.637	700	Reel	1500	1430	
3	49	4	1.063x.599	605	"	1500	1288	
4	49	4	.999x.567	510	"	1500	1145	
5	49	4	.943x.539	430	"	1500	1025	
6	49	4	.891x.513	360	"	1500	720	
8	49	4	.805x.471	250	"	1500	575	

**Reel Capacities**

**Curves Showing Reel Capacity for Cable Diameters Up to 3 Inches**

**Example**

Diameter of Cable.....1.60 inches  
 Length of Cable..... 730 feet  
 Reel to Use..... 48-inch



## General Cable Safecote Rubber Insulated Wire and Cable 600 Volts Single Conductor



Solid

Size A.W.G.	Thick Rubber Insu- lation In.	Cur- rent Carry. Cap. Amps.	Single Braid		Tape and Braid or Double Braid	
			Approx. Wt. Lbs. per 1000 Ft.	Approx. Overall Diam. In.	Approx. Wt. Lbs. per 1000 Ft.	Approx. Overall Diam. In.
14	3/64	15	25	.19	29	.22
12	3/64	20	34	.21	38	.24
10	3/64	25	49	.23	54	.26
8	3/64	35	80	.28	85	.32
6	3/64	50	112	.32	120	.36
5	3/64	55	138	.34	148	.38
4	3/64	70	167	.39	175	.42
3	3/64	80	206	.42	213	.45
2	3/64	90	253	.44	261	.48
<b>Stranded (7 Strands)</b>						
14	3/64	15	27	.20	30	.23
12	3/64	20	36	.22	40	.25
10	3/64	25	51	.24	56	.27
8	3/64	35	82	.30	90	.33
6	3/64	50	120	.34	125	.38
5	3/64	55	148	.37	158	.40
4	3/64	70	177	.42	189	.45
3	3/64	80	215	.45	230	.48
2	3/64	90	262	.48	277	.51

### Twin Conductor

Size A.W.G.	Approximate Weight Pounds per 1000 Ft.	Thickness Rubber Insulation Inches	APPROXIMATE O.D., INCHES		Current Carrying Capacity Amperes
			Width	Thick- ness	
14	62	3/64	.41	.22	15
12	82	3/64	.45	.24	20
10	114	3/64	.49	.26	25
8	174	3/64	.60	.32	35
<b>Stranded (7 Strands)</b>					
14	64	3/64	.43	.23	15
12	84	3/64	.47	.25	20
10	124	3/64	.52	.27	25
8	186	3/64	.64	.33	35

### Single Conductor, Stranded Tape and Braid or Double Braid

Tape and braid may be furnished in sizes 6 A.W.G. and larger, at manufacturer's option.

Size A.W.G.	No. of Strands	Approximate Weight Pounds per 1000 Ft.	Thickness Rubber Insulation Inches	Approx- imate O.D. Inches	Current Carrying Capacity Amperes
0	19	443	5/64	.63	125
00	19	540	5/64	.67	150
000	19	663	5/64	.73	175
0000	19	813	5/64	.78	225
C.M.					
250000	37	961	3/32	.86	250
300000	37	1139	3/32	.92	275
350000	37	1300	3/32	.97	300
400000	37	1473	3/32	1.02	325
450000	37	1634	3/32	1.06	360
500000	37	1814	3/32	1.10	400
550000	61	1999	7/64	1.17	425
600000	61	2177	7/64	1.21	450
650000	61	2333	7/64	1.25	475
700000	61	2512	7/64	1.28	500
750000	61	2673	7/64	1.32	525
800000	61	2848	7/64	1.35	550
850000	61	3007	7/64	1.38	575
900000	61	3194	7/64	1.41	600
950000	61	3342	7/64	1.44	625
1000000	61	3530	7/64	1.47	650
1250000	91	4400	3/64	1.64	675
1500000	91	5240	3/64	1.76	850
1750000	127	6060	3/64	1.88	950
2000000	127	6890	3/64	1.98	1050

## General Cable Rubber Insulated and Lead Encased Wire and Cable 600 Volts Single Conductor



Solid

Size A.W.G.	Approximate Weight Pounds per 1000 Ft.	Thickness Rubber Insulation Inches	Thickness Lead Wall Inches	Approx. Diam. Over Lead Inches	Current Carrying Capacity Amperes
16	100	1/32	1/32	.20	6
14	135	3/64	1/32	.25	15
12	153	3/64	1/32	.26	20
10	259	3/64	3/64	.32	25
8	320	3/64	3/64	.36	35
6	488	3/64	3/64	.41	50
5	530	3/64	3/64	.46	55
4	580	3/64	3/64	.48	70
3	645	3/64	3/64	.51	80
2	705	3/64	3/64	.54	90
<b>Stranded—(7 Strands)</b>					
18	98	1/32	1/32	.20	3
16	103	1/32	1/32	.21	6
14	143	3/64	1/32	.26	15
12	162	3/64	1/32	.28	20
10	267	3/64	3/64	.33	25
8	320	3/64	3/64	.38	35
6	517	3/64	3/64	.46	50
5	565	3/64	3/64	.48	55
4	619	3/64	3/64	.51	70
3	685	3/64	3/64	.54	80
2	767	3/64	3/64	.57	90
<b>Stranded—(19 Strands)</b>					
1	931	5/64	5/64	.64	100
0	1061	5/64	5/64	.68	125
00	1195	5/64	5/64	.72	150
000	1362	5/64	5/64	.78	175
0000	1564	5/64	5/64	.83	225

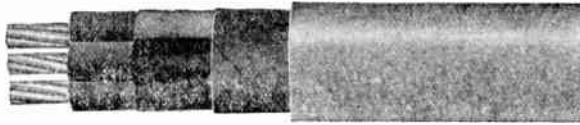
### Parallel Twin



Size A.W.G.	Approx. Wt. Lbs. per 1000 Ft.	Thick. Rubber Insulation Inches	Thickness Lead Wall Inches	APPROX. DIAM. OVER LEAD INCHES		Current Carrying Capacity Amperes
				Width	Thick.	
18	142	1/32	1/32	.33	.19	3
16	164	1/32	1/32	.35	.20	6
14	222	3/64	1/32	.44	.25	15
12	356	3/64	3/64	.50	.30	20
10	410	3/64	3/64	.54	.32	25
8	540	3/64	3/64	.66	.38	35
6	800	3/64	3/64	.76	.44	50
5	885	3/64	3/64	.80	.46	55
4	946	3/64	3/64	.85	.48	70
3	1090	3/64	3/64	.90	.51	80
2	1222	3/64	3/64	.95	.54	90
<b>Stranded—(7 Strands)</b>						
18	157	1/32	1/32	.34	.20	3
16	167	1/32	1/32	.36	.21	6
14	235	3/64	1/32	.45	.26	15
12	376	3/64	3/64	.52	.31	20
10	435	3/64	3/64	.57	.33	25
8	540	3/64	3/64	.66	.38	35
6	852	3/64	3/64	.80	.46	50
5	940	3/64	3/64	.85	.48	55
4	1045	3/64	3/64	.90	.51	70
3	1160	3/64	3/64	.96	.54	80
2	1309	3/64	3/64	1.02	.57	90
<b>Stranded—(19 Strands)</b>						
1	1860	5/64	5/64	1.19	.67	100
0	2117	5/64	5/64	1.27	.71	125
00	2395	5/64	5/64	1.36	.76	150
000	2728	5/64	5/64	1.46	.81	175
0000	3115	5/64	5/64	1.58	.87	225

**General Cable Rubber Insulated and Lead Encased Wire and Cable**

**3-Conductor, Twisted  
600 Volts**



**Solid**

Size A.W.G.	Approximate Weight Pounds per 1000 Ft.	Thickness Rubber Insulation Inches	Thickness Lead Wall Inches	Approx. Diam. Over Lead Inches	Current Carrying Capacity Amperes
18	315	1/32	3/64	.41	3
16	345	1/32	3/64	.44	6
14	466	3/64	3/64	.55	15
12	522	3/64	3/64	.59	20
10	764	3/64	3/64	.66	25
8	960	4/64	4/64	.77	35
6	1168	4/64	4/64	.86	50
5	1525	4/64	5/64	.93	55
4	1666	4/64	5/64	.98	70
3	1870	4/64	5/64	1.03	80
2	2090	4/64	5/64	1.10	90

**Stranded—(7 Strands)**

18	330	1/32	3/64	.44	3
16	365	1/32	3/64	.46	6
14	490	3/64	3/64	.57	15
12	706	3/64	4/64	.65	20
10	807	3/64	4/64	.70	25
8	960	4/64	4/64	.77	35
6	1466	4/64	5/64	.91	50
5	1620	4/64	5/64	.99	55
4	1780	4/64	5/64	1.04	70
3	1986	4/64	5/64	1.11	80
2	2236	4/64	5/64	1.18	90

**Stranded—(19 Strands)**

1	2625	5/64	5/64	1.27	100
0	3340	5/64	6/64	1.39	125
00	3825	5/64	6/64	1.49	150
000	4365	5/64	6/64	1.59	175
0000	5130	5/64	7/64	1.76	225

**Single Conductor, Stranded—Circular Mil Sizes**



Size C.M.	No. of Strands	Approx. Wt. Lbs. per 1000 Ft.	Thick. Rubber Insulation Inches	Thick. Lead Wall Inches	Approx. Diam. Over Lead Inches	Current Carrying Capacity Amperes
250000	37	2027	3/32	5/64	.99	250
300000	37	2266	3/32	5/64	1.04	275
350000	37	2487	3/32	5/64	1.09	300
400000	37	2718	3/32	5/64	1.14	325
450000	37	2930	3/32	5/64	1.18	360
500000	37	3156	3/32	5/64	1.22	400
550000	61	3753	7/64	6/64	1.34	425
600000	61	3977	7/64	6/64	1.37	450
650000	61	4189	7/64	6/64	1.41	475
700000	61	4414	7/64	6/64	1.44	500
750000	61	4621	7/64	6/64	1.48	525
800000	61	4841	7/64	6/64	1.51	550
850000	61	5014	7/64	6/64	1.35	575
900000	61	5261	7/64	6/64	1.57	600
950000	61	5431	7/64	6/64	1.59	625
1000000	61	5683	7/64	6/64	1.63	650
1250000	91	6890	8/64	7/64	1.81	675
1500000	91	7874	8/64	7/64	1.94	850
1750000	127	8885	8/64	7/64	2.05	950
2000000	127	9850	8/64	7/64	2.16	1050

**General Cable Varnished Cambric Wire and Cable**

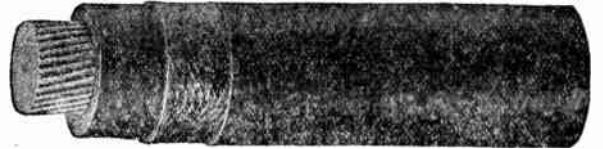
**Aerial — Underground — Submarine**

Made in accordance with I. P. C. E. A. specifications. Varnished cambric forms an insulation which is mechanically strong and rugged and will withstand severe strains during installation and service. Not affected by oils and greases and resists corona and ozone attack.

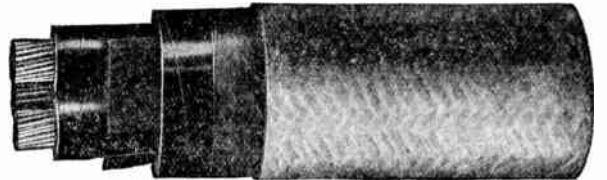
Cables are easily installed; they have high dielectric strength, high permissible operating temperatures, long life and excellent current-carrying capacity. Varnished cambric cables with suitable protective braids are recommended for general interior wiring in stations, substations and industrial plants. For power distribution and transmission a lead sheath is added and for vertical risers in buildings and mine shafts, a steel wire armor is applied. Also available with steel tape armor for park and street illumination and in still other constructions for unusual services and operating conditions.



**Switchboard Wire**



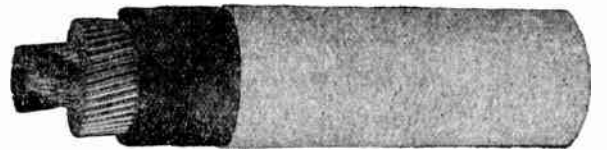
**Brush Holder and Apparatus Cable**



**Braided**



**Lead Sheath**



**Annular Conductors**



**Steel Wire Armor**



**Interlocking Steel Tape**



## General Cable Parkway Cable



Parkway cables are used for boulevards, park systems, and street lighting circuits, or wherever an installation is required to be made directly in the earth, without the use of ducts or conduits. Parkway cable is protected from mechanical injury by two dependable plain flat steel tapes, as well as full weight presaturated jute covering thoroughly treated with hot asphaltic compounds.

### 600 Volts, Solid

#### Single Conductor

Size A.W.G.	No. of Strands	Rubber Wall Inches	Sheath Inches	Approximate O.D. Inches	Approx. Shipping Wt. Lbs. per 1000 Feet
10	1	3/64	3/64	.670	608
8	1	3/64	3/64	.727	732
6	1	3/64	3/64	.761	835
<b>Duplex Flat</b>					
14	1	3/64	3/64	.845x.657	683
12	1	3/64	3/64	.879x.674	750
10	1	3/64	3/64	.952x.726	1002
8	1	3/64	3/64	1.066x.783	1264
6	1	3/64	3/64	1.134x.817	1432
<b>3-Conductor Round</b>					
14	1	3/64	3/64	.934	1218
12	1	3/64	3/64	.971	1334
10	1	3/64	3/64	1.014	1471
8	1	3/64	3/64	1.138	1850
6	1	3/64	3/64	1.243	2418

### 600 Volts, Stranded

#### Single Conductor

Size A.W.G.	No. of Strands	Rubber Wall Inches	Sheath Inches	Approximate O.D. Inches	Approx. Shipping Wt. Lbs. per 1000 Feet
6	7	1/64	3/64	.783	884
4	7	1/64	3/64	.831	1036
2	7	1/64	3/64	.922	1446
1	19	5/64	4/64	.993	1680
0	19	5/64	4/64	1.035	1851
00	19	5/64	4/64	1.079	2058
000	19	5/64	4/64	1.156	2298
0000	19	5/64	4/64	1.245	2886
<b>Duplex Flat</b>					
6	7	1/64	3/64	1.178x.839	1531
4	7	1/64	3/64	1.307x.918	2062
2	7	1/64	3/64	1.485x1.038	2718
1	19	5/64	4/64	1.629x1.109	3206
0	19	5/64	4/64	1.740x1.182	3894
00	19	5/64	4/64	1.834x1.227	4326
000	19	5/64	4/64	1.934x1.278	4843
0000	19	5/64	4/64	2.050x1.336	5460
<b>3-Conductor Round</b>					
6	7	1/64	3/64	1.290	2552
4	7	1/64	3/64	1.463	3360
2	7	1/64	3/64	1.582	4044
1	19	5/64	4/64	1.767	5148
0	19	5/64	4/64	1.855	5712
00	19	5/64	4/64	1.952	6360
000	19	5/64	4/64	2.063	7176
0000	19	5/64	4/64	2.219	8640

### 2500 Volts, Solid

#### Single Conductor

Size A.W.G.	No. of Strands	Rubber Wall Inches	Sheath Inches	Approximate O.D. Inches	Approx. Shipping Wt. Lbs. per 1000 Feet
10	1	7/64	3/64	.795	869
8	1	7/64	3/64	.821	936
6	1	7/64	3/64	.917	1286
<b>Duplex Flat</b>					
10	1	7/64	3/64	1.233x.882	1714
8	1	7/64	3/64	1.276x.908	1860
6	1	7/64	3/64	1.475x1.033	2442
<b>3-Conductor Round</b>					
10	1	7/64	3/64	1.316	2498
8	1	7/64	3/64	1.372	2728
6	1	7/64	3/64	1.571	3589

## General Cable Parkway Cable 2500 Volts (Continued)

### Stranded

#### Single Conductor

Protection—2 plain flat steel tapes.

Size A.W.G.	No. of Strands	Rubber Wall Inches	Sheath Inches	Approximate O.D. Inches	Approx. Shipping Wt. Lbs. per 1000 Feet
6	7	8/64	4/64	.939	1357
4	7	8/64	4/64	.987	1532
2	7	8/64	4/64	1.047	1790
1	19	8/64	4/64	1.087	1940
0	19	8/64	4/64	1.153	2118
00	19	8/64	4/64	1.229	2585
000	19	8/64	4/64	1.281	2864
0000	19	8/64	4/64	1.339	3202

#### Duplex Flat

6	7	8/64	5/64	1.519x1.055	2573
4	7	8/64	5/64	1.615x1.103	2924
2	7	8/64	5/64	1.766x1.194	3757
1	19	8/64	5/64	1.846x1.234	4094
0	19	8/64	5/64	1.928x1.275	4471
00	19	8/64	5/64	2.018x1.320	4900
000	19	8/64	5/64	2.123x1.372	5438
0000	19	8/64	5/64	2.270x1.462	6547

#### 3-Conductor Round

6	7	8/64	5/64	1.619	3805
4	7	8/64	5/64	1.754	4740
2	7	8/64	5/64	1.883	5388
1	19	8/64	5/64	1.969	5988
0	19	8/64	5/64	2.057	6564
00	19	8/64	5/64	2.181	7764
000	19	8/64	5/64	2.297	8628
0000	19	8/64	5/64	2.421	9624

### 3500 Volts

#### Solid

#### Single Conductor

Size A.W.G.	No. of Strands	Rubber Wall Inches	Sheath Inches	Approximate O.D. Inches	Approx. Shipping Wt. Lbs. per 1000 Feet
10	1	9/64	3/64	.857	1000
8	1	9/64	3/64	.914	1254
6	1	9/64	3/64	.948	1375
<b>Duplex Flat</b>					
10	1	9/64	5/64	1.359x.945	2008
8	1	9/64	5/64	1.469x1.030	2365
6	1	9/64	5/64	1.538x1.064	2618
<b>3-Conductor Round</b>					
10	1	9/64	5/64	1.510	3227
8	1	9/64	5/64	1.565	3478
6	1	9/64	5/64	1.638	3854

#### Stranded

#### Single Conductor

6	7	9/64	4/64	.970	1446
4	7	9/64	4/64	1.028	1622
2	7	9/64	4/64	1.078	1873
1	19	9/64	4/64	1.143	2028
0	19	9/64	4/64	1.184	2208
00	19	9/64	4/64	1.259	2696
000	19	9/64	4/64	1.312	2976
0000	19	9/64	4/64	1.370	3302

#### Duplex Flat

6	7	9/64	5/64	1.581x1.086	2743
4	7	9/64	5/64	1.708x1.166	3426
2	7	9/64	5/64	1.829x1.226	3946
1	19	9/64	5/64	1.908x1.266	4285
0	19	9/64	5/64	1.990x1.307	4666
00	19	9/64	5/64	2.080x1.351	5092
000	19	9/64	5/64	2.216x1.404	6109
0000	19	9/64	5/64	2.332x1.494	6774

#### 3-Conductor Round

6	7	9/64	5/64	1.716	4440
4	7	9/64	5/64	1.820	5016
2	7	9/64	5/64	1.949	5784
1	19	9/64	5/64	2.035	6264
0	19	9/64	5/64	2.155	7392
00	19	9/64	5/64	2.251	8100
000	19	9/64	5/64	2.363	8952
0000	19	9/64	5/64	2.488	9960

**General Cable Parkway Cable  
5000 Volts**



Protection—2 plain flat steel tapes.

Size A.W.G.	No. of Strands	Rubber Wall Inches	Sheath Inches	Approximate O.D. Inches	Approx. Shipping Wt., Lbs. per 1000 Feet
<b>Solid Single Conductor</b>					
8	1	10/64	5/64	.946	1342
6	1	10/64	5/64	.980	1464
<b>Duplex Flat</b>					
8	1	10/64	5/64	1.533x1.062	2544
6	1	10/64	5/64	1.601x1.096	2796
<b>3-Conductor Round</b>					
8	1	10/64	5/64	1.634	3758
6	1	10/64	5/64	1.738	4494
<b>Stranded Single Conductor</b>					
6	7	10/64	5/64	1.001	1554
4	7	10/64	5/64	1.050	1710
2	7	10/64	5/64	1.135	1956
1	19	10/64	5/64	1.175	2118
0	19	10/64	5/64	1.247	2570
00	19	10/64	5/64	1.292	2807
000	19	10/64	5/64	1.344	3084
0000	19	10/64	5/64	1.443	3610
<b>Duplex Flat</b>					
6	7	10/64	5/64	1.674x1.148	3250
4	7	10/64	5/64	1.772x1.197	3622
2	7	10/64	5/64	1.882x1.257	4134
1	19	10/64	5/64	1.972x1.297	4474
0	19	10/64	5/64	2.054x1.338	4856
00	19	10/64	5/64	2.176x1.415	5744
000	19	10/64	5/64	2.280x1.436	6336
0000	19	10/64	5/64	2.396x1.525	6996
<b>3-Conductor Round</b>					
6	7	10/64	5/64	1.784	4722
4	7	10/64	5/64	1.889	5292
2	7	10/64	5/64	2.018	6060
1	19	10/64	5/64	2.104	6564
0	19	10/64	5/64	2.223	7716
00	19	10/64	5/64	2.320	8424
000	19	10/64	5/64	2.432	9288
0000	19	10/64	5/64	2.557	10296

**General Cable Single Strip Steel Armored Cable**

Designed to meet requirements for street and boulevard lighting; used in all classes of underground installations requiring insulated copper conductors with a protective covering against mechanical injury. May be used on any type or size conductors, for any standard voltage or under any condition of service ordinarily met with where park cable is used. Used in train control and other service where it is essential to have conductors protected.

This cable is of single strip construction; arch is designed to give maximum mechanical protection against crushing load and at the same time afford flexibility. Joints operate on a ball and socket plan.

Prices upon application.

**General Cable Romex Non-Metallic Sheathed Cable**



Size of Cable	APPROXIMATE WEIGHT POUNDS PER 1000 FT.		Size of Cable	APPROXIMATE WEIGHT POUNDS PER 1000 FT.	
	Approx. Feet per Coil	With Ground Wire		Approx. Feet per Coil	With Ground Wire
14/2	250	108	14/3	200	175
12/2	200	135	12/3	200	210
10/2	200	175	10/3	200	270
8/2	125	248	8/3	125	424
6/2	125	392	6/3	125	608
4/2	125	528	4/3	125	832

**General Cable Enterite Service Drop Cable  
600-Volt Type**



Size A.W.G.	No. of Strands	No. of Conductors	Rubber Wall Thickness Inches	Approx. Overall Diameter Inches	Approx. Weight Pounds per 1000 Ft.
12	1	2	3/64	.505	115
12	7	2	3/64	.525	115
10	1	2	3/64	.545	151
10	7	2	3/64	.570	151
8	1	2	3/64	.600	203
8	7	2	3/64	.635	203
6	7	2	3/64	.770	312
4	7	2	3/64	.870	435
10	1	3	3/64	.585	219
10	7	3	3/64	.610	219
8	7	3	3/64	.675	303
6	7	3	3/64	.825	477
4	7	3	3/64	.930	666

**General Cable Armored Service Entrance Cable**



Size of Cable	8/2	8/3	6/2	6/3	4/3	2/3
Rubber Wall, inches	3/64	3/64	3/64	3/64	3/64	3/64
Approx. O.D., inches	.84	.90	1.00	1.04	1.15	1.28
Approx. Ship. Wt. per 1000 Feet, pounds	720	810	895	1045	1570	1930

**General Cable Barkhide Tree Wire**



Size A.W.G.	Voltage	Ungrounded Neutral		Grounded Neutral	
		Rubber Wall In.	Approx. Overall Diam. In.	Rubber Wall In.	Approx. Overall Diam. In.
8	3000	3/64	.570	5/64	.540
6	3000	3/64	.600	5/64	.570
4	3000	3/64	.640	5/64	.610
2	3000	3/64	.700	5/64	.670
6	5000	10/64	.730	7/64	.630
4	5000	10/64	.770	7/64	.680
2	5000	10/64	.820	7/64	.730
<b>Stranded</b>					
2	3000	3/64	.730	5/64	.700
1	3000	7/64	.800	5/64	.770
0	3000	7/64	.840	5/64	.810
00	3000	7/64	.890	5/64	.860
2	5000	10/64	.860	7/64	.760
1	5000	10/64	.900	7/64	.800
0	5000	10/64	.940	7/64	.840
00	5000	10/64	.980	7/64	.890

## General Cable Trenchlay Cable Power Type 0-600 Volts

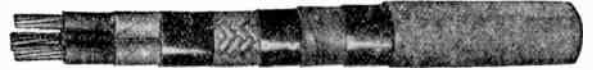


General Cable Trenchlay cable, is the original non-metallic armored cable.

The fundamental principles of Trenchlay are to provide a cable for direct earth installation primarily offering mechanical protection during and after installation.

Trenchlay features in all four types consist of an asbestos braid, a series of Asbestos Base Caulk seals and an improved non-metallic armor.

## General Cable Trenchlay Cable Power Type Grounded or Ungrounded 2001-3000 Volts



When selecting insulation thicknesses, these cables are rated at operating voltages between phases.

For three phase systems with grounded or ungrounded neutral, use thickness values in accordance with the following table.

For single or two phase systems up to and including 3000 volts, use thickness values in accordance with the following table.

Size A W.G.	No. of Conduc- tors	No. of Strands	Rubber Thick- ness Inches	Approximate WEIGHT POUNDS PER 1000 FEET			Size A.W.G.	No. of Conduc- tors	No. of Strands	Rubber Thick- ness Inches	APPROX. WEIGHT POUNDS PER 1000 FEET		
				Approx. O.D. Inches	Net	Ship- ping					Approx. O.D. Inches	Net	Ship- ping
14	1	Solid	3/64	.523	118	158	8	1	Solid	7/64	.7125	281	391
14	2	Solid	3/64	.721	188	268	8	2	Solid	7/64	1.100	484	864
14	3	Solid	3/64	.752	273	353	8	3	Solid	7/64	1.160	698	1078
12	1	Solid	3/64	.540	133	173	6	1	7	8/64	.799	369	589
12	2	Solid	3/64	.755	217	297	6	2	7	8/64	1.273	662	1042
12	3	Solid	3/64	.788	313	533	6	3	7	8/64	1.409	1015	1615
10	1	Solid	3/64	.561	153	263	4	1	7	8/64	.847	450	670
10	2	Solid	3/64	.797	255	475	4	2	7	8/64	1.369	820	1420
10	3	Solid	3/64	.834	367	587	4	3	7	8/64	1.513	1242	1842
8	1	Solid	3/64	.618	195	300	4	1	7	8/64	.907	561	781
8	2	Solid	3/64	.912	336	546	2	2	7	8/64	1.489	1039	1639
8	3	Solid	3/64	.957	467	670	2	3	7	8/64	1.642	1563	2163
6	1	7	3/64	.674	253	333	2	1	19	8/64	.947	639	859
6	2	7	3/64	1.023	469	849	1	2	19	8/64	1.632	1243	1843
6	3	7	3/64	1.077	676	1056	1	3	19	8/64	1.728	1784	2384
4	1	7	3/64	.722	346	426	0	1	19	8/64	.988	737	1117
4	2	7	3/64	1.119	607	987	0	2	19	8/64	1.714	1427	2027
4	3	7	3/64	1.180	879	1259	0	3	19	8/64	1.817	2055	2655
2	1	7	3/64	.782	448	668	00	1	19	8/64	1.034	850	1230
2	2	7	3/64	1.239	823	1203	00	2	19	8/64	1.806	1653	2253
2	3	7	3/64	1.310	1179	1559	00	3	19	8/64	1.916	2389	2989
1	1	19	5/64	.853	545	765	000	1	19	8/64	1.085	989	1369
1	2	19	5/64	1.444	1006	1606	000	2	19	8/64	1.908	1927	2527
1	3	19	5/64	1.526	1538	2138	000	3	19	8/64	2.026	2818	3418
0	1	19	5/64	.896	635	855	000	1	19	8/64	1.143	1168	1548
0	2	19	5/64	1.530	1174	1774	000	2	19	8/64	2.024	2265	2865
0	3	19	5/64	1.618	1793	2393	000	3	19	8/64	2.151	3328	4228
00	1	19	5/64	.941	741	961	C.M.						
00	2	19	5/64	1.620	1393	1993	250000	1	37	9/64	1.221	1352	1732
00	3	19	5/64	1.715	2111	2711	250000	3	37	9/64	2.219	3852	4752
000	1	19	5/64	.991	878	1258	300000	1	37	9/64	1.276	1540	1920
000	2	19	5/64	1.720	1650	2250	300000	3	37	9/64	2.437	4125	5625
000	3	19	5/64	1.823	2513	3113	350000	1	37	9/64	1.390	1787	2387
0000	1	19	5/64	1.051	1051	1431	350000	3	37	9/64	2.547	4990	6190
0000	2	19	5/64	1.840	2055	2655	400000	1	37	9/64	1.437	1971	2571
0000	3	19	5/64	1.952	2991	3591	400000	3	37	9/64	2.649	5684	6884
C.M.							450000	1	37	9/64	1.481	2155	2755
250000	1	37	6/64	1.128	1227	1607	450000	3	37	9/64	2.743	6236	7436
250000	3	37	6/64	2.118	3565	4165	500000	1	37	9/64	1.522	2336	2936
300000	1	37	6/64	1.184	1408	1788	500000	3	37	9/64	2.834	6772	8572
300000	3	37	6/64	2.239	4112	5012	600000	1	61	9/64	1.602	2698	3298
350000	1	37	6/64	1.234	1588	1968	600000	3	61	9/64	3.004	7857	9657
350000	3	37	6/64	2.347	4654	5554	750000	1	61	9/64	1.707	3231	3831
400000	1	37	6/64	1.281	1766	2146	750000	3	61	9/64	3.230	9455	11255
400000	3	37	6/64	2.448	5199	6399	900000	1	61	9/64	1.802	3759	4359
450000	1	37	6/64	1.388	2025	2625	1000000	1	61	9/64	1.861	4105	4705
450000	3	37	6/64	2.543	5738	6938	1250000	1	91	10/64	2.030	5058	5658
500000	1	37	6/64	1.429	2198	2798	1250000	1	91	10/64	2.153	5914	7114
500000	3	37	6/64	2.631	6401	7601	1500000	1	91	10/64	2.290	5788	6988
600000	1	61	7/64	1.540	2595	3195	2000000	1	127	10/64	2.372	7639	8839
600000	3	61	7/64	2.870	7593	9393							
750000	1	61	7/64	1.645	3120	3720							
750000	3	61	7/64	3.096	9168	10968							
900000	1	61	7/64	1.740	3636	4236							
1000000	1	61	7/64	1.799	3975	4575							
1250000	1	91	8/64	1.967	4894	5494							
1500000	1	91	8/64	2.090	5788	6988							
2000000	1	127	9/64	2.309	7487	8687							



**General Cable Trenchlay Cable  
Power Type  
Grounded—Between Conductors  
3001-4000 Volts**



When selecting insulation thicknesses, these cables are rated at operating voltages between phases.

For 3 phase systems with grounded or ungrounded neutral, use thickness values in accordance with the following table.

For single or two phase systems up to and including 4000 volts, use thickness values in accordance with the following table.

Size A.W.G.	No. of Conduc- tors	No. of Strands	Rubber Thick- ness Inches	APPROX. WEIGHT POUNDS PER 1000 FEET		
				Approx. O.D. Inches	Net	Ship- ping
8	1	Solid	$\frac{9}{64}$	.7745	326	516
9	2	Solid	$\frac{9}{64}$	1.224	575	955
9	3	Solid	$\frac{9}{64}$	1.294	825	1205
6	1	7	$\frac{9}{64}$	.830	396	616
6	2	7	$\frac{9}{64}$	1.335	716	1096
6	3	7	$\frac{9}{64}$	1.476	1083	1683
4	1	7	$\frac{9}{64}$	.878	472	692
4	2	7	$\frac{9}{64}$	1.431	865	1465
4	3	7	$\frac{9}{64}$	1.580	1303	1903
2	1	7	$\frac{9}{64}$	.938	589	809
2	2	7	$\frac{9}{64}$	1.614	1154	1754
2	3	7	$\frac{9}{64}$	1.709	1644	2244
1	1	19	$\frac{9}{64}$	.978	674	894
1	2	19	$\frac{9}{64}$	1.694	1301	1901
1	3	19	$\frac{9}{64}$	1.795	1864	2464
0	1	19	$\frac{9}{64}$	1.021	768	1148
0	2	19	$\frac{9}{64}$	1.780	1486	2086
0	3	19	$\frac{9}{64}$	1.888	2141	2741
00	1	19	$\frac{9}{64}$	1.066	887	1267
00	2	19	$\frac{9}{64}$	1.870	1722	2322
00	3	19	$\frac{9}{64}$	1.985	2493	3093
000	1	19	$\frac{9}{64}$	1.116	1027	1407
000	2	19	$\frac{9}{64}$	1.970	1990	2590
000	3	19	$\frac{9}{64}$	2.092	2917	3517
0000	1	19	$\frac{9}{64}$	1.176	1205	1585
0000	2	19	$\frac{9}{64}$	2.090	2333	2933
0000	3	19	$\frac{9}{64}$	2.221	3433	4333
C. M.						
250000	1	37	$\frac{10}{64}$	1.253	1391	1771
250000	3	37	$\frac{10}{64}$	2.388	3969	5269
300000	1	37	$\frac{10}{64}$	1.309	1589	1969
300000	3	37	$\frac{10}{64}$	2.508	4540	5740
350000	1	37	$\frac{10}{64}$	1.422	1829	2429
350000	3	37	$\frac{10}{64}$	2.616	5252	6452
400000	1	37	$\frac{10}{64}$	1.469	2016	2616
400000	3	37	$\frac{10}{64}$	2.717	5809	7009
450000	1	37	$\frac{10}{64}$	1.513	2202	2802
450000	3	37	$\frac{10}{64}$	2.812	6366	7566
500000	1	37	$\frac{10}{64}$	1.554	2382	2982
500000	3	37	$\frac{10}{64}$	2.900	6905	8705
600000	1	61	$\frac{10}{64}$	1.634	2747	3347
600000	3	61	$\frac{10}{64}$	3.073	7997	9797
750000	1	61	$\frac{10}{64}$	1.739	3285	3885
900000	1	61	$\frac{10}{64}$	1.834	3811	4411
1000000	1	61	$\frac{10}{64}$	1.893	4169	4759
1250000	1	91	$\frac{11}{64}$	2.061	5119	5719
1500000	1	91	$\frac{11}{64}$	2.179	5980	7180
2000000	1	127	$\frac{11}{64}$	2.403	7711	8911

**General Cable Trenchlay Cable  
Power Type  
Grounded—Between Conductors  
4001-5000 Volts**



When selecting insulation thicknesses, these cables are rated at operating voltages between phases.

For three phase systems with grounded or ungrounded neutral, use thickness values in accordance with the following table.

For single or two phase systems up to and including 5000 volts, use thickness values in accordance with the following table.

Size A.W.G.	No. of Conduc- tors	No. of Strands	Rubber Thick- ness Inches	APPROX. WEIGHT POUNDS PER 1000 FEET		
				Approx. O.D. Inches	Net	Ship- ping
8	1	Solid	$\frac{10}{64}$	.8065	349	539
8	2	Solid	$\frac{10}{64}$	1.288	623	1003
8	3	Solid	$\frac{10}{64}$	1.425	956	1556
6	1	7	$\frac{10}{64}$	.862	420	640
6	2	7	$\frac{10}{64}$	1.399	766	1366
6	3	7	$\frac{10}{64}$	1.545	1154	1754
4	1	7	$\frac{10}{64}$	.910	500	720
4	2	7	$\frac{10}{64}$	1.495	917	1517
4	3	7	$\frac{10}{64}$	1.648	1380	1980
2	1	7	$\frac{10}{64}$	.970	618	838
2	2	7	$\frac{10}{64}$	1.678	1207	1807
2	3	7	$\frac{10}{64}$	1.778	1726	2326
1	1	19	$\frac{10}{64}$	1.010	704	1084
1	2	19	$\frac{10}{64}$	1.758	1357	1957
1	3	19	$\frac{10}{64}$	1.864	1953	2553
0	1	19	$\frac{10}{64}$	1.053	801	1181
0	2	19	$\frac{10}{64}$	1.844	1517	2147
0	3	19	$\frac{10}{64}$	1.956	2224	2824
00	1	19	$\frac{10}{64}$	1.098	924	1304
00	2	19	$\frac{10}{64}$	1.934	1776	2376
00	3	19	$\frac{10}{64}$	2.054	2595	3195
000	1	19	$\frac{10}{64}$	1.148	1067	1447
000	2	19	$\frac{10}{64}$	2.034	2057	2657
000	3	19	$\frac{10}{64}$	2.161	3019	3919
0000	1	19	$\frac{10}{64}$	1.208	1248	1623
0000	2	19	$\frac{10}{64}$	2.154	2401	3301
0000	3	19	$\frac{10}{64}$	2.291	3540	4440
C.M.						
250000	1	37	$\frac{11}{64}$	1.284	1428	1808
250000	3	37	$\frac{11}{64}$	2.455	4084	5284
300000	1	37	$\frac{11}{64}$	1.402	1678	2278
300000	3	37	$\frac{11}{64}$	2.573	4655	5855
350000	1	37	$\frac{11}{64}$	1.453	1871	2471
350000	3	37	$\frac{11}{64}$	2.683	5376	6576
400000	1	37	$\frac{11}{64}$	1.500	2058	2658
400000	3	37	$\frac{11}{64}$	2.784	5939	7739
450000	1	37	$\frac{11}{64}$	1.544	2235	2835
450000	3	37	$\frac{11}{64}$	2.879	6468	8368
500000	1	37	$\frac{11}{64}$	1.586	2426	3026
500000	3	37	$\frac{11}{64}$	2.970	7037	8937
600000	1	61	$\frac{11}{64}$	1.665	2794	3394
750000	1	61	$\frac{11}{64}$	1.770	3336	3936
900000	1	61	$\frac{11}{64}$	1.865	3867	4467
1000000	1	61	$\frac{11}{64}$	1.924	4216	4816
1250000	1	91	$\frac{12}{64}$	2.092	5181	6381
1500000	1	91	$\frac{12}{64}$	2.215	6044	7244
2000000	1	127	$\frac{12}{64}$	2.434	7783	8983

## General Cable Trenchlay Cable Concentric Type



### 2001-3000 Volts

Size A.W.G.	Strand- ing Inner Conduc- tor	Wall Thick- ness Inches	Con- centric Serving	APPROX. WEIGHT POUNDS PER 1000 FEET		
				Approx. O.D. Inches	Net	Ship- ping
8	Solid	7/64	24/#21	.677	327	427
6	Solid	8/64	24/#19	.757	436	516
6	7/61.2	8/64	24/#19	.779	453	653
4	Solid	8/64	24/#17	.818	572	772
4	7/77.2	8/64	24/#17	.846	592	792
2	7/97.4	8/64	24/#15	.929	810	1010
1	19/66.4	8/64	24/#14	.983	954	1154

### 4001-5000 Volts

8	Solid	10/64	24/#20	.778	411	611
6	Solid	10/64	24/#19	.819	483	683
6	7/61.2	10/64	24/#19	.841	500	700
4	Solid	10/64	24/#17	.880	625	825
4	7/77.2	10/64	24/#17	.908	647	847
2	7/97.4	10/64	24/#15	.992	863	1063
1	19/66.4	10/64	24/#14	1.046	1013	1413

### 7001-8000 Volts

8	Solid	12/64	24/#19	.848	480	680
6	Solid	12/64	24/#18	.891	564	764
6	7/61.2	12/64	24/#18	.913	584	784
4	Solid	12/64	24/#17	.943	679	879
4	7/77.2	12/64	24/#17	.971	703	903
2	7/97.4	12/64	24/#15	1.054	922	1322
1	19/66.4	12/64	24/#14	1.108	1069	1469

### 11001-12000 Volts

Grounded Neutral Power Circuits Only						
8	Solid	16/64	24/#18	.982	632	832
6	Solid	16/64	24/#17	1.026	718	1118
6	7/61.2	16/64	24/#17	1.048	743	1143
4	Solid	16/64	24/#16	1.079	839	1239
4	7/77.2	16/64	24/#16	1.107	867	1267
2	7/97.4	16/64	24/#15	1.179	1055	1455
1	19/66.4	16/64	24/#14	1.296	1262	1662

## General Cable Trenchlay Cable Control Type



General Cable Control Type Trenchlay embodies all the advantageous structural features of power type Trenchlay. It is intended for direct earth installation for control circuits requiring several conductors. Each conductor is easily identified by the use of colored braids or colored markers in the braids.

Standard sizes are Nos. 14, 12 and 9 A.W.G. in stranded construction.

For structural details, tests, etc. ask for Specification No. 3104.

## General Cable Trenchlay Cable Railway Signal Type



General Cable Railway Signal Type Trenchlay offers a variety of uses on multiple conductor or single conductor circuits because it is constructed for direct earth installation use in ducts or as an aerial cable. Unlike the other types of Trenchlay, this cable employs a tough weatherproof Sisal braid as an outer covering and can be flame-proofed if desired.

For structural details, tests, etc. ask for Specification No. 3204.

## General Cable Super Service Cable

Super Service Cable has unusual tensile strength, durability and capacity to stand severe abrasion; the smooth, dense, sturdy hide will give long service on any job.

Cannot be kinked. This cable is tough, flexible, waterproof and highly resistant to oil or acid.

The name is embossed every 20 feet in the rubber jacket. Two lateral fins or ridges along opposite sides of cord mark the places where vulcanizing molds come together.

### Single Conductor—600-Volt Insulation



Used on mine locomotives, cutting machines, electric shovels, draglines, dredges, power leads, emergency cables, grounding leads, loading machines, conveyors, lifting magnets, cranes and welding equipment where safety and hard usage are important factors.

Size A.W.G.	Strand- ing	Allow- able Cap. Amps.	O.D. In.	Size A.W.G.	Strand- ing	Allow- able Cap. Amps.	O.D. In.
14	84/#33	15	.300	3	49/#20	80	.625
12	84/#31	20	.300	3	133/#24	80	.625
10	105/#30	25	.300	2	133/#23	90	.675
8	49/#25	35	.400	2	259/#26	90	.675
6	49/#23	50	.500	1	133/#22	100	.675
6	133/#27	50	.500	1	259/#25	100	.675
5	49/#22	60	.562	0	259/#24	125	.750
5	133/#26	60	.562	00	259/#23	150	.800
4	49/#21	70	.562	000	259/#22	175	.850
4	133/#25	70	.562	0000	259/#21	225	.900

### Twisted Conductor—600-Volt Insulation



In the twisted conductor cable the construction is similar to the cord with the exception that the copper conductors are tinned and have the same stranding as other cables. Polarity is indicated by rubber filled tapes of distinctive colors applied over the individual conductors. For instance, the 3-conductor cable is colored with black, white and red rubber tapes. However, on 4 and more conductor cables Size No. 6 and heavier, polarity is indicated by covering one conductor with red tape and all others with black tape. Polarity can then be readily recognized by counting from the red conductor.

### 2 Conductors

Size A.W.G.	Strand- ing	Allow- able Cap. Amps.	O.D. In.	Size A.W.G.	Strand- ing	Allow- able Cap. Amps.	O.D. In.
8	133/#29	35	.750	1	133/#22	100	1.400
6	49/#23	50	.950	0	259/#24	125	1.600
6	133/#27	50	.950	00	259/#23	150	1.700
4	49/#21	70	1.050	000	259/#22	175	1.800
3	133/#24	80	1.150	0000	259/#21	225	1.900
2	133/#23	90	1.250	.....	.....	.....	.....

### 3 Conductors

8	133/#29	35	.850	1	133/#22	100	1.600
6	49/#23	50	1.050	0	259/#24	125	1.700
6	133/#27	50	1.050	00	259/#23	150	1.800
4	49/#21	70	1.150	000	259/#22	175	1.900
3	133/#24	80	1.250	0000	259/#21	225	2.100
2	133/#23	90	1.300	.....	.....	.....	.....

### 4 Conductors

8	133/#29	35	.950	6	133/#27	50	1.100
6	49/#23	50	1.100	4	49/#21	70	1.250

**General Cable Super Service Concentric Cable**  
2 Conductor



Used almost exclusively in mines on cutting machines and locomotives; flexible and economical to handle.

Size A.W.G.	Stranding	Allowable Cap. Amps.	O.D. In.	Size A.W.G.	Stranding	Allowable Cap. Amps.	O.D. In.
6	49/#23	50	.750	2	133/#23	90	.950
4	49/#21	70	.850	1	133/#22	100	1.000
3	133/#24	80	.900				

**General Cable Super Service Parallel Duplex Mining Cables**



This cable is approved by the U. S. Bureau of Mines for use on explosion-proof equipment.

Used chiefly in the mines on cutting machines and also for charging cable in industrial plants.

Size A.W.G.	Stranding	Allowable Cap. Amps.	O.D. In.	Size A.W.G.	Stranding	Allowable Cap. Amps.	O.D. In.
6	49/#23	50	.950x.575	2	133/#23	90	1.250x.750
4	49/#21	70	1.000x.625	1	133/#22	100	1.421x.812
3	133/#24	80	1.109x.675				

**General Cable Super Service Welding Cable**  
Single Conductor—600-Volt Insulation



Recommended wherever a flexible portable cable is required.

Extreme flexibility is obtained by the large number of fine bare copper wires, rope stranded. This obviates the necessity of splicing additional lengths for electrode holders and assures freedom of wrist movement in the welding operation. This cable is waterproof; it coils easily, lies flat and does not kink or tangle.

Size A.W.G.	*Stranding	Allowable Cap. Amps.	O.D. In.	Size A.W.G.	*Stranding	Allowable Cap. Amps.	O.D. In.
5	1323/#36	55	.450	0	2646/#34	125	.675
4	1323/#35	70	.500	00	3332/#34	150	.750
3	1666/#35	80	.500	000	4214/#34	175	.800
2	1666/#34	90	.562	0000	5292/#34	225	.900
1	2107/#34	100	.625				

\*Bare copper, cotton separator.

**General Cable Super Service Grounding Cable**  
5000-Volt Rating



Used in the field for temporary grounding of lines while undergoing repairs. The ground clamp with cable attached is hooked on the line by means of a grounding stick, the other end having previously been connected to ground either by clamping to transmission tower or when working on a pole, to any temporary ground connection available. Also used in generating stations and substations for grounding apparatus during repairs.

Tests indicate that cable can be safely used to ground lines up to 132000 volts (system phase to ground potential).

Cable is flexible and easy to handle. Outer rubber jacket is tough and durable, waterproof and highly resistant to oils and acids. Withstands hard service.

Size A.W.G.	*Stranding	O.D. In.	Approx. Net Wt. Lbs.	Size A.W.G.	*Stranding	O.D. In.	Approx. Net Wt. Lbs.
4	133/#25	.675	338	1	133/#22	.800	527
3	133/#24	.750	409	0	259/#24	.850	611
2	133/#23	.750	447	00	259/#23	.900	719

\*Tinned copper.

**General Cable Super Service High Voltage Cable**  
3 Conductors



This cable offers remarkable wearing qualities under the most adverse conditions and also possesses exceptional resistance to the corona action, set up by the high tension currents, which has been the source of so much trouble with cables in the past.

Corona action is caused by current leakage through the insulation. The current leakage changes the oxygen in the air to two parts oxygen or ozone. Ozone is one of the most active agents in deteriorating rubber and its presence on the surface of the cable will quickly break down the rubber jacket. This danger has been practically eliminated in Super Service High Voltage Cable by the corona-resisting compound used on the individual conductors and the combination of ground strands which carry off the leakage.

**2500 Volt Insulation**

Size A.W.G.	Stranding Conductors	Ground Wires	O.D. Inches	Approx. Gross Wt. Lbs. per 1000 Feet
8	49/#25	3x 49/#30	1.250	1120
6	49/#23	3x 49/#28	1.400	1320
4	49/#21	3x133/#30	1.500	2000
4	133/#24	3x133/#29	1.600	2280
3	133/#23	3x133/#28	1.700	2555
2	133/#22	3x133/#27	1.900	2965
0	259/#24	3x133/#26	2.000	3470
00	259/#23	3x133/#25	2.100	3870
000	427/#24	3x133/#24	2.200	4450
0000	427/#23	3x133/#23	2.300	5875

**3500 Volt Insulation**

Size A.W.G.	Stranding Conductors	Ground Wires	O.D. Inches	Approx. Gross Wt. Lbs. per 1000 Feet
8	49/#25	3x 49/#30	1.300	1450
6	49/#23	3x 49/#28	1.500	2010
4	49/#21	3x133/#30	1.600	2380
3	133/#24	3x133/#29	1.700	2550
2	133/#23	3x133/#28	1.800	2790
1	133/#22	3x133/#27	2.000	3070
0	259/#24	3x133/#26	2.100	3580
00	259/#23	3x133/#25	2.200	4010
000	427/#24	3x133/#24	2.300	5285
0000	427/#23	3x133/#23	2.400	6020

**5000 Volt Insulation**

Size A.W.G.	Stranding Conductors	Ground Wires	O.D. Inches	Approx. Gross Wt. Lbs. per 1000 Feet
8	49/#25	3x 49/#30	1.500	1707
6	49/#23	3x 49/#28	1.700	2275
4	49/#21	3x133/#30	1.800	2620
4	133/#24	3x133/#29	1.900	2790
2	133/#23	3x133/#28	2.000	3230
1	133/#22	3x133/#27	2.100	3520
0	259/#24	3x133/#26	2.100	3880
00	259/#23	3x133/#25	2.300	5095
000	427/#24	3x133/#24	2.400	5605
0000	427/#23	3x133/#23	2.500	6300

**4 Conductors**

**2500 Volt Insulation**

Size A.W.G.	Stranding Conductors	O.D. In.	Approx. Gross Wt. Lbs. per 1000 Ft.	Size A.W.G.	Stranding Conductors	O.D. In.	Approx. Gross Wt. Lbs. per 1000 Ft.
8	49/#25	1.500	1215	1	133/#22	2.100	3520
6	49/#23	1.600	1775	0	259/#24	2.200	3925
4	49/#21	1.700	2350	00	259/#23	2.300	5235
3	133/#24	1.800	2565	000	427/#24	2.500	5815
2	133/#23	1.900	2865				

**5000 Volt Insulation**

Size A.W.G.	Stranding Conductors	O.D. In.	Approx. Gross Wt. Lbs. per 1000 Ft.	Size A.W.G.	Stranding Conductors	O.D. In.	Approx. Gross Wt. Lbs. per 1000 Ft.
8	49/#25	1.700	1949	2	133/#23	2.100	3590
6	49/#23	1.800	2475	1	133/#22	2.300	4740
4	49/#21	2.000	3065	0	259/#24	2.400	5135
3	133/#24	2.100	3290	00	259/#23	2.500	5660



## General Cable Super Service Portable Cords



Type S-2 Conductors

For portable electric tools such as drills, hammers, grinders, buffers, chucks, reamers, riveters and saws; also trouble lamps, solder irons, sand cutters (foundry), conveyors, portable loaders, compressors, microphone and movie-tone installations, electric heating devices, floor scrubbers, train control devices, portable blowers, blasting devices, hoists, concrete mixers, pumps, refrigerators, stage lights and any other type of portable tools or machinery where the cord is subjected to hard usage.

Nos. 16 and 18 with  $\frac{1}{32}$ -inch insulations are rated for 300-volt service. Any number of conductors can be used up to an outside cable diameter of 2½ inches.

### Type S-2 Conductors

Size A.W.G.	Stranding	Allowable Capacity Amperes	O.D. Inches
18	42/#34	3	.400
16	70/#34	6	.421
14	84/#33	15	.562
12	84/#31	20	.625
10	105/#30	25	.675

### Type S-3 Conductors

18	42/#34	3	.421
16	70/#34	6	.450
14	84/#33	15	.625
12	84/#31	20	.675
10	105/#30	25	.800

### Type S-4 Conductors

18	42/#34	3	.500
16	70/#34	6	.562
14	84/#33	15	.675
12	84/#31	20	.750
10	105/#30	25	.850

### Type SJ Junior-2 Conductors

18	42/#34	3	.300
16	70/#34	5	.354

### Type SJ Junior-3 Conductors

18	42/#34	3	.354
16	70/#34	5	.400

## General Cable Supertex Rubber Lamp Cords



Supertex is a new type of lamp cord insulated with a thin covering of high grade colored rubber in place of the usual cotton or rayon braids. Furnished in 4 standard colors, sizes Nos. 16 and 18 only. The unique construction of the rubber sheath protects and at the same time separates the 2 conductors.

This is the ideal cord for hotels, dormitories, clubs, asylums and hospitals. Recommended for use on all types of household extension lamps, electric clocks, instrument cords, dental and hospital equipment, electric fans and toys. Greatly reduces cord difficulties and practically eliminates costly labor charges for repair and replacement.

To strip ends twist cord, to loosen sheath from conductors pull sheath beyond conductors as far as desired, cut off sheath while stretched, allow sheath to slip back to its original position exposing ends of conductors and strip conductors in usual way.

Size A.W.G.	18	16
Stranding	41/#34	65/#34
Shipping Weight	31 pounds	38

## General Cable Bare Copper Wire Solid Conductor—Annealed or Hard Drawn



These wires are drawn accurately to gauge according to specification. They are of the highest conductivity and greatest tensile strength. Regularly drawn to A.W.G. and annealed, and all orders will be filled accordingly, unless otherwise stated.

Size A.W.G.	Diameter Inches	Cap. C. M.	WEIGHT, POUNDS		Std. Pkg. in Coil Pounds
			Per 1000 Ft.	Per Mile	
0000	.460	211600	640.5	3382	250
000	.410	167800	507.9	2682	250
00	.365	133100	402.8	2127	250
0	.325	105500	319.5	1687	250
1	.289	83690	253.3	1337	250
2	.258	66370	200.9	1061	250
3	.229	52640	159.3	841	250
4	.204	41740	126.4	667	250
5	.182	33100	100.2	529	250
6	.162	26250	79.46	420	250
7	.144	20820	63.02	333	250
8	.128	16510	49.98	264	250
9	.114	13090	39.63	209	250
10	.102	10380	31.43	166	250
11	.091	8234	24.92	132	250
12	.081	6530	19.77	104	250
13	.072	5178	15.68	83	250
14	.064	4107	12.43	66	250
15	.057	3257	9.858	52	250
16	.051	2583	7.818	41	100
17	.045	2048	6.200	33	100
18	.040	1624	4.917	26	100
19	.036	1288	3.899	21	50
20	.032	1022	3.092	16	50

### Approximate Breaking Weight in Pounds

Size A.W.G.	Annealed		Hard-Drawn	
	Actual Strength	Per Sq. In.	Actual Strength	Per Sq. In.
0000	5983	36000	8143	49000
000	4755	36000	6722	51000
00	3763	36000	5519	52800
0	2984	36000	4517	54500
1	2432	37000	3688	56100
2	1929	37000	3003	57600
3	1530	37000	2439	59000
4	1213	37000	1970	60100
5	962	37000	1591	61200
6	763	37000	1280	62100
7	605	37000	1030	63000
8	480	37000	826	63700
9	380	37000	661	64300
10	314	38500	529	64900
11	249	38500	423	65400
12	197	38500	337	65700
13	157	38500	268	65900
14	124	38500	214	66200
15	98	38500	170	66400
16	78	38500	135	66600
17	62	38500	107	66800
18	49	38500	85	67000
19	39	38500	68	67200
20	31	38500	54	67400

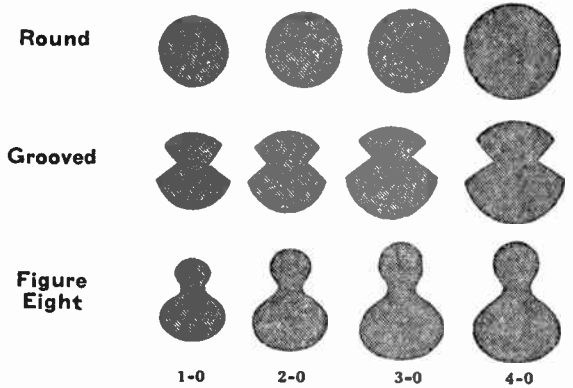
**General Cable Bare Copper Wire  
Concentric Strands**



Size C. M.	WEIGHT, POUNDS		VARIOUS METHODS OF STRANDING Diam. in Mils when Composed of		
	per 1000 Feet	Per Mile	3 Wires	7 Wires	12 Wires
2000000	6175	32604	.....	535	408
1750000	5403	28529	.....	500	382
1500000	4631	24453	.....	463	354
1250000	3859	20378	.....	423	323
1000000	3088	16302	.....	378	289
950000	2933	15487	.....	368	281
900000	2779	14672	.....	359	274
850000	2624	13857	.....	348	267
800000	2470	13042	.....	338	258
750000	2316	12227	.....	327	250
700000	2161	11412	.....	316	242
650000	2007	10596	.....	305	233
600000	1853	9781	.....	293	224
550000	1698	8966	.....	280	214
500000	1544	8151	.....	267	204
450000	1389	7336	.....	253	194
400000	1235	6521	.....	239	183
350000	1080	5706	.....	224	171
300000	926	4891	.....	207	158
250000	772	4076	.....	189	144
A.W.G.					
0000	653	3450	.....	174	133
000	518	2736	.....	155	118
00	411	2169	.....	138	105
0	326	1720	.....	123	94
1	258	1364	167	109	83
2	205	1082	149	97	75
3	163	858	132	87	66
4	129	681	118	77	59
5	102	540	105	69	52.5
6	81	428	93.5	61.2	46.8
8	51	269	74.2	48.6	37.0
10	32	169	58.8	38.6	29.4
12	20	107	.....	30.6	23.4
14	13	67	.....	24.4	18.5

Size C. M.	VARIOUS METHODS OF STRANDING Diam. in Mils when Composed of				
	19 Wires	27 Wires	37 Wires	61 Wires	91 Wires
2000000	324	272	232	181	148
1750000	303	254	217	169	139
1500000	281	235	201	157	128
1250000	256	215	184	142	117
1000000	229	192	164	128	105
950000	224	187	160	125	102
900000	218	182	156	121	100
850000	211	177	152	118	97
800000	205	172	147	115	94
750000	199	167	143	111	91
700000	192	161	138	107	88
650000	185	155	133	103	84
600000	178	149	127	99	81
550000	170	142	122	95	78
500000	162	136	116	91	74
450000	154	129	110	86	70
400000	145	122	104	81	66
350000	136	114	97	76	62
300000	126	105	90	70	57.4
250000	115	96	82	64	52.4
A.W.G.					
0000	106	86	76	59.8	48.2
000	94	79	67	52.5	43.0
00	84	70	60	46.7	38.3
0	75	62.6	53.4	41.6	34.1
1	66	55.6	47.5	37.0	30.3
2	59.2	49.7	42.4	33.0	27.1
3	52.5	44.1	37.7	29.3	24.0
4	46.8	39.3	33.5	26.1	21.4
5	41.8	35.0	29.9	23.3	19.1
6	37.2	31.2	26.6	20.7	17.0
8	29.4	24.6	21.1	16.4	13.4
10	23.4	19.6	16.8	13.1	10.7
12	18.6	15.6	13.3	10.4	8.5
14	14.7	12.3	10.5	8.2	6.7

**Trolley Wire**



Size A. W. G.	Diam. Mils	Round Section		Ohms per 1000 Ft.	Ohms per Mile
		Wt., Lbs. per 1000 Feet	Wt., Lbs. per Mile		
0000	460	640.5	3382	.0504	.2663
000	410	507.9	2682	.0636	.3359
00	365	402.8	2127	.0802	.4235
0	325	319.5	1687	.1011	.5340

Size A. W. G.	Depth Mils	THICKNESS IN MILS OF		
		Upper Lobe	Lower Lobe	Web
0000	482	376	482	250
000	430	340	429	220
00	392	318	388	200
0	360	246	352	138

Size A. W. G.	Depth Mils	Figure 8 Section		
		Upper Lobe	Lower Lobe	Web
0000	600	250	450	150
000	540	222	400	130
00	480	196	352	108
0	420	175	312	106

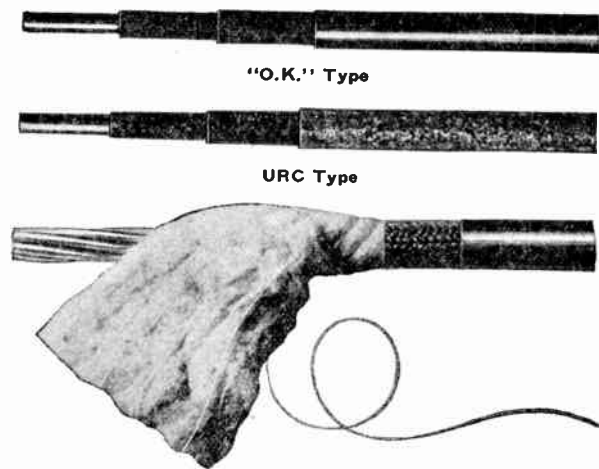
**General Cable Unit Package Splicing  
and Jointing Materials**



For convenience of customers, the complete materials required for splices and joints on all types of cable are put up in handy unit package form. By purchasing splicing and jointing materials in this manner, an accumulation of dead stock in the store room is prevented and the time and expense of buying the various items required for the work from more than one source is saved.

When ordering, specify number and size of conductors, thickness of insulation and lead sheath and voltage rating.

## General Cable Weatherproof Wire and Cable "O.K." URC Peerless



"O.K." Type

URC Type

Peerless Type

Peerless type furnished in sizes up to and including 1000000 C.M.

### Solid

Size A.W.G.	Wt. Lbs. Per 1000 Ft.		Std. Pkg. Reels Ft.	Coils Ft.	APPROX. NET WT. LBS. PER REEL		APPROX. NET WT. LBS. PER COIL	
	D.B.	T.B.			D.B.	T.B.	D.B.	T.B.
0000	723	767	2500	....	1808	1920	....	....
000	587	629	3000	....	1761	1890	....	....
00	467	502	3500	....	1635	1760	....	....
0	377	407	4000	....	1508	1630	....	....
1	294	316	990	495	290	310	145	155
2	239	260	1240	620	295	320	150	160
3	185	199	1600	753	295	320	150	160
4	151	164	1980	990	295	320	150	160
5	122	135	2000	1260	244	270	154	170
6	100	112	3150	1575	315	350	160	175
* 8	66	75	5000	2500	330	370	165	185
9	54	62	....	....	....	....	....	....
* 10	46	53	6400	3970	295	340	180	210
* 12	30	35	....	....	....	....	....	....
* 14	20	25	....	....	....	....	....	....

\*Also furnished in bundles; double or triple braid, 100 pounds to a bundle.

### Stranded

Size C.M.	Wt. Lbs. Per 1000 Ft.		Standard Package Reels Feet	APPROX. NET WT. LBS. PER REEL	
	D.B.	T.B.		D.B.	T.B.
2000000	6690	7008	500	3345	3504
1750000	5894	6193	600	3536	3716
1500000	5098	5380	700	3569	3766
1250000	4264	4508	800	3411	3606
1000000	3456	3674	900	3110	3300
900000	3127	3332	1000	3127	3332
800000	2799	2992	1000	2799	3000
750000	2635	2822	1100	2899	3104
700000	2471	2650	1200	2965	3180
600000	2093	2235	1500	3140	3340
500000	1765	1894	2000	3530	3788
450000	1601	1724	2000	3202	3448
400000	1436	1553	2000	2872	3106
350000	1248	1345	2000	2496	2690
300000	1083	1174	2000	2166	2350
250000	907	985	2500	2268	2460
A.W.G.					
0000	745	800	2500	1863	2000
000	604	653	3000	1812	1960
00	482	522	3500	1687	1830
0	388	424	4000	1552	1700
1	303	328	1000	303	328
2	246	270	1250	308	338
3	190	206	1500	285	309
4	155	170	2000	310	340
5	126	140	2000	252	280
6	103	115	3000	309	345
8	68	78	4000	272	312

## General Cable Slow-Burning Triple Braided Wire

### Solid



All 3 braids of cotton are thoroughly saturated with white fireproof compound. The compound used on the outer braid becomes very hard, but still the wire retains its flexibility. As this insulation does not deteriorate in a continued high temperature, it is especially suitable for engine and boiler rooms, furnaces and foundries.

Size A.W.G.	Approximate Diameter Over Insulation Inches	WEIGHT, POUNDS		Approx. Net Wt. Lbs. Per Reel
		Per 1000 Ft.	Per Mile	
0000	3/4	925	4890	2310
000	23/32	760	4020	2280
00	19/32	600	3170	2100
0	17/32	495	2610	1980
0000	3/4	925	4890	300
000	23/32	760	4020	300
00	19/32	600	3170	300
0	17/32	495	2610	310
1	15/32	365	1930	360
2	7/16	320	1690	400
4	3/8	220	1160	435
6	5/16	160	845	500
8	9/32	100	530	*100
10	1/4	80	420	*100
12	7/32	55	290	*100
14	3/16	40	210	*100

\*Approximate weight per bundle.

### Stranded



Size A.W.G.	Approximate Diameter Over Insulation Inches	WEIGHT, POUNDS		Approx. Net Wt. Lbs. Per Reel
		Per 1000 Ft.	Per Mile	
0000	27/32	960	5070	2400
000	25/32	785	4150	2355
00	21/32	625	3300	2190
0	19/32	510	2700	2040
0000	27/32	960	5070	400
000	25/32	785	4150	395
00	21/32	625	3300	360
0	19/32	510	2700	340
1	17/32	380	2000	300
2	1 1/2	335	1770	335
3	15/32	280	1480	335
4	7/16	230	1220	340
5	3/8	195	1030	390
6	11/32	165	870	410
8	9/32	105	555	370

## General Cable Feeder Cable

Size C.M.	Approximate Diameter Over Insulation Inches	WEIGHT, POUNDS		Approx. Net Wt. Lbs. Per Reel
		Per 1000 Ft.	Per Mile	
1000000	1 1/8	3980	21000	3580
800000	1 17/32	3280	17300	3280
700000	1 1/16	2920	15400	3500
600000	1 9/32	2460	13000	3690
500000	1 7/32	2030	11000	3740
400000	1 3/32	1700	9000	2550
350000	31/32	1500	7900	2700
300000	15 1/16	1310	6900	2620
250000	7/8	1120	5900	2800



## Tirex Rubber Armored Cable

The flexible copper conductors are insulated with a rubber compound of high dielectric strength containing a minimum of 30 per cent of new Para rubber.

The inner jacket is a 40 per cent Para rubber compound and fills the interstices between the conductors.

The outer jacket or rubber armor contains a high percentage of new Para rubber and is securely locked to the cable.

A double reinforcement of hard twisted seine twine between the jackets adds greatly to the wearing qualities of Tirex Cables.

The outer covering or rubber armor effectively protects the cable and safeguards the user.

Tirex Cables, being all rubber, do not absorb moisture and are not appreciably affected by oils or acids under ordinary industrial conditions.

### Tirex Single Cable—600 Volts

For use wherever a single conductor portable cable is needed. Specially suitable for electric mine locomotives of the gathering reel type when it is necessary to leave the trolley wire in the main entry and enter rooms to pick up or place cars.

To insure adequate tensile strength the conductors of Tirex Single Conductor Cable are reinforced with steel strands.



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	59/64—.922	975	.....
0000	259	59/64—.922	960	.....
000	427	65/64—.859	810	.....
000	259	55/64—.859	795	.....
00	259	26/32—.813	675	.....
00	133	26/32—.813	685	.....
0	259	49/64—.766	570	.....
0	133	49/64—.766	575	.....
1	133	24/32—.719	505	.....
2	133	21/32—.656	410	.....
3	133	20/32—.625	355	.....
3	49	20/32—.625	345	.....
4	133	18/32—.563	285	.....
4	49	18/32—.563	280	.....
5	49	33/64—.516	230	.....
6	49	31/64—.484	195	.....
8	49	27/64—.422	140	.....

### Two-Conductor



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	58/32—1.813	2720	.....
0000	259	36/32—1.813	2685	.....
000	427	51/32—1.688	2285	.....
000	259	51/32—1.688	2250	.....
00	259	49/32—1.531	1840	.....
00	133	49/32—1.531	1860	.....
0	259	46/32—1.438	1570	.....
0	133	46/32—1.438	1580	.....
1	133	42/32—1.313	1300	.....
2	133	38/32—1.188	1040	.....
3	133	36/32—1.125	910	.....
3	49	36/32—1.125	915	.....
4	133	34/32—1.063	785	.....
4	49	34/32—1.063	790	.....
5	49	31/32—.969	645	.....
6	49	29/32—.906	550	.....
8	49	21/32—.750	370	.....

## Tirex Rubber Armored Cable

Maximum flexibility is obtained by proper stranding of the copper conductors and the omission of stiff, fibrous braids and fillings. Tirex Cables never kink.

The smooth, clean, outer surface of Tirex Cables does not collect and hold dirt and grease. It may easily be wiped clean when soiled.

Rigid electrical tests are made during the manufacture of Tirex Cables. These tests insure the integrity of every length.

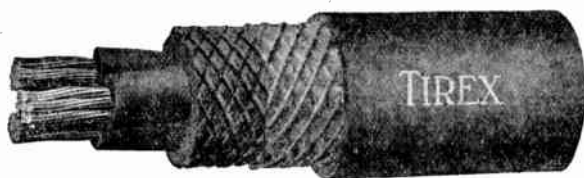
The rubber armor has remarkable wear-resisting properties and protects the cable from outside injury.

### Concentric, Two-Conductor



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	42/32=1.313	1960	.....
0000	259	42/32=1.313	1945	.....
000	427	39/32=1.219	1620	.....
000	259	39/32=1.219	1605	.....
00	259	37/32=1.156	1360	.....
00	133	37/32=1.156	1370	.....
0	259	69/64=1.078	1150	.....
0	133	69/64=1.078	1155	.....
1	133	32/32=1.000	945	.....
2	133	59/64=.922	780	.....
3	133	57/64=.891	680	.....
3	49	57/64=.891	685	.....
4	133	27/32=.844	585	.....
4	49	27/32=.844	590	.....
5	49	51/64=.797	500	.....
6	49	24/32=.750	425	.....
8	49	39/64=.609	280	.....

### Three-Conductor



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	63/32=1.969	3530	.....
0000	259	63/32=1.969	3560	.....
000	427	117/64=1.828	3000	.....
000	259	117/64=1.828	2970	.....
00	259	54/32=1.688	2450	.....
00	133	54/32=1.688	2460	.....
0	259	51/32=1.594	2075	.....
0	133	51/32=1.594	2095	.....
1	133	89/64=1.391	1630	.....
2	133	49/32=1.250	1290	.....
3	133	38/32=1.188	1130	.....
3	49	38/32=1.188	1135	.....
4	133	36/32=1.125	975	.....
4	49	36/32=1.125	990	.....
5	49	65/64=1.016	790	.....
6	49	61/64=.953	675	.....
8	49	29/32=.781	445	.....

## Type S Tirez All Rubber Portable Cord For Electrical Tools and Appliances



Tirez fits standing bushings. It is most satisfactory for portable lamps, tools or other appliances. Oils and acids have no appreciable effect upon it and the clean, smooth outer surface does not collect dirt or grease. The conductors are copper wire, stranded and cotton wound. Insulation is 30 per cent. The insulated conductors are twisted and covered with a high-grade rubber jacket which entirely fills the interstices between the conductors. Electrical tests are applied to each length of cord after 12 hours' submersion in water.

Two and three-conductor Nos. 14, 16 and 18 and 2-conductor No. 12 are packed in special cartons containing approximately 250 feet each (from 200 to 270 feet), so constructed that the cord may be drawn out as needed without disturbing the remainder of the coil.

Size B. & S.	Strands	1-Conductor		2-Conductor				
		Thickness Insulation per Inches	Wt., Lbs. per 1000 Ft.	OUTSIDE DIAMETER INCHES	Wt., Lbs. per 1000 Ft.	OUTSIDE DIAMETER INCHES		
10	No. 30 A. W. G.	3/64	66	19/64	288	242	41/64	641
12	No. 30 A. W. G.	3/64	50	17/64	263	188	37/64	579
14	No. 30 A. W. G.	3/64	40	8/32	248	153	17/32	532
16	No. 34 A. W. G.	1/32	24	13/64	193	90	27/64	407
18	No. 34 A. W. G.	1/32	20	9/32	183	79	25/64	391
		3-Conductor		4-Conductor				
10	No. 30 A. W. G.	3/64	302	27/32	688	368	21/32	750
12	No. 30 A. W. G.	3/64	226	39/64	610	279	13/64	672
14	No. 30 A. W. G.	3/64	183	18/32	563	220	39/64	610
16	No. 34 A. W. G.	1/32	110	29/64	438	132	31/64	485
18	No. 34 A. W. G.	1/32	91	13/32	407	107	14/32	438

\*There are no N. E. C. standards for 1-conductor rubber sheathed flexible cord.

Prices upon application.

## Type SJ Tirez Portable Cord

2-conductor



Recommended for pendent drop lights, floor or table lamps, vacuum cleaners and small electrical tools and apparatus.

It is suitable for portable use in offices, dwellings and reasonably dry places where conditions are not so severe, and for pendent use in manufacturing plants and garages.

The cord is practically wearproof, never frays or kinks and is so flexible that its full length is always available without delay or annoyance.

The outer covering or rubber armor is smooth and attractive in appearance and is furnished in black or green as desired.

The colors are permanent and the wear and tear of ordinary service has no appreciable effect on them.

The insulation of each conductor is of a distinctive color for identification and polarity marking.

Tirez is packed in convenient cartons containing approximately 250 feet each, (from 200 to 270 feet) so constructed that any desired length may be removed without disturbing the remainder of the coil.

Other lengths may be obtained in coils or on reels.

Size B. & S.	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Size B. & S.	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.
16	.320	60	18	.300	50

Prices upon application.

## Tirez Shot Fire Cable

Two-conductor



Suitable for rough work in damp or wet places. Not affected by acid, gas or oil.

The particular features which will appeal to the shot firer, are the small diameter of about 1/4 inch and the light weight of 4 1/2 pounds to 100 feet.

Cable is flexible and has adequate tensile strength for the work for which it was designed. Does not kink or snarl.

Size A. W. G.	Approx. O. D. Inches	Approx. Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
18	.270	45	.....

## Tirez Welding Cables 600-Volt



Extra flexible, with a paper separator between the insulation and the copper. Single conductor.

Size	Strands	O.D. In.	Net Wt., Lbs. 1000 Ft.	Size	Strands	O.D. In.	Net Wt., Lbs. 1000 Ft.
*4-0	5292	2 3/32	805	1	2107	37/64	332
*3-0	4214	2 1/32	661	2	1666	3 1/64	269
2-0	3332	1 5/8	512	*3	1323	1 1/32	224
1-0	2646	1 1/8	421	*4	1029	1 1/32	185

\*Not in stock. Made on special order only.  
Prices upon application.

## Tirez Twin-Parallel Mining Machine Cable



Size No.	Strands	Outside Diameter Inches	Net Weight Pounds per 1000 Ft.
2	133	23/32 x 39/32	820
3	133	20/32 x 3 1/32	635
4	133	19/32 x 3 1/32	540
6	49	3 1/64 x 27/32	375

Prices upon application.

## Tirez Motor Lead Cable Paper Separator—Not Steel Reinforced For Street Railway Generator Leads and Locomotive Wiring—600 Volts



Size A.W.G.	Strands	O.D. In.	Wt., Lbs. 1000 Ft.	Price, per Size 1000 Ft.	Size A.W.G.	Strands	O.D. In.	Wt., Lbs. 1000 Ft.	Price, per 1000 Ft.
0000	427	5/64	989	Upon Application	2	133	21/32	395	Upon Application
000	427	5 1/64	810		3	133	20/32	335	
00	259	2 1/32	685	Upon Application	4	133	18/32	275	Upon Application
0	259	1 9/16	570		5	133	3 1/64	230	
1	259	2 3/32	475		6	133	31/64	195	
1	133	2 3/32	480		6	49	31/64	195	
2	259	2 1/32	390	8	49	27/64	140		

**Whitney Blake Flexible Cords**

N. E. C. Standard

**Type C Twisted Pair Lamp Cord**



For pendant or portable use in dry places and where not subject to hard usage.

Each insulated conductor is covered with a glazed cotton or rayon braid and twisted together.

Size.....	A. W. G.	10	12	14	16	18
Insulation.....	in.	3/64	3/64	3/64	1/32	1/32
Weight per 1000 Feet.....	lbs.	110	81	60	37	27

**Type PO Parallel Flexible Cord**



Type PO-32 is for portable lamps and appliances where extra factor of safety and good appearance is desired. Type PO-64 is for portables not subject to severe usage.

Each insulated conductor is covered with a soft cotton braid laid parallel and then covered with an outer braid of glazed cotton or rayon.

Type No.....		PO-32		PO-64	
Size.....	A. W. G.	14	16	18	18
Insulation.....	in.	3/64	1/32	1/32	1/64
Weight per 1000 Feet.....	lbs.	60	37	28	20

**Type PD Twisted Portable Cord**



For household equipment subject to more or less flexing.

Construction is same as Type PO except that conductors are twisted together before outer braid is applied.

Size.....	A. W. G.	16	18
Insulation.....	in.	1/32	1/32
Weight per 1000 Feet.....	lbs.	38	28

**Types P-32 and P-64 Reinforced Portable Cord**



For pendants or portable use in dry places and where subject to hard usage.

Each insulated conductor is covered with a soft cotton braid twisted together and covered with a rubber jacket not less than 1/64 inch thick around twisted conductors, then covered with an outer braid of glazed cotton or rayon.

Type No.....		P-32			P-64	
Size.....	A. W. G.	12	14	16	18	18
Insulation.....	in.	3/64	3/64	1/32	1/32	1/64
Weight per 1000 Feet.....	lbs.	169	121	72	64	40

**Type PWP Weatherproofed Reinforced Portable Cord**



For use in damp places subject to hard usage.

Construction is same as Type P except outer braid is soft cotton weatherproofed.

Type No.....		PWP-32			PWP-64	
Size.....	A. W. G.	12	14	16	18	18
Insulation.....	in.	3/64	3/64	1/32	1/32	1/64
Weight per 1000 Feet.....	lbs.	175	128	79	71	45

**Type K Braided Heavy Duty Cord**



For pendant and portable use in damp places and where subject to hard usage.

Each insulated conductor is covered with a soft cotton braid and twisted with jute filler to provide added protection. This is protected with a covering of two braids of weatherproofed cotton.

Size.....	A. W. G.	10	12	14	16	18
Insulation.....	in.	3/64	3/64	3/64	1/32	1/32
Weight per 1000 Feet.....	lbs.	175	130	105	71	56

**Whitney Blake Flexible Cords**

**Types FF-32 and FF-64 Flexible Rubber Covered Fixture Cord**



Type FF-32 is for wiring fixtures where temperatures do not exceed 120°F. Type FF-64 is for radios, etc.

The insulated conductor is covered with a braid of cotton, rayon, or weatherproofed cotton.

Type No.....		FF-32				FF-64	
Size.....	A. W. G.	10	12	14	16	18	18
Insulation.....	in.	3/64	3/64	3/64	1/32	1/32	1/64
Weight per 1000 Feet.....	lbs.	54	40	29	17	13	9

**Type CF Flexible Heat Resisting Fixture Cord**



For wiring fixtures where temperatures do not exceed 194°F.

Stranded conductor of bare copper, several coverings of cotton thoroughly saturated with a flameproof and moisture-proof compound.

Can be furnished in Types C, PO and PD Lamp Cord constructions in glazed cotton or rayon.

Size.....	A. W. G.	14	16	18
Weight per 1000 Feet.....	lbs.	22	16	12

**Type AF Flexible Heat Resisting Fixture Cord**



For wiring fixtures where temperatures are over 194°F.

Stranded conductor of bare copper, several coverings of asbestos thoroughly saturated with a flameproof and moistureproof compound.

Can be furnished in Types C, PO and PD Lamp Cord constructions in glazed cotton or rayon.

Size.....	A. W. G.	14	16	18
Weight per 1000 Feet.....	lbs.	22	16	12

**Type HPD Flat Iron Heater Cord  
3000 or 10,000-Cycle**



For flat irons and other heating appliances where subject to severe usage and flexing.

Stranded conductor of bare copper with separator. Rubber insulated 1/64 inch minimum, and asbestos covered. The two conductors are then twisted together and covered with an overall braid of glazed cotton or rayon.

Type HC is the same except that each conductor is individually braided and then twisted.

Size.....	A. W. G.	10	12	14	16	18
Weight per 1000 Feet.....	lbs.	100	72	53	41	30

**Type POSJ Rubber Sheathed Parallel Cord**



For portable lamps and appliances. Is of lasting quality and capable of withstanding severe abuse.

Flexible stranded conductors with high grade insulation and an oval jacket of tough rubber over all.

Standard colors, brown or black.					
Size.....	A. W. G.	18			
Insulation.....	in.	1/64			
Weight per 1000 Feet.....	lbs.	28			

**Types S and SJ Rubber Sheathed Cord**



Type S is a heavy duty cord for portable use where normally exposed to hard usage. Adapted for outdoor use, in machine shops, factories, garages, etc.

Type SJ, constant service cord, is very flexible. For portable use where not normally exposed to hard usage.

Flexible strand of No. 34 bare copper with separator. Insulation 30 per cent rubber. Twisted with fillers and covered with cotton braid and 40 per cent rubber sheath.

Both types are also furnished with 60 per cent rubber sheath to meet extremely severe conditions.

Size.....	A. W. G.	10	12	14	16	18
Insulation.....	in.	3/64	3/64	3/64	1/32	1/32
Minimum Wall, Type S.....	in.	3/32	3/32	3/64	1/16	1/16
Minimum Wall, Type SJ.....	in.	.....	.....	.....	1/32	1/32
Wt. per 1000 Ft., Type S.....	lbs.	246	188	146	90	78
Wt. per 1000 Ft., Type SJ.....	lbs.	.....	.....	.....	63	47



## Whitney Blake Flexible Cords

The following appliances take the Type cord as shown:

Appliances	Types	
Air Purifiers.....	C	PO POSJ
Clocks.....	C	PO
Curling Irons.....	HPD	HC (3000-Cycle)
Dish Washers.....	SJ	
Drills.....	S	
Fans.....	C	PO PD POSJ
Flat Irons.....	HPD	HC (3000 and 10,000-Cycle)
Food Mixing Machines	C	PO SJ
Fruit Extractors.....	C	PO SJ
Hair Clippers.....	PD	POSJ
Heating Pads.....	HPD	HC (3000-Cycle)
Ironing Machines.....	SJ	
Percolators.....	HPD	HC (3000-Cycle)
Portable Lamps.....	PO	POSJ
Radios.....	FF	PO POSJ
Reflector Heaters.....	IPD	HC (3000-Cycle)
Refrigerators.....	SJ	
Riveting Hammers...	S	
Saws.....	S	
Sewing Machines.....	PO	SJ POSJ
Sun Lamps.....	HPD	HC (3000-Cycle)
Toasters.....	HPD	HC (3000-Cycle)
Toys.....	C	
Waffle Irons and Grills	HPD	HC (3000-Cycle)
Washing Machines...	SJ	
Vacuum Cleaners....	SJ	PD

### Standard Colors as Adopted by Natl. Elec. Mfrs. Assn.

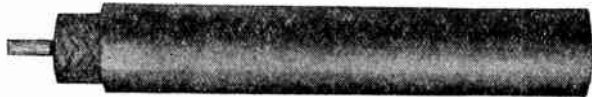
Black, blue, maroon, red, gray, white, yellow, oak tan, brush brass, olive, green, and dark brown. Glazed cotton also furnished in medium and light brown, and orange.

Rayon colors are also old gold, tiffany, and rose.

### Ordering Instructions

When ordering, specify size in A.W.G.; No. of conductors; style, either by type or letter; finish, whether dry or weatherproof, cotton or rayon; and color.

## Whitney Blake Type GT Gas Tube Neonlite and Type GTO Oil Burner Cables



Made in three different types, each in two finishes.

Weatherproof finish, black fire resisting wax and mica.

Lacquered finish, flexible black fire resisting lacquer over black glazed cotton braid.

Style No., Weatherproof.....	1074	1084	1094
Style No., Lacquered.....	1074-L	1084-L	1094-L
Type No., Neonlite Cable.....	GT-5	GT-10	GT-15
Type No., Oil Burner Cable.....	GTO-5	GTO-10	GTO-15
Working Voltage.....	5000	10000	15000
Extended Voltage.....	10000	20000	30000

	3/4" Mandrel	1" Mandrel	1 1/4" Mandrel
Puncture Voltage.....	17000	33000	50000
Diam. Over All, Weatherproof....in.	9/32	3/8	15/32
Diam. Over All, Lacquered.....in.	9/32	3/8	13/32
Wt. per 1000 Ft., Weatherproof...lbs.	45	70	100
Wt. per 1000 Ft., Lacquered.....lbs.	42	65	80

## Whitney Blake Automotive Wires and Cables Battery and Starting Cable



Battery and starting cable is of commercial grade, of soft natural color, black weatherproof finish.

Type No.	Size A.W.G.	No. Con-ductors	Copper Stranding	INSULATION Diam. In. Over All	Wall In.	No. Braids	Wt. Lbs. 1000 Ft.
41-S	4	1	49-21 T	13/32	3/64	1	180
21-S	2	1	133-23 T	31/64	3/64	1	290
11-S	1	1	133-22 T	17/64	3/64	1	350
1-B	1	1	133-22 T	19/32	3/64	2	360
01-S	0	1	133-21 T	37/64	3/64	1	430

Furnished in 250-foot coils.

## Whitney Blake Automotive Wires and Cables

### Braided Ignition Cables

A Corona-Proof compound is used on all ignition cables. The lacquered cables are covered with a closely woven braid of cotton and treated with a flexible lacquer built to withstand oil, gasoline, and extremes of heat and cold.

For the severe conditions encountered on bus and truck work Type No. 715 is specially recommended. It has an insulation of rubber and layers of varnished cambric tape wound in reverse direction, natural cotton braid weather-proofed and over all a high quality glazed cotton braid treated with the same flexible lacquer as the S.A.E. grade. "Com" indicates commercial grade.

### High Tension Ignition Cable



Type No.	Size A.W.G.	Grade	Copper Stranding	Diam. In. Over All	Wall In.	No. of Brds.	Std. Color	Wt. 1000 Ft.
611	16	Com	19-29 T	7 M/M		1	Brown	43
767	16	SAE	19-29 T	7 M/M		1	Gold	37
764	16	SAE	19-29 T	7 M/M		1	Black	37
964	16	SAE	19-29 T	9 M/M		1	Black	57
713	14	Com	19-27 T	7 M/M		1	Brown	44
777	14	SAE	19-27 T	7 M/M		1	Gold	40
744	14	SAE	19-27 T	7 M/M		1	Black	41
715	14	WB	19-27 T	7 M/M		2	Gold	44
914	14	SAE	19-27 T	9 M/M		1	Black	61

### Low Tension Ignition Cable



162BB	16	SAE	19-29 T	3/16	.031-1/32	2	Brown	19
142BB	14	SAE	19-27 T	13/64	.031-1/32	2	Brown	25

### Braided Lighting Cables



#### Single Conductor Cable

All braids in this group are treated with a high grade flexible lacquer. Standard color is brown.

Type No.	Size A.W.G.	No. Con-ductors	Copper Stranding	INSULATION Diam. In. Over All	Wall In.	No. of Brds.	Wt. 1000 Ft.
181	18	1	16-30 T	1/8	.015-1/64	1	10
182	18	1	16-30 T	9/64	.031-1/32	1	13
161	16	1	19-29 T	5/64	.022	1	13
162	16	1	19-29 T	5/32	.031-1/32	1	16
162-D	16	2	19-29 T	11/32 x 3/16	.031-1/32	2	36
141	14	1	19-27 T	5/32	.027	1	20
142	14	1	19-27 T	11/64	.031-1/32	1	22
142-D	14	2	19-27 T	3/8 x 13/64	.031-1/32	2	48
122	12	1	19-25 T	13/64	.031-1/32	1	30
102	10	1	19-23 T	7/32	.031-1/32	1	45

### Armored Lighting Cables



#### Single Conductor Cable



#### Parallel 2-Conductor Cable

Between the copper conductors and the oval steel armor is applied two coverings of varnished cambric tape and one cotton braid, waxed.

189	18	1	16-30 B	9/64			23
189-D	18	2	16-30 B	15/64 x 3/64			40
169	16	1	19-29 B	5/32			27
169-D	16	2	19-29 B	17/64 x 3/32			48
149	14	1	19-27 B	11/64			31
149-D	14	2	19-27 B	19/64 x 11/64			64
129	12	1	19-25 B	3/16			44
109	10	1	19-23 B	7/32			63

Both braided and armored lighting cables are made to S.A.E. specifications and are also used on the horns and on other low voltage equipment on the car.

Regularly furnished in 500-foot coils. Furnished on 100-foot spools at slight additional cost.

**Whitney Blake Telephone Wires**  
No. 17 Drop Wire



Copperweld, Twisted Pair, Spec. 3791  
Bronze, Twisted Pair, Spec. 3730



Copperweld, Parallel, Spec. 5791  
Bronze, Parallel, Spec. 5730

Copperweld, tensile strength, 220 lbs.; conductivity, 30%  
Bronze, tensile strength, 170 lbs.; conductivity, 38%  
Diameter over rubber, .110 inch (7/64).  
Weight per 1000 feet, twisted pair, 33 lbs.; parallel, 31 lbs.

**Bridle or Outside Wires**



No. 18, Twisted Pair, Spec. 4823

Size.....A.W.G. 14 16 18 19 20  
Diameter Over Rubber.....in. 3/32 1/8 3/16 1/4 .085  
Weight per 1000 Feet.....lbs. 60 42 31 22 20

**No. 17 Abrasion Proof Wire**



Spec. 4746

Diameter Over Rubber.....in. .115  
Weight per 1000 Feet.....lbs. 55

**Inside Wire**



No. 19, Twisted Pair, 1/32-Inch Wall Spec. 4926  
No. 22, Twisted Pair, 1/64-Inch Wall Spec. 4256

Size.....A.W.G. 19 22  
Diameter Over Rubber.....in. 3/32 .055  
Weight per 1000 Feet.....lbs. 21 10

**Switchboard Wire**



No. 20, Twisted Pair, Spec. 5758

Size.....A.W.G. 19 20  
Diameter Over Rubber.....in. 3/32 .085  
Weight per 1000 Feet.....lbs. 23 18

**Flameproof Distributing Wire**



No. 20, Twisted Pair, Spec. 2056

Size.....A.W.G. 19 20 22  
Diameter Over Rubber.....in. 3/32 .085 3/16  
Weight per 1000 Feet.....lbs. 23 17 13

**Single Ground Wire**



No. 14, Spec. 2990

Size.....A.W.G. 14 18  
Diameter Over Rubber.....in. 3/32 7/64  
Weight per 1000 Feet.....lbs. 27 13

**No. 22 Duct Wire**



Twisted Pair, Spec. 5423

Diameter Over Rubber.....in. 1/4  
Weight per 1000 Feet.....lbs. 14

**Pothead Wire**



No. 19, Twisted Pair, Spec. 3643

Size.....A.W.G. 16 19 20 22  
Diameter Over Rubber.....in. 1/8 3/16 3/8 1/2  
Weight per 1000 Feet.....lbs. 37 20 19 17

Weights are 2-conductor, except ground wire.  
Coil lengths, 200 to 1500 feet.

The 4-figured numbers shown are the Graybar-Whitney Blake specification numbers.

**Whitney Blake Enameled Flameproof Distributing Frame and Rack Wires**

Tussah Silk Winds with braided flameproof covering or cotton wound cellulose acetate flameproof coating.

Size.....A.W.G. 20 22  
Weight per 1000 Feet.....lbs. 9 7

**Whitney Blake Telegraph Wires**  
Flameproof Distributing Wire

Size.....A.W.G. 18 16  
Diameter Over Rubber.....in. 3/64 1/32 1/16  
Weight per 1000 Feet.....lbs. 27 38

**Inside Wire**

Size.....A.W.G. 18 16 14  
Diameter Over Rubber.....in. 3/64 1/32 1/16  
Weight per 1000 Feet.....lbs. 26 35 54

**Outside or Bridle Wire**

Size.....A.W.G. 12 10  
Diameter Over Rubber.....in. 3/64 1/32  
Weight per 1000 Feet.....lbs. 80 109

For details of construction see illustrations of similar types of telephone wires.

Weights are 2-conductor.

Coil lengths, 200 to 1500 feet.

Wires can also be manufactured to conform to customer's specifications.

**Annunciator Wire**  
Regular

Furnished in colors and styles as follows: either plain copper or tinned; plain copper furnished unless otherwise ordered; red, blue, red and white, brown, brown and white, white, olive, yellow, yellow and white, blue and white, green, green and white and special colors where possible for us to obtain proper colored yarns.

Size A.W.G.	Wt., Lbs. per 1000 Ft.	Single Conductor				Twisted Pairs Wt., Lbs. per 1000 Ft.	6-7-lb. Spools
		NET ADDITIONS TO BASE					
		6-7-lb. Spools	1-lb. Spools	1/2-lb. Coils	1-lb. Coils		
14	15	\$.05	\$.08	\$.07	\$.06	30	\$.06
16	9.5	.07	.10	.09	.08	19	.08
18	6.5	.10	.13	.12	.11	13	.11
20	4.5	.17	.20	.19	.18	9	.18
22	3.2	.21	.24	.23	.22	7	.22

Tinned wire furnished on application at \$.02 1/2 per pound extra.

**Damp-Proof Office Wire**



This wire is double braided, the inner braid saturated with black weatherproof compound. The outer braid is specially treated with wax, highly polished and will not collect dust. Damp-proof office wire is carried regularly in the following colors: red, red and white, blue, blue and white.

Sizes 16 and 18 wire, in red, red and white, blue, blue and white, are also carried in duplex wire, being two separately insulated conductors under one braid.

Size A.W.G.	Wt., Lbs. per 1000 Ft.	Single Conductor		Duplex Double Conductor Wt., Lbs. Net Additions per 1000 Ft. 10-lb. Coils
		NET ADDITIONS TO BASE		
		10-lb. Coils	5-lb. Spools	
14	20	\$.10	\$.15	35 \$ .11
16	14.5	.12	.17	27 .13
18	10	.14	.18	18 .15

Tinned wire furnished on application.

**Annunciator Cables**

This cable is designed for connecting the annunciator in an elevator car with the push buttons on the different floors.

Each conductor is composed of 16 strands of No. 30 A.W.G. gauge soft untinned copper wire and insulated with two reverse wrappings of cotton and one cotton braid. The insulated conductors are then cabled (using a steel supporting strand if desired, in order to give extra tensile strength, but ordinarily supplied without same) then covered with two cotton braids, the inner one being white and the outer one black. This is a dry cable, and the outer braids are not flameproof.

Prices on application.

## Deltabeston Fixture Wire—Plain

### Single Conductor—Stranded

Type AF



The flexible conductor is insulated with a 1/32-inch wall of asbestos fiber, purified by a special process. Felted asbestos fixture wire is recommended for all classes of fixture wiring, etc., and is especially adapted for fixtures in which the temperature liable to be attained by some parts are such as to render the use of rubber covered wires or cords either undesirable or impracticable. It can be "fished" through fixtures with the utmost ease. Standard length, 250 feet. Furnished on spools.

Size B. & S.	Diam. Over All In.	Stranding B. & S.	Wt., Lbs. per 1000 Ft.
10	200	65/28	42
12	177	66/30	29
14	141	41/30	20
16	123	26/30	14
18	111	16/30	10

### Colored Finish, Plain

Single conductor fixture wire, plain, similar to that described above, can be finished with gray, cream, old brass or bronze colored filling compound at an increase in price.

### Single Conductor—Solid

Either the black finish or colored finish fixture wire described above can be furnished with solid conductor where extreme flexibility is not necessary.

## Deltabeston Fixture Wire

### Cotton and Art Silk

This is the plain, black finish fixture wire with a braided outer covering of art silk or cotton. It is especially adapted for fixtures on which the wiring is exposed to view. It has a small diameter and is neat and attractive in appearance. This wire is furnished in single and two conductors. Standard length of spools, 250 feet.

### Type AF—Single Conductor

Plain with Braid



Size A.W.G.	Diameter Over All Inches	Wt. Lbs. per 1000 Feet	Size A.W.G.	Diameter Over All Inches	Wt. Lbs. per 1000 Feet
12	.207	28	16	.153	14
14	.171	20	18	.141	10

### Type AFPD—Duplex

Two Plain Conductors Twisted Together and Braided



12	.384	60	16	.276	32
14	.312	42	18	.252	24

### Type AFPO—Parallel

Two Plain Conductors Laid Flat and Braided Together



### Type AFC—Twisted Pair

Two Plain Conductors Each Braided and Twisted Together



12	.414	60	16	.306	33
14	.342	43	18	.282	25

## Deltabeston HPD Heater Cords



No. 60

Deltabeston HPD Heater Cord should not be confused with ordinary rubber and asbestos insulated heater cords. It is a product of fine materials, close precision, workmanship and careful inspection, both as to raw materials and the finished product.

The outer braid, which is of fine quality glazed cotton yarn, is woven over the two conductors in a manner similar to that of woven fire hose. The asbestos is applied in a uniform adhesive mass which forms a solid tube of asbestos fibres completely around the rubber insulated conductor.

Meets with a wide margin of safety, all requirements of the National Electric Code and an Underwriters' label is applied every 5 feet throughout the entire length.

Made in 4 standard styles of braiding Pattern Nos. 30, 40, 50 and 60.

Shipped in 250-ft. coils or in long lengths on 24-in. wooden reels.

Order by pattern number for all sizes and classes.

Special patterns supplied on orders for 5000 ft. or more.

### 3000-Cycle

Size B & S Gauge	14	16	18
Stranding	104/34	66/34	41/34
Carrying Capacity—Amperes	20	10	5
Weight per 1000 Feet—pounds	57	42	31

### 10000-Cycle

Size B & S Gauge	16	18	.....
Stranding	103/36	65/36	.....
Carrying Capacity—Amperes	10	5	.....
Weight per 1000 Feet—pounds	42	32	.....

## Deltabeston Heater Cord

### 2-Conductor, Stranded

Style A, Asbestos Braid Overall



For service where rubber is not necessary, felted asbestos heater cord is satisfactory. Each conductor is composed of 30 B.&S. gauge copper wires stranded together and insulated with a 1/32 inch wall of pure asbestos fiber. This is filled with a compound which gives it high dielectric strength and provides a tough, pliable insulation.

Style A is a fire-proof cord. The twisted conductors are covered with an asbestos braid.

The felted asbestos insulation does not deteriorate with age. The insulation so cements the wires that, even should some of them break, the fine strands will not penetrate the outer covering and cause short circuits.

Size B.&S.	Diameter Over All Inches	Stranding B.&S.	Wt. Lbs. per 1000 Ft.	Size B.&S.	Diameter Over All Inches	Strand-Wt., Lbs. ing. per B.&S. 1000 Ft.
12	.399	66/30	87	16	.323	26/30 52
14	.359	41/30	67	18	.299	16/30 41

### 2-Conductor, Braided

The braided conductor is made by braiding 34 B.&S. gauge copper wires instead of stranding 30 B.&S. wires.

### Style C, Glazed Cotton Braid Overall

Size B.&S.	Diameter Over All Inches	Stranding B.&S.	Wt. Lbs. per 1000 Ft.	Size B.&S.	Diameter Over All Inches	Strand-Wt., Lbs. ing. per B.&S. 1000 Ft.
14	.294	107/34	44	17	.264	52/34 27
16	.258	66/34	32	18	.234	41/34 23

### Style D, Glazed Cotton Braid on Each Conductor

14	.324	107/34	45	17	.276	52/34 28
16	.288	66/34	33	18	.264	41/34 24





**Deltabeston Coarse Strand Station Cable**  
For 750-Volt Service

Insulated with Pure Long-Fibre Asbestos, Varnished Cloth Insert—Finished with Black Asbestos Braid or Lead—Flame and Moisture-Proof



For wiring in open or in conduit where unusually severe conditions exist.

Insulation will not deteriorate under constant exposure to temperature of 250° F. Resists oil, acids and corrosive vapors.

Size C.M.	Stranding	Allowable Carry. Amps.	Diam. Bare Wire In.	*Max. O.D. In.	Factory Voltage Test 5 Min. Kv.	Std. Lgth. Ft. (Braided)	Wt. Lbs. per 1000 Ft.
1000000	61x 128	1000	1.152	1.542	10.5	500	3550
950000	61x 1248	950	1.123	1.513	10.5	500	3381
900000	61x 1215	900	1.093	1.483	10.5	500	3219
850000	61x 118	880	1.062	1.452	10.5	500	3048
800000	61x 1145	840	1.031	1.421	10.5	500	2888
750000	61x 1109	800	.998	1.388	10.5	500	2726
700000	61x 1071	760	.964	1.354	10.5	500	2558
650000	61x 1032	720	.929	1.318	10.5	500	2392
600000	61x 0992	680	.893	1.283	10.5	500	2226
550000	61x 095	650	.855	1.245	9.0	500	2060
500000	37x 1162	600	.814	1.204	9.0	500	1803
450000	37x 1103	550	.772	1.072	9.0	500	1642
400000	37x 1039	500	.728	1.028	9.0	500	1482
350000	37x 0973	450	.681	.981	9.0	500	1307
300000	37x 090	400	.630	.930	7.0	500	1140
250000	37x 0822	350	.575	.875	7.0	500	970
A. W. G.							
0000	19x 1055	325	.528	.788	7.0	1000	805
000	19x 094	275	.470	.730	7.0	1000	656
00	19x 0837	225	.418	.678	7.0	1000	536
0	19x 0745	200	.373	.633	4.5	1000	440
1	19x 0664	150	.332	.562	4.5	1000	365
2	7x 0974	125	.292	.522	4.5	1000	281
3	7x 0867	100	.260	.490	4.5	1000	232
4	7x 0772	90	.232	.462	4.5	1000	193
5	7x 0688	80	.206	.436	4.5	1000	161
6	7x 0612	70	.184	.414	4.5	1000	136
8	7x 0486	50	.146	.366	3.0	1000	96
10	7x 0385	30	.116	.316	3.0	1000	76
12	7x 0305	25	.092	.292	3.0	1000	50
14	7x 0242	20	.073	.273	3.0	1000	39

\*A tolerance of 5% over or under the o.d. shown above is necessary due to process of manufacture.

**Deltabeston Coarse Strand Cable**  
For 600-Volt Service

Insulated with a Heavy Wall of Pure Long-Fibre, Felted Asbestos—Finished with Asbestos Braid or Lead—Flame and Moisture-Proof



For open wiring in boiler rooms of central stations and industrial plants, kiln rooms; also for wiring resistance grids, rheostats and any other installations where fire hazards prevail.

Insulation will not deteriorate in constant temperature of 400° F. Resists oil, heat, moisture and corrosive vapors.

Size C.M.	Stranding	Allowable Carry. Amps.	Diam. Bare Wire In.	*O.D. In.	Std. Lgth. Ft. (Braided)	Wt. Lbs. per 1000 Ft.
1000000	61x 128	1000	1.152	1.592	500	3615
950000	61x 1248	950	1.123	1.563	500	3450
900000	61x 1215	900	1.093	1.533	500	3290
850000	61x 118	880	1.062	1.502	500	3115
800000	61x 1145	840	1.031	1.471	500	2955
750000	61x 1109	800	.998	1.398	500	2750
700000	61x 1071	760	.964	1.364	500	2580
650000	61x 1032	720	.929	1.329	500	2410
600000	61x 0992	680	.893	1.293	500	2245
550000	61x 095	650	.855	1.255	500	2080
500000	37x 1162	600	.814	1.154	500	1833
450000	37x 1103	550	.772	1.102	500	1660
400000	37x 1039	500	.728	1.058	500	1505
350000	37x 0973	450	.681	1.011	500	1330
300000	37x 090	400	.630	.960	500	1160
250000	37x 0822	350	.575	.905	500	995
A. W. G.						
0000	19x 1055	325	.528	.798	1000	823
000	19x 094	275	.470	.740	1000	672
00	19x 0837	225	.418	.688	1000	550
0	19x 0745	200	.373	.643	1000	458
1	19x 0664	150	.332	.602	1000	379
2	7x 0974	125	.292	.562	1000	316
3	7x 0867	100	.260	.470	1000	240
4	7x 0772	90	.232	.442	1000	200
5	7x 0688	80	.206	.416	1000	169
6	7x 0612	70	.184	.394	1000	143
8	7x 0486	50	.146	.306	1000	91
10	7x 0385	30	.116	.266	1000	64
12	7x 0305	25	.092	.232	1000	46
14	7x 0242	20	.073	.213	1000	34

\*A tolerance of 5% over or under the o.d. shown above is necessary due to process of manufacture.

**Deltabeston Flexible Strand Apparatus Cable**

For 750-Volt Service

Insulated with Pure Long-Fibre, Felted Asbestos, Varnished Cloth Insert—Finished with Black Asbestos Braid—Flame and Moisture-Proof

Recommended for wiring all low-voltage apparatus in power plants, steel mills and any other installations where severe conditions exist.

Insulation will not deteriorate under constant temperature of 250° F. Resists oil, acids and corrosive vapors.

Can be bent to a radius equal to 6 times its own diameter without reducing thickness of insulating wall.

Size C.M.	Stranding	Allowable Carry. Amps.	Diam. Bare Wire In.	*Max. O.D. In.	Factory Voltage Test 5 Min. Kv.	Std. Lgth. Ft.	Wt. Lbs. per 1000 Ft.
500000	61x7 (.0339)	600	.914	1.264	9.0	500	1829
450000	61x7 (.0319)	550	.863	1.163	9.0	500	1658
400000	61x7 (.0301)	500	.814	1.114	9.0	500	1495
350000	61x7 (.0284)	450	.768	1.068	9.0	500	1340
300000	61x7 (.0269)	400	.725	1.025	9.0	500	1219
250000	37x7 (.0320)	350	.671	.971	7.0	500	1060
A. W. G.							
0000	37x7 (.0284)	325	.598	.858	7.0	500	812
000	37x7 (.0253)	275	.532	.792	7.0	500	669
00	37x7 (.0226)	225	.474	.734	7.0	500	547
0	37x7 (.0201)	200	.422	.682	7.0	500	448
1	19x7 (.0253)	150	.380	.610	4.5	500	370
2	19x7 (.0226)	125	.339	.569	4.5	500	287
3	19x7 (.0201)	100	.302	.532	4.5	500	238
4	19x7 (.0179)	90	.269	.499	4.5	500	195
5	7x7 (.0253)	80	.228	.458	4.5	500	155
6	7x7 (.0226)	70	.203	.433	4.5	500	127
8	7x7 (.0179)	50	.161	.381	4.5	500	92
10	37x 01689	30	.118	.318	4.5	500	65
12	37x 01339	25	.094	.294	2.5	500	41
14	37x 0106	20	.074	.274	2.5	500	36

\*A tolerance of 5% over or under the o.d. shown above is necessary due to process of manufacture.

**Deltabeston Flexible Strand Cable**

For 600-Volt Service

Insulated with a Heavy Wall of Pure Long-Fibre, Felted Asbestos, Thoroughly Impregnated—Finished with Black Asbestos Braid

Flame and Moisture-Proof

For wiring all electrical apparatus where the most extreme conditions exist, especially where conductor heat is present.

Insulation will not deteriorate in a constant temperature of 400° F. Resists oil, flame and corrosive vapors.

Can be bent to a radius equal to 6 times its own diameter without reducing insulation thickness.

Size C.M.	Stranding	Allowable Carry. Amps.	Diam. Bare Wire In.	*O.D. In.	Std. Lgth. Ft.	Wt. Lbs. per 1000 Ft.
500000	61x7 (.0339)	600	.914	1.264	500	1850
450000	61x7 (.0319)	550	.863	1.193	500	1655
400000	61x7 (.0301)	500	.814	1.144	500	1500
350000	61x7 (.0284)	450	.768	1.098	500	1350
300000	61x7 (.0269)	400	.725	1.055	500	1215
250000	37x7 (.0320)	350	.671	1.001	500	1060
A. W. G.						
0000	37x7 (.0284)	325	.598	.868	1000	830
000	37x7 (.0253)	275	.532	.802	1000	675
00	37x7 (.0226)	225	.474	.744	1000	550
0	37x7 (.0201)	200	.422	.692	1000	460
1	19x7 (.0253)	150	.380	.650	1000	380
2	19x7 (.0226)	125	.339	.609	1000	310
3	19x7 (.0201)	100	.302	.512	1000	240
4	19x7 (.0179)	90	.269	.479	1000	200
5	7x7 (.0253)	80	.228	.438	1000	160
6	7x7 (.0226)	70	.203	.413	1000	130
8	7x7 (.0179)	50	.161	.321	1000	85
10	37x 01689	30	.118	.268	1000	60
12	37x 01339	25	.094	.234	1000	41
14	37x 0106	20	.074	.214	1000	32

\*A tolerance of 5% over or under the o.d. shown above is necessary due to process of manufacture.

## Deltabeston Switchboard and Rheostat Wire

### Black Asbestos Braid, Solid Conductor

For wiring rheostats, control panels, switchboards and all other installations where heat is a factor. The insulation will not dry out with age, is unaffected by moisture, steam or severe heat (400° F.), is flexible at all times and remains concentric when the wire is bent.

### For 600-Volt Service

Insulated with a Heavy Wall of Pure Long-Fibre, Felted Asbestos—Finished with a Heavy Asbestos Braid



Insulation consists of a heavy wall of compressed felted asbestos applied directly to the conductor in a smooth mass of uniform thickness. It is then thoroughly dried and completely saturated with a compound by means of a process which completely excludes moisture, toughens the insulation and moulds it into a compact body.

Over this is closely braided an asbestos covering, which is impregnated with a flame and weatherproof compound, cementing braid to inner layer of insulation and resulting in a close, tight wall of moulded asbestos.

Finish, black or white.

Size A.W.G.	Carrying Cap. Amps.	WALL THICKNESS INSULATION, IN.		O.D. In.	Factory Voltage Test 5 Min. Kv.	Std. Lgth.	Wt. Lbs. per 1000 Ft.
		Felted Asbestos	Asbestos Braid				
0000	325	.060	.045	.670	3000	250' Reel	735
000	275	.060	.045	.620	3000	250' Reel	590
00	225	.060	.045	.575	3000	250' Reel	485
0	200	.060	.045	.535	3000	250' Reel	340
1	150	.040	.045	.459	2500	250' Reel	300
2	125	.040	.045	.428	2500	250' Reel	245
3	100	.040	.045	.399	2500	250' Coil	200
4	90	.040	.045	.374	2500	250' Coil	165
6	70	.035	.045	.322	2500	250' Coil	113
8	50	.035	.040	.278	2000	250' Coil	75
10	30	.035	.040	.252	2000	500' Coil	52
12	25	.032	.040	.225	2000	500' Coil	38
14	20	.032	.040	.208	2000	500' Coil	29
16	10	.032	.040	.195	2000	500' Coil	22
18	5	.032	.040	.184	2000	500' Coil	18

### For 750-Volt Service

Insulated with Varnished Cloth, Felted Asbestos, Asbestos Braid

Insulation consists of a wall of black varnished cloth, free from all imperfections and applied in the form of helically-wound tapes with the joints in successive layers being staggered. A non-hardening plastic compound is applied between the layers of varnished cloth.

Over this a wall of felted asbestos thoroughly impregnated with a flame and moisture-proof compound is applied by a special process which actually seals the varnished cambric beneath it.

Outer finish is a heavy asbestos braid, also flame and moisture-proof, which protects the insulation from abrasion. After impregnation the braid becomes a part of the insulation, all spaces being completely filled.

Standard color, black; other colors supplied if desired.

Size A.W.G.	Carrying Cap. Amps.	WALL THICKNESS INSULATION, IN.		O.D. In.	Factory Voltage Test 5 Min. Kv.	Std. Lgth.	Wt. Lbs. per 1000 Ft.
		Varnished Cambric	Felted Asbestos				
0000	325	.040	.030	.690	7500	250' Reel	750
000	275	.040	.030	.640	7500	250' Reel	605
00	225	.040	.030	.595	7500	250' Reel	490
0	200	.040	.030	.555	7500	250' Reel	395
1	150	.040	.030	.519	7500	250' Reel	320
2	125	.040	.030	.488	5000	250' Reel	260
3	100	.040	.030	.469	5000	250' Reel	215
4	90	.040	.030	.434	5000	250' Reel	175
6	70	.040	.030	.392	5000	250' Coil	120
8	50	.030	.020	.308	5000	250' Coil	80
10	30	.030	.020	.282	3500	250' Coil	60
12	25	.030	.020	.261	3500	500' Coil	45
14	20	.030	.020	.244	3000	500' Coil	32
16	10	.025	.020	.221	3000	500' Coil	25
18	5	.025	.020	.210	3000	500' Coil	20

## Deltabeston Switchboard Wire

### For 750-Volt Service

Insulated with Varnished Cloth, Felted Asbestos, Flame-Proof Cotton Yarn Braid—Solid Conductor, Tinned



For wiring switchboards and all other types of control apparatus.

Insulation consists of a wall of black varnished cambric applied in the form of helically-wound tapes with joints in successive layers being staggered. A non-hardening plastic compound is applied between the layers of varnished cambric and excludes moisture and air. Over this a wall of felted asbestos, thoroughly impregnated with a flame and moisture-proof compound, is applied by a special process which seals the varnished cambric beneath it. Outer finish is a closely woven cotton yarn braid saturated with a flame and moisture-proof compound.

Standard color, gray; other colors can be supplied.

Size A.W.G.	Carrying Cap. Amps.	WALL THICKNESS INSULATION, IN.			O.D. In.	Factory Voltage Test 5 Min. Kv.	Std. Lgth.	Wt. Lbs. per 1000 Ft.
		Varnished Cambric	Felted Asbestos	Cotton Braid				
0000	325	.040	.030	.650	7000	250' Reel	825	
000	275	.040	.030	.600	7000	250' Reel	680	
00	225	.040	.030	.555	6000	250' Reel	560	
0	200	.040	.030	.515	6000	250' Reel	470	
1	150	.040	.030	.479	6000	250' Reel	400	
2	125	.040	.030	.448	4500	250' Reel	310	
4	90	.040	.030	.394	4500	500' Reel	225	
6	70	.040	.030	.352	4500	500' Reel	156	
8	50	.030	.020	.271	2500	500' Reel	85	
10	30	.030	.020	.245	2500	500' Coil	62	
12	25	.030	.020	.224	2500	500' Coil	45	
14	20	.030	.020	.207	2500	500' Coil	34	

## Deltabeston Stove Wire

Felted Asbestos Insulation—Asbestos Braid Over All



Size A.W.G.	Allowable Carrying Capacity Amperes	Felted Asbestos Insulation Inches	*O.D. Inches	Standard Length	Wt. Lbs. per 1000 Feet
000	275	.060	.620	250' Reel	590
00	225	.060	.570	250' Reel	485
0	200	.060	.535	250' Reel	390
1	150	.040	.449	250' Reel	300
2	125	.040	.418	250' Reel	245
3	100	.040	.389	250' Coil	200
4	90	.040	.360	250' Coil	165
6	70	.035	.322	250' Coil	113
8	50	.035	.288	250' Coil	75
10	30	.035	.262	500' Coil	52
12	25	.032	.231	500' Coil	38
14	20	.032	.214	500' Coil	29
16	10	.032	.200	500' Coil	22
18	5	.032	.190	500' Coil	18

## Felted Asbestos Insulation—Plain



Size A.W.G.	Allowable Carrying Capacity Amperes	*O.D., INCHES		Standard Coil in Feet	Wt. LBS. PER 1000 FT.	
		.032" Wall	.040" Wall		.032" Wall	.040" Wall
6	70	.225	.242	250	106	120
8	50	.192	.208	250	65	72
10	30	.166	.182	500	38	41
12	25	.144	.160	500	25	27
14	20	.128	.144	1000	17.5	19
16	10	.115	.131	1000	12	14
18	5	.105	.121	1000	9	10.5

\*A tolerance of 3% over or under the o.d. shown above is necessary due to process of manufacture.

**Deltabeston Round, Square and Rectangular Magnet Wire**



Round



Rectangular

This wire is insulated with pure long fibre asbestos applied by a unique process which dispenses the fibres in a completely aired atmosphere while being spun around the copper. The result is a firmly compressed insulating wall of intertangled asbestos fibres, which, after being thoroughly impregnated with various varnishes and waxes, is much greater than the thickness of double cotton magnet wire insulation. It is rated as Grade B insulation and its heat resisting qualities make it practically indestructible by any temperature it may be subjected to in commercial service.

**Standard Finishes**

Standard brown finish has a smooth waxy surface which will not harden with age. It resists abrasion exceptionally well and the copper can be formed into intricate coils with the utmost ease.

Standard white finish has a covering of pure white asbestos and is a soluble insulation. This finish is recommended for those who desire to impregnate their own coils.

White enamel (WE finish) consists of standard white finish with a baked enamel finish over the outside, the result being an asbestos insulation with a coating of high grade enamel over all.

Enameled asbestos (EA finish) is enameled magnet wire insulated with a very thin coating of asbestos. This wire can be furnished in any of the above finishes.

**Round**

Size A.W.G.	DIAMETER, INCHES		Approx. Lgth., Ft. per Lb.	Ship. Wt., Lbs. per Reel
	Bare Wire	Over Insulation (Approx.)		
3/0	.4100	.429	1.950	200
2/0	.3650	.384	2.446	200
0	.3249	.339	3.075	200
1	.2893	.303	3.871	200
2	.2576	.271	4.864	200
3	.2294	.242	6.124	200
4	.2043	.216	7.716	200
5	.1819	.194	9.690	200
6	.1620	.174	12.18	200
7	.1443	.156	15.31	150
8	.1285	.140	19.32	150
9	.1144	.126	24.25	150
10	.1019	.112	30.37	150
11	.0907	.101	38.33	150
12	.0808	.091	48.05	150
13	.0720	.082	60.83	150
14	.0641	.074	76.28	150
15	.0571	.067	95.51	150
16	.0508	.059	119.3	50
17	.0453	.053	149.6	50
18	.0403	.048	186.7	50
19	.0359	.044	231.9	50
20	.0320	.040	288.6	50

**Round Magnet Wire**

Size A.W.G.	Full Spool Pounds	150 to 199 Lbs.	50 to 149 Lbs.	20 to 49 Lbs.	5 to 19 Lbs.	4 Lbs. and Less
3/0 to 6	200	2	4	8	20	40
7 to 15	150	...	4	6	16	40
16 to 20	50	...	...	4	12	40
21 to 25	20	...	...	...	8	40

**Rectangular Magnet Wire**

Size Mils. Thick	Full Spool Pounds	100 to 199 Lbs.	50 to 99 Lbs.	25 to 49 Lbs.	24 Lbs. and Less
60 to 300	200	3	6	12	25
20 to 50	100	...	3	6	25

Prices Upon Application

**Round Magnet Wire**

Size B. & S. Wire No.	Single Cotton Covered			Double Cotton Covered		
	Diam. Bare Wire In.	Thickness of Ins. In.	Diam. Over All In.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.
1	.2893	.009	.2983	.018	.3073	3.88
2	.2576	.009	.2666	.018	.2756	4.9
3	.2294	.009	.2384	.018	.2474	6.17
4	.2043	.009	.2133	.018	.2223	7.81
5	.1819	.009	.1909	.014	.1959	9.84
6	.1620	.009	.1700	.014	.1760	12.37
7	.1443	.009	.1523	.014	.1583	15.58
8	.1285	.009	.1375	.014	.1425	19.6
9	.1144	.006	.1204	.012	.1264	24.71
10	.1019	.006	.1079	.012	.1119	31.07
11	.0907	.006	.0967	.010	.1007	39.12
12	.0808	.005	.0858	.010	.0908	49.12
13	.0720	.005	.0770	.009	.0820	62.00
14	.0641	.005	.0691	.009	.0731	77.86
15	.0571	.005	.0621	.009	.0661	97.80
16	.0508	.005	.0558	.009	.0598	122.91
17	.0452	.005	.0502	.009	.0542	154.04
18	.0403	.005	.0453	.009	.0493	193.64
19	.0359	.005	.0409	.009	.0449	233.16
20	.032	.005	.0370	.009	.0410	303.
21	.0285	.005	.0335	.009	.0375	379.
22	.0253	.0045	.0298	.009	.0343	471.
23	.0226	.0045	.0271	.009	.0316	584.
24	.0201	.0045	.0246	.009	.0291	726.
25	.0179	.00425	.02215	.0085	.0264	932.
26	.0159	.00425	.02015	.0085	.0244	1149.
27	.0142	.00425	.01845	.0085	.0227	1419.
28	.0126	.00425	.01685	.0085	.0211	1739.
29	.0113	.00425	.01555	.0085	.0198	2130.
30	.01002	.00425	.01427	.0085	.01852	2606.
31	.00892	.00425	.01317	.0085	.01742	3233.
32	.00795	.00425	.01220	.0085	.01645	3894.
33	.00708	.00425	.01133	.0085	.01558	4666.
34	.0063	.00425	.01055	.0085	.01480	5477.
35	.00561	.00425	.00986	.0085	.01411	6602.
36	.005	.00425	.00925	.0085	.0135	7556.
37	.00445	.00425	.00870	.0085	.01295	8462.
38	.00396	.00425	.00821	.0085	.01246	9860.
39	.00353	.00425	.00778	.0085	.01203	12052.
40	.00314	.00425	.00739	.0085	.01164	14334.

**Single Silk Covered**

**Double Silk Covered**

Size B. & S. Wire No.	Diam. Bare Wire In.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.
16	.0508	.002	.0528	127	.0035	.0543	126
17	.0452	.002	.0472	160	.0035	.0487	159
18	.0403	.002	.0423	201	.0035	.0438	199
19	.0359	.002	.0379	253	.0035	.0394	250
20	.032	.002	.034	319	.0035	.0355	314
21	.0285	.002	.0305	402	.0035	.032	396
22	.0253	.002	.0273	506	.0035	.0288	498
23	.0226	.002	.0246	637	.0035	.0261	626
24	.0201	.002	.0221	802	.0035	.0236	787
25	.0179	.002	.0199	1009	.0035	.0214	990
26	.0159	.002	.0179	1268	.0035	.0198	1242
27	.0142	.002	.0162	1595	.0035	.0177	1560
28	.0126	.002	.0146	2004	.0035	.0161	1946
29	.0113	.002	.0133	2516	.0035	.0148	2431
30	.01002	.002	.01202	3145	.0035	.01352	3030
31	.00892	.002	.01092	3930	.0035	.01242	3763
32	.00795	.002	.00995	4923	.0035	.01145	4662
33	.00708	.002	.00908	6156	.0035	.01058	5800
34	.0063	.002	.0083	7671	.0035	.0098	7064
35	.00561	.002	.00761	9547	.0035	.00911	8666
36	.005	.002	.007	11836	.0035	.0085	10832
37	.00445	.002	.00645	13396	.0035	.00795	12149
38	.00396	.002	.00596	16656	.0035	.00746	14776
39	.00353	.002	.00553	20678	.0035	.00703	18369
40	.00314	.002	.00514	25628	.0035	.00664	22052

**Magnet Wire Reels and Spools**

Size B. & S. No.	Kind of Cover	Reel No.	Diam. In.	Lbs. per Reel	Size B. & S. Nos.	Kind of Cover	Reel No.	Diam. In.	Lbs. per Reel
-1	.....	1	28	200	27-31	Cotton	15	5	2-5
1-14	.....	2	23	200	27-31	Silk	15	5	4-8
15-18	.....	11	13	50	32-36	Cotton	16	4	1-2 1/2
19-21	.....	13	9	25	32-36	Silk	16	4	1-5
22-26	Cotton	14	6	7-10	36-40	Cotton	17	3	1-2
21-26	Silk	14	6	8-12	37-40	Silk	17	3	1-2

\*No. 1 and larger.



## Square and Rectangular Magnet Wire

Increasing attention is being given to the economies to be secured by the substitution of Square or Rectangular for round magnet wire. When round wire is used, considerable space is wasted, even when turns are fitted together as closely as possible, whereas the waste spaces are filled when square or rectangular wire is used, and a greater current carrying capacity secured.

### Square Magnet Wire

Square magnet wire can be furnished in all sizes from number 14 to 0000 B. & S. gauge. (In computing the gauge the diameter of round wire is comparable to the thickness of square wire.) Sizes smaller than No. 14 cannot be regularly procured owing to the difficulty of winding.

### Rectangular Magnet Wire



Rectangular magnet wire sizes have not, as yet, been standardized but can be supplied in sizes from .410 to .020 in thickness and from .460 to .064 in width and the regular insulation is double cotton wound. Rectangular wire is not carried in stock, but made specially on order, and in view of this, orders should not be for less than 200 pounds of any size.

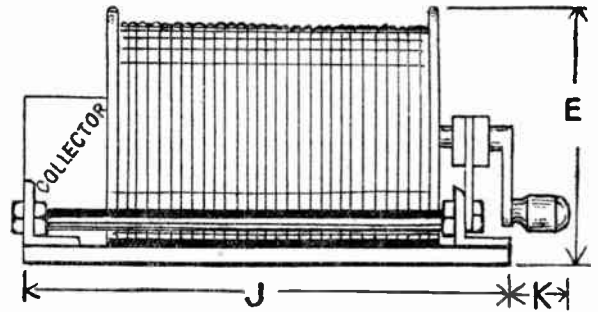
Prices on square and rectangular magnet wire will be quoted upon application.

## Round Enameled and Cotton Covered Magnet Wire

Size B&S	Over All Diam. E&SCC	Over All Diam. E&DCC	ENAMEL SCC		ENAMEL DCC		Diam. In.
	In.	In.	Feet per Lb.	Lbs. to Reel or Spool	Feet per Lb.	Lbs. to Reel or Spool	
10	.1101	.1053	30.77	200	30.42	200	23
11	.0989	.1029	39.28	200	38.77	200	23
12	.0880	.093	49.01	200	48.26	200	23
13	.0791	.0831	62.28	200	61.22	200	23
14	.0712	.0752	78.76	200	77.39	200	23
15	.0642	.0682	99.30	50	97.25	50	13
16	.0579	.0619	124.17	50	121.27	50	13
17	.0523	.0563	155.97	50	151.90	50	13
18	.0471	.0511	195.78	50	189.63	50	13
19	.0427	.0467	253.40	25	242.96	25	9
20	.0387	.0427	308.41	25	295.90	25	9
21	.0350	.0390	386.04	25	367.75	25	9
22	.0313	.0358	487.04	8	463.54	10	6
23	.0286	.0331	608.02	8	575.18	6	6
24	.0260	.0305	761.44	8	711.39	6	6
25	.02355	.0278	946.61	8	874.89	6	6
26	.02145	.0257	1,182.73	8	1,090.86	6	6
27	.01985	.0240	1,480.60	5	1,346.60	3	5
28	.01815	.0223	1,859.77	4	1,658.40	3	5
29	.01685	.0210	2,310.54	4	2,006.02	3	5
30	.01517	.01942	2,850.87	4	2,456.58	2	5
31	.01407	.01832	3,535.69	2 1/2	2,986.59	2	5
32	.01310	.01735	4,358.25	2	3,550.51	1	4
33	.01213	.01638	5,314.34	2	4,212.83	1	4
34	.01125	.0155	6,458.70	1	4,872.58	1	4
35	.01056	.01481	7,552.30	1	5,668.61	1	4
36	.00985	.0141	9,171.79	1	6,488.03	1	4

## Gleason Hand-Wound Reels

### Fire Department Reels



Designed to operate searchlights, etc. Capacity 60 amperes. All steel, ball-bearing with locking device. Painted gray; extra for fine coloring.

Dimensions: J, 24 inches; E, 12 1/2 inches.

Capacity: 250 ft. No. 14 cable; 175 ft. No. 10; 175 ft. No. 8. Reel Only.....each \$60.00  
Double capacity adds \$20.00.

### Type C Reels

Designed for stacking machines. Capacity: 50 ft. No. 10-3 cable; 70 ft. No. 14-3 cable.

Reel Only.....each \$30.00

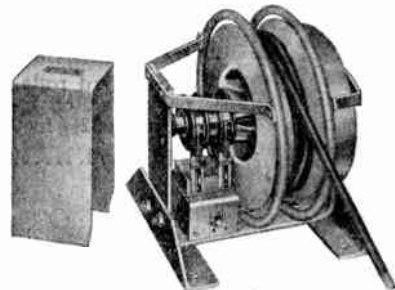
### Outdoor Reels

For coal loading machines. Made of wood to prevent rust.

No.	Each	Ft.	CAPACITY CABLE	Size
A1	\$48.00	125		10-4
A2	60.00	250		10-4
A3	125.00	300		4-3

## Gleason Spring-Wound Reels

For Hoists, Cranes, Lifting Magneto, Etc.



No. S-15

furnished with 18 ft. No. 14-3 cable. 30 amps.  
No. S-15.....each \$45.00

No. S-25

30 amps. Capacity: 25 ft. No. 10-3; 30 ft. No. 14-3.  
No. S-25 Reel Only.....each \$75.00

No. S-60

60 amps. Capacity cable: 50 ft. No. 10-3; 40 ft. No. 6-2; 60 ft. No. 14-30  
No. S-60 Reel Only.....each \$90.00

No. S-61

Special reel for monorail hoists designed to serve 100-ft. rail and not pull the hoist.  
No. S-61 Reel Only.....each \$95.00

No. S-75

60 amps. Capacity cable: 100 ft. No. 14-3; 75 ft. No. 10-3; 60 ft. No. 6-3; 75 ft. No. 6-2.  
No. S-75 Reel Only.....each \$150.00

No. S-100

60 amps. Capacity cable: 150 ft. No. 14-3; 100 ft. No. 10-3; 100 ft. No. 8-3; 100 ft. No. 6-2.  
No. S-100 Reel Only.....each \$200.00

No. S-200

120 amps. For various larger and longer cables.  
No. S-200 Reel Only.....each \$400.00

### Motor-Driven Reels

For long heavy cables. Must be made to fit the application. Complete information upon request.

**Friction Tape**



**Sticka Black Friction Tape**

A popular-priced tape for general use.

Used to protect the splicing compound on a wire joint from abrasion.

Roll contains 1/2 pound gross of 3/4-inch tape, length 60 feet to a roll.

Per Pound..... \$ .90



**Victor Black Friction Tape**

Protects the splicing compound on wire joints from abrasion.

A high grade tape for outside or inside work.

Roll contains 1/2 pound gross of 3/4-inch tape, 67 1/2 feet to a roll.

Per Pound..... \$ 1.00



**Amazon ASTM Black Friction Tape**

Highest quality friction tape to meet the most strict specifications.

Standard rolls contain 1/2 pound net of 3/4-inch tape, which is 82 1/2 feet to a roll.

Per Pound..... \$ 1.25



**Splicing Tape  
Victor Black Rubber Splicing Tape**

A good grade, unvulcanized compound.

Will fuse into a homogeneous mass at average air temperature under heat of the fingers.

Half-pound roll gross, .030 inch thick, 21 feet to a roll.

Per Pound..... \$ 1.00



**Amazon ASTM Gray Rubber Splicing Tape**

A compound of the best quality, partially unvulcanized, high in dielectric and tensile strength.

The adjacent layers adhere readily on a joint and become a solid, homogeneous mass.

Roll weight 1/2 pound net, 3/4-inch tape, .030-inch thick, 26 feet to roll.

Per Pound..... \$ 1.25

**Manson Friction Tape**



Has a closely woven cotton fabric of highest quality into which has been frictioned (on both sides) a rubber compound containing new Heavea rubber with chemically pure admixture.

Rolls, 3/4 in. wide, containing 78 feet, black, per lb..... \$ 1.10



**Okonite Rubber Tape**

Made from fine Up-River Para rubber. Ingredients are selected, prepared and mixed with care.

Impervious to moisture.

Rolls, 3/4 in. wide, containing 30 feet, black, per lb..... \$ 1.70



**Hydro-Proof Tape**

A waterproof tape with an average dielectric strength per layer of 1850 volts.

Width, 3/4 inch.

Packed 24 yards per 8-ounce roll.

Per Pound..... \$ 1.00

**Crescent Chatterton Compound**

This is an insulating material used chiefly in submarine cable construction to fill the interstices between the strands of the cable conductors.



No. 1 Domestic..... per lb. \$ 2.00

**Allen Soldering Salts**

These salts are dry and in concentrated form. To make up a perfect flux of sufficient strength to use on old metal add 3 parts water to 1 part salts; on new metal, use even greater dilution.

1/2-Pound Bottles..... each \$ .40  
1-Pound Bottles..... each .59  
5-Pound Bottles..... each 2.70



**Crescent Soldering Salts**



A combination of several of the most efficient soldering agents in a convenient soluble form. Gives off no obnoxious gases. Much superior to old time acids for the designed purpose.

Price, No. 2779, 1-pound..... each \$ .90  
" " 2780, 1/2 " ..... " .68

**Burnley's Soldering Salts**

Size Can Lbs.	PRICE PER POUND			
	QUANTITY, POUNDS			
1/2	1 to 25	25 to 100	100 to 200	300 Lbs. and over
1	\$.65	\$.58	\$.53	\$.48
5	.62	.55	.50	.46
	.48	.42	.38	.36



## Allen Soldering Sticks



An economical rapid flux. Just a touch to the hot metal does the work.

Fuses the solder rapidly without fuss, muss or after corrosion. Size, 1x5¼ inches.  
 Samson Formula.....each \$.15  
 Standard Formula.....each .30

## Star and Crescent Soldering Sticks



An economical, quick acting and reliable solder stick.  
 Each.....\$.30

## Burnley's Soldering Sticks



Size of stick: 6 inches long, 1 inch diameter.  
 Standard package, 3 dozen in a carton.

Each.....\$.30

## Allen Soldering Paste



A corrosion free, soft form of flux.

Job Size.....	each	\$.08
2-Ounce Can.....	each	.13
2-Ounce Tube.....	each	.25
4-Ounce Can.....	each	.25
½-Pound Can.....	each	.50
1-Pound Can.....	each	.90
5-Pound Can.....	each	4.40

## Star and Crescent Soldering Paste

Assures a smooth, even-flowing metal and perfect results. Thoroughly mixed, so that each paste particle contains all the flux elements. Strong and rapid in action and non-corrosive. Packed in tin boxes.



Cat. No.....	2775	2776	2777	2778
Size Tins.....oz.	2	4	8	16
Price.....each	\$.30	.40	.70	1.20

## Burnley Soldering Paste

Requires no preparation, always ready for instant use.



Size Can	Price Each	Size Can	Price Each
2-Oz.	\$.30	5-Pound	\$6.50
4-Oz.	.50	10-Pound	....
½-Pound	.90	50-Pound	....
1-Pound	1.40	....	....

## Nokorode Soldering Paste

This paste will flux all metals except aluminum. It takes the place of acid in all soldering jobs. Non-corrosive, safe as resin and rapid as acid. Not affected by heat and does not spatter. The solder will not turn dark after using.



Size Can	Standard Package	Price Each	Price per Carton
2 Oz.	12 to Carton	\$.15	\$1.20
1 Lb.	6 to Carton	.90	4.50
10 Lb.	Any Quantity	.50	Lb. ....
25 Lb.	Any Quantity	.45	Lb. ....
50 Lb.	Any Quantity	.43	Lb. ....
500 Lb.	In Barrel	.40	Lb. ....

## Sherman Set Screw Connectors

Number Plainly Stamped on Each Connector. A great help in re-ordering and saves much time and possible mistakes in sorting small mixed stocks.

Screws Heavily Galvanized, Hence Rust-proof. This prevents rusting in dealer's stock, and enables consumer to use connectors over again when removed from temporary work.

Neatly Boxed and Plainly Labeled. Insuring neat shelf stock.

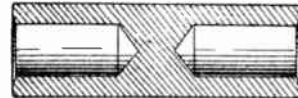
These connectors are made from solid brass rod; all dimensions and proportions are carefully held to accurate size.

Four-screw connectors are made also with hole clear through, and two-screw connectors can be furnished in divided wall style.

### For Stranded Cable With Divided Wall



No. 74 Connector



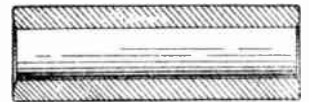
Showing Interior Construction

Cat. No.	Size Stranded Cable	Screws	Diam. Hole In.	Outside Diam. In.	Length In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
60	12, 14	2	.110	¼	1¼	200	4
61	10	2	.140	5/16	1¼	200	5½
62	10	4	.140	5/16	1½	200	7
63	8	2	.160	5/16	1¼	200	5½
64	8	4	.160	5/16	1½	200	6½
65	6, 7	2	.209	3/8	1¼	150	5½
66	6, 7	4	.209	3/8	1½	150	7
67	4, 5	2	.265	7/16	1½	100	6
68	4, 5	4	.265	7/16	1¾	100	7
69	2, 3	2	.312	1/2	1½	100	6½
70	2, 3	4	.312	1/2	1¾	100	9
71	0, 1	4	.390	9/16	2¼	50	5½
72	00	4	.437	5/8	2½	50	7½
73	000	4	.500	¾	2¾	25	6½
74	0000	4	.562	7/8	2¾	25	9¼

### For Solid and Stranded Cable Wire Holes Extending Clear Through



No. 5 Connector



Showing Construction

Cat. No.	Max. Solid	Wire Str.	Screws	Diam. Hole In.	Outside Diam. In.	Length In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
0	12	....	2	.106	5/16	1½	100	3¾
1	8	9	2	.147	5/16	1½	100	3½
2	6	7	2	.185	3/8	1¾	100	5
3	4	5	2	.228	7/16	1¾	100	7
4	2	3	2	.27	1/2	1¾	100	8½
5	0	1	2	.33	9/16	1¾	50	5
6	00	0	2	.38	5/8	1¾	50	6
7	4	5	4	.228	7/16	1¾	100	7½
8	2	3	4	.37	1/2	1¾	100	9
9	0	1	4	.43	9/16	1¾	50	5½
10	00	0	4	.50	5/8	1¾	50	6¾
11	000	00	4	.56	3/4	2	50	7½
12	0000	000	4	.62	7/8	2	50	8½
13	....	0000	4	.68	1	2¾	25	6¾



**Sherman Soldering Lugs**



U. S. Pat. Reissue 14401

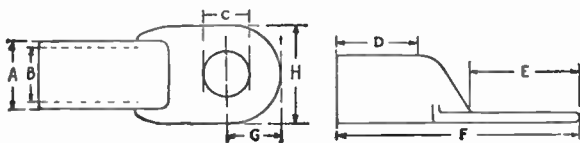
Lugs are seamless all around. The solder cannot leak out at the closed end. Also better conductivity is secured. Round end lugs in small sizes are recommended.

These soldering lugs or drawn copper terminals are now approved and listed by the Underwriters' Laboratories. The requirements are exacting, and the designs and dimensions have been carefully worked out.

**Round End**

Size Inches	Amp. Cap. Rubber Insul. Conductors N. E. C. Std.	Maximum Stranded Wire B. & S. Gauge	Approx. Weight Pounds per 1000
3/16	25	10	4
1/4	35	8	5 1/4
5/16	50	6	11
3/8	70	4	17
7/16	90	2	24
1/2	125	0	32
9/16	150	00	43
5/8	175	000	60
11/16	225	0000	78
13/16	237	*250000	145

**Dimensions**



Approximate Dimensions, Inches

A	B	C	D	E	F	G	H
3/16	.1368	11/64	3/8	15/32	15/16	7/32	17/64
1/4	.186	13/64	3/8	1/2	11/32	7/32	3/8
5/16	.232	13/64	3/8	19/32	17/32	1/4	7/16
3/8	.285	9/32	7/16	11/16	111/32	9/32	17/32
7/16	.336	9/32	1/2	3/4	11 1/2	11/32	5/8
1/2	.398	11/32	5/8	13/16	13/4	13/32	3/4
9/16	.461	13/32	11/16	15/16	2	7/16	13/16
5/8	.511	13/32	25/32	1	2 1/8	1/2	29/32
11/16	.559	13/32	27/32	1 1/2	2 3/2	17/32	31/32
13/16	.651	13/32	31/32	1 3/4	2 5/8	5/8	19/16

Square ends furnished in above sizes, if required. Bottom not seamless. Over all dimensions the same.

**Square End**

Size Inches	Amp. Cap. Rubber Insul. Conductors N. E. C. Std.	Maximum Stranded Wire B. & S. Gauge	Approx. Weight Pounds per 1000
15/16	325	*400000	225
1	362	*450000	285
1 1/16	400	*500000	370
1 1/8	450	*600000	410
1 1/4	550	*800000	715
1 1/2	650	*1000000	760
1 3/4	850	*1500000	1470
2 1/4	1050	*2000000	2700

Approximate Dimensions, Inches

A	B	C	D	E	F	G	H
15/16	.776	19/32	1 1/16	1 5/8	3 3/8	3/4	1 13/32
1	.82	18/32	1 1/4	1 3/4	3 7/16	13/16	1 1/2
1 1/16	.88	18/32	1 1/2	2 1/8	4 1/16	15/16	1 9/16
1 1/8	.943	18/32	1 5/8	2 3/4	4 7/16	1	1 11/16
1 1/4	1.084	17/32	2	2 1/2	5	1 1/8	1 15/16
1 1/2	1.21	29/32	2	2 1/2	5 3/8	1 3/16	2 1/8
1 3/4	1.46	1 1/32	2 3/8	3 1/8	6 5/8	1 1/16	2 5/8
2 1/4	1.66	1 1/32	2 5/8	3 5/8	7 1/2	1 5/8	3 1/16

\*Circular mils. Sizes 1/4 to 13/16-inch furnished round end, unless otherwise specified. Sizes 15/16-inch and larger furnished square end unless otherwise specified.

**STUD HOLE.**—Lugs furnished with special size or location of stud holes at same prices as for regular lugs, with extra charge for each size.

**TINNING.**—Lugs tinned inside of tubular portion will be furnished at extra charge, depending on size.

**MARKING.**—For identification, as approved fittings, lugs will be marked with letter S and Underwriters' rating in amperes, placed crosswise of the flat portion at wire end.

To Select Terminals According to the N.E.C. Ratings Governing Knife Switches, Use the Following Equivalents

Capacity, amperes	30	60	100	200	400	600	800	1000
Size Lug... inches	1/4	3/8	1/2	11/16	1 1/16	1 1/16	1 3/4	2 1/16

**Sherman Soldering Lugs**  
**2-Hole**



Two-hole lugs are made from seamless tubing and furnished square end, unless otherwise specified.

Flat portion (E) may be made to order either longer or shorter but tubular portion (D) cannot be changed.

Size Inches	Amp. Cap. Rubber Insul. Conductors N. E. C. Std.	Max. Stranded Wire B & S Gauge	Approx. Weight Pounds per 1000
3/16	25	10	5
1/4	35	8	8
5/16	50	6	14
3/8	70	4	23
7/16	90	2	34
1/2	125	0	46
9/16	150	00	68
5/8	175	000	90
11/16	225	0000	115
13/16	250	250000 c. m.	218
15/16	325	400000 c. m.	270
1 1/16	400	500000 c. m.	420
1 1/8	450	600000 c. m.	475
1 1/4	550	800000 c. m.	845
1 1/2	650	1000000 c. m.	1030
1 3/4	850	1500000 c. m.	1850
2 1/4	1050	2000000 c. m.	3200

**TINNING.**—Lugs tinned inside of tubular portion will be furnished at extra charge, depending on size.

**MARKING.**—For identification as approved fittings, lugs will be marked with letter S and Underwriters' rating in amperes, placed crosswise of the flat portion at wire end.

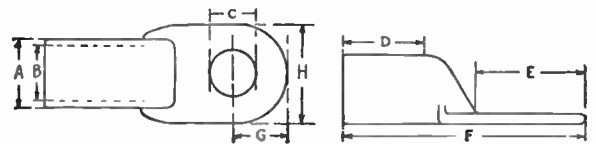
**2-Hole, Center Formed and Angle Lugs**

These types are standard but not regularly carried in stock. Will be made up promptly to order at percentage listed below, added to price of regular lugs plus net charges listed.

3/16 to 1/8 Inch Inclusive	add 75% plus \$3.00 net
5/8 to 1 1/16 Inch Inclusive	add 75% plus 4.25 net
1 1/8 to 1 1/2 Inches Inclusive	add 75% plus 5.50 net
1 3/8 to 1 7/8 Inches Inclusive	add 50% plus 7.50 net
1 3/4 Inches	add 50% plus 9.00 net
2 1/16 Inches	add 50% plus 11.00 net

Above net charges must be added for each different size of lugs ordered. These net charges cover special machine set-up expense regardless of quantity of lugs ordered.

**Dimensions**

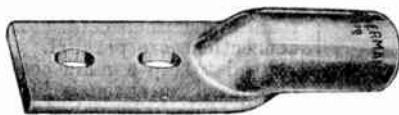


APPROXIMATE DIMENSIONS, INCHES

A	B	C	D	E	F	G	H	J
3/16	.1368	5/32	3/8	3/4	17/32	5/32	17/64	3/8
1/4	.186	3/16	3/8	7/8	1 1/32	3/16	3/8	7/16
5/16	.232	7/32	3/8	1 1/16	1 3/4	1/4	7/16	1 1/2
3/8	.285	1/4	7/16	1 1/4	1 29/32	5/16	17/32	5/8
7/16	.336	9/32	1/2	1 3/8	2 1/8	5/16	5/8	1 1/16
1/2	.398	11/32	5/8	1 11/16	2 5/8	3/8	3/4	7/8
9/16	.461	13/32	11/16	2	3 1/16	7/16	13/16	1
5/8	.511	13/32	25/32	2	3 3/8	7/16	29/32	1
11/16	.559	13/32	27/32	2 1/8	3 3/4	1/2	31/32	1
13/16	.651	17/32	31/32	2 5/8	4	5/8	1 3/16	1 1/4
15/16	.776	1 1/32	1 3/16	2 3/4	4 1/2	1 1/16	1 13/32	1 1/4
1	.82	2 1/32	1 1/2	3 1/4	5 3/16	1 3/16	1 7/16	1 1/2
1 1/8	.943	2 1/32	1 5/8	3 3/8	5 9/16	7/8	1 11/16	1 1/2
1 1/4	1.084	2 29/32	2	3 5/16	6 7/16	1	1 15/16	1 3/2
1 1/2	1.21	2 29/32	2	4 3/8	7 1/4	1 1/8	2 1/16	2
1 3/4	1.46	1 1/32	2 3/8	5 1/8	8 5/8	1 3/8	2 5/8	2 1/4
2 1/4	1.66	1 1/32	2 5/8	5 3/8	9 1/4	1 1/2	3 1/16	2 3/4

## Sherman Heavy Duty Soldering Lugs

N.E.L.A. Standard



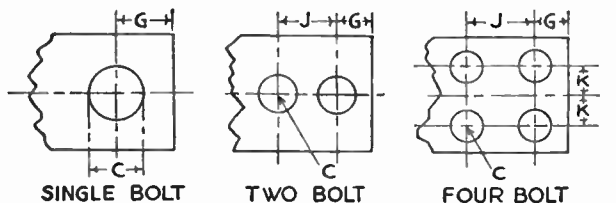
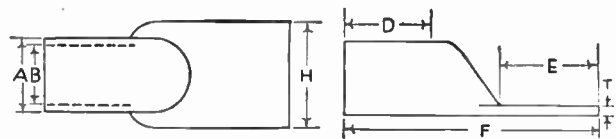
2-Bolt Tongue

These lugs are made of best quality seamless copper tubing.

Lugs Nos. 8, 8-A, 9-A, 10 and 11 have a sufficient socket diameter to take rope core

cables of sizes listed without removing core. Core can be drilled out and space filled with copper plug or solder.

Blank lugs furnished when specified; otherwise regular bolt holes as listed. Special drilling may be had if specified. Straight lugs regularly furnished. Angle lugs 45 and 90-degree when specified at extra price. Plain finish unless otherwise specified. Special finishes as follows at added prices: Rosin dipped, cadmium plated, tinned inside only and tinned all over. Special dimensions may be made to order with dimension E other than regular or special drilling of stud holes, at added cost.



Max. Size Conductor Inches	Amp. Rate N.E.C.	Single Bolt		2-Bolt		4-Bolt	
		Lug No.	Wt., Lbs. per 1000	Lug No.	Wt., Lbs. per 1000	Lug No.	Wt., Lbs. per 1000
19/22	35	1	8	1A	12	.....	.....
6, B. & S.	50	2	18	2A	25	.....	.....
2	90	3	80	3A	105	.....	.....
00	150	4	155	4A	210	.....	.....
250000	250	5	275	5A	330	.....	.....
350000	300	6	540	6A	650	.....	.....
500000	400	.....	.....	7	1350	.....	.....
750000	525	.....	.....	8	2000	8A	2000
1000000	650	.....	.....	9	3200	9A	2800
1500000	850	.....	.....	.....	.....	10	5000
2000000	1050	.....	.....	.....	.....	11	8300

### Single Bolt Tongue

Lug No.	APPROXIMATE DIMENSIONS, INCHES										
	A	B	H	D	T	E	F	G	J	K	C
1	.25	.187	.39	.375	.06	.50	1	3/16			7/32
2	.313	.232	.47	.50	.08	.75	1 1/2	3/8			7/32
3	.540	.375	.74	.75	.17	.87	2	3/8			9/32
4	.675	.494	.97	1.00	.19	1.25	2 3/4	1/2			13/32
5	.840	.625	1.22	1.25	.22	1.50	3 3/4	3/4			17/32
6	1.050	.822	1.50	1.69	.23	2.25	4 3/4	1			17/32

### Two-Bolt Tongue

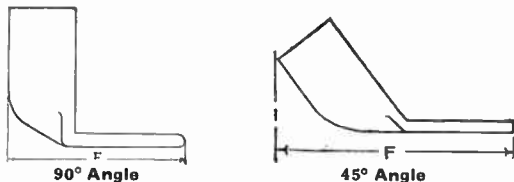
1-A	.25	.187	.39	.375	.06	1.00	1 1/2	3/16	1/2		7/32
2-A	.313	.232	.47	.50	.08	1.25	2	1/4	5/8		7/32
3-A	.540	.375	.74	.75	.17	1.50	2 5/8	3/8	5/8		9/32
4-A	.675	.494	.97	1.00	.19	2.25	3 3/4	1/2	1		13/32
5-A	.840	.625	1.22	1.25	.22	2.25	4	1/2	1		13/32
6-A	1.050	.822	1.50	1.69	.23	3.25	5 3/4	3/4	1 1/2		17/32
7	1.315	.951	1.87	2.00	.37	3.25	6 1/4	3/4	1 1/2		17/32
8	1.66	1.272	2.41	2.56	.39	3.25	6 7/8	3/4	1 1/2		17/32
9	1.90	1.49	2.74	3.00	.41	4.25	8 7/8	1	2		17/32

### Four-Bolt Tongue

8-A	1.66	1.272	2.41	2.56	.39	3.25	6 7/8	3/4	1 1/4	5/8	13/32
9-A	1.90	1.49	2.74	3.00	.41	3.25	7 7/8	3/4	1 1/2	3/4	13/32
10	2.37	1.93	3.50	3.87	.44	4.25	10	1	2	1	17/32
11	2.87	2.315	4.25	4.37	.56	4.25	11	1	2	1	17/32

NOTE.—Dimensions E in larger sizes will be found slightly larger than specified to allow for bending in the field.

## Sherman Soldering Lugs



Dimensions and specifications the same as for regular side formed lugs, except dimension F as shown below.

Size In.	DIMEN. F, IN.		Size In.	DIMEN. F, IN.		Size In.	DIMEN. F, IN.	
	90°	45°		90°	45°		90°	45°
3/16	11/16	13/16	9/16	19/16	115/16	11/16	31/4	43/8
1/4	13/16	17/8	5/8	111/16	23/16	17/8	31/2	43/4
5/16	15/16	19/16	11/16	17/8	27/16	15/16	315/16	53/16
3/8	17/8	17/16	13/16	21/8	27/8	17/16	41/16	511/16
7/16	17/32	19/16	15/16	25/8	35/8	13/4	5	613/16
1/2	19/8	13/4	1	213/16	33/4	21/16	513/16	715/16

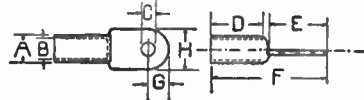
## Sherman Drawn Copper Connectors



The connector consists of two seamless terminals, so constructed that when bolted together both halves are in perfect alignment, and no part projects beyond the circumference of the tubular portion, so that a piece of flexible conduit or fibre sleeve may be slipped over the entire connection for insulation.

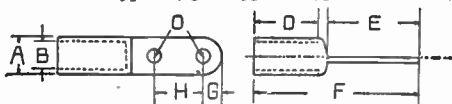
While two pieces are required to make one complete connector, they are described and listed by single pieces. Connectors are not shipped assembled, as they cannot be applied in that way.

On account of its small size, only the 1/4-inch connector is made wider than tubular part.



Maximum Stranded Wire B & S Gauge

Size (A) In.	Wire B & S Gauge	APPROXIMATE DIMENSIONS, INCHES							Approx. Wt., Lbs. per 1000
		B	C	D	E	F	G	H	
1/4	8	.186	11/32	3/8	13/32	1 1/32	3/7	3/8	9



These sizes have two stud holes. Two bolts and nuts are required for each complete connector, consisting of two pieces.

Size (A) In.	Wire B & S Gauge	APPROXIMATE DIMENSIONS, INCHES							Approx. Wt., Lbs. per 1000
		B	C	D	E	F	G	H	
3/8	4	.285	11/32	9/16	23/32	15/8	7/32	3/8	25
1/2	0	.398	13/32	3/4	1 1/4	2 3/16	3/2	5/8	52
5/8	000	.511	1 1/4	13/16	1 1/2	2 1/2	3/8	7/8	85
13/16	250000 CM	.651	1 1/4	1 1/4	2 1/8	3 5/8	1/2	1 1/8	228
15/16	400000 CM	.776	1 1/2	1 1/2	2 5/8	4	1/2	1 1/4	250
1	450000 CM	.82	1 1/2	1 1/2	2 7/8	4 3/8	1/2	1 1/4	310
1 1/16	500000 CM	.88	1 3/4	1 3/4	2 9/8	4 1/2	5/8	1 1/4	325
1 1/8	800000 CM	1.084	2	2	2 1/2	5	5/8	1 3/8	350
1 1/4	1500000 CM	1.46	2 3/8	2 3/8	3 3/8	6 3/8	3/4	1 3/4	625
2 1/16	2000000 CM	1.66	2 5/8	2 5/8	3 3/8	6 3/4	3/4	1 3/4	1350

Bolts and nuts will not be furnished unless specified. Can be furnished plain or coppered.

### Nuts and Bolts

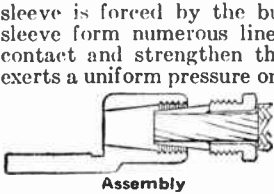
Size Connector Inches	Size Bolts Inches	No. in Standard Package	Approx. Wt., Lbs. per 1000
1/4, 3/8, 1/2	5/8 x 1/4	1000	7
5/8, 13/16	1 1/4 x 3/8	500	17
15/16	5/8 x 5/8	200	32
1	5/8 x 3/4	200	33
1 1/16	3/8 x 3/4	200	57
1 1/8	1 1/2 x 15/16	100	113
1 1/4	1 1/2 x 1 1/8	50	134
2 1/16	5/8 x 1 7/8	50	248

**T & B Tite-Bind Solderless Connectors**

T & B Tite-Bind Connectors and Lugs are designed to give the best electrical contact and mechanical connection, utilizing a principle unique in this field.



The bore of the body has a slight (3°) taper into which the tapered sleeve is forced by the bushed nut. Corrugations in the sleeve form numerous line contacts, increase the area of contact and strengthen the mechanical grip. The sleeve exerts a uniform pressure on the cable throughout its length.



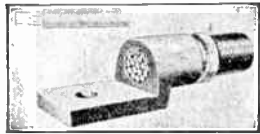
If the insulation is cut the length of the sleeve and nut, when the nut is made up, the cable travels with the sleeve into the connector body and the insulation will remain tight against the nut.

As the sleeve travels into the body the slight tapers exert a great pressure on the cable. This maximum pressure produces the minimum electrical resistance and the maximum mechanical grip.

The open end of the lug offers visual evidence that the cable is of proper size and in place.

Once made up tight, the sleeve stays wedged in place and exerts the same pressure on cable even with nut removed.

**Solderless Lugs**

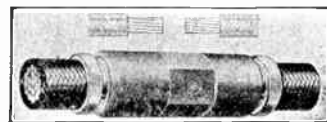


Tite-Bind Solderless Lugs are for connecting wire, cable, or tubing to terminals on equipment, to bus bars, etc.

Front-connected lug as illustrated, with either one or two bolt holes is standard, with standard tongue dimensions and drillings. For special tongue dimensions and drillings, add 20 per cent to list price.

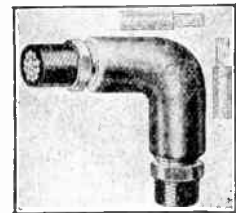
Center-formed lugs, angle lugs, round-tongue lugs, and other varieties will be furnished at an increase in price.

**2-Way Connectors**



Used for splicing the ends of conductors of the same size.

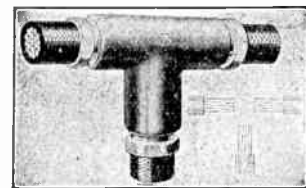
Reducers for splicing the ends of two conductors of different sizes can also be furnished.



**Elbow Connectors**

Elbow connectors are used for splicing two conductors at right angles and are useful where short bends must be made in heavy conductors.

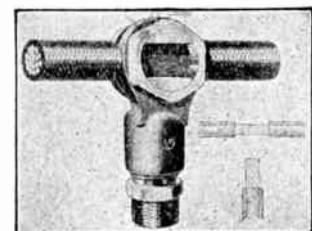
Reducing elbows and elbows of other angles are also furnished.



**3-Way Connectors**

The 3-way connectors are used to splice three conductors of the same size or of different sizes.

The T or right angle type is illustrated. The Y type is also regularly furnished.



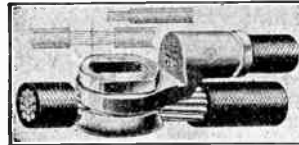
**Cable Taps**

**Tee Taps**

Tite-Bind Cable Taps utilize the same connection principle as Tite-Bind Lugs for the branch conductor. The connection to the main conductor is made with a U-bolt and seat shaped to fit the conductor and clamped to it without splicing.

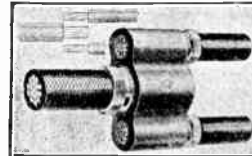
They are used to tap a main conductor at right angles, and are regularly furnished for all combinations of main and branch conductor sizes.

**T & B Tite-Bind Solderless Connectors**  
**Parallel Gutter Taps**



Tite-Bind Parallel Taps are similar in design to the cable taps, except that the main and branch conductor connections are parallel.

Used to tap a main conductor where space is limited, as in panel board gutters, etc. Regularly furnished for all combinations of main and branch conductor sizes.



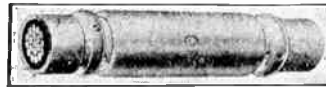
**Connecting Blocks**

The 3-way connecting block is illustrated, but connecting blocks are furnished for any number of conductors and any combination of sizes.

**Additional Designs**

Only a few of the more popular types of connectors are illustrated. Other types are designed for all types of transmission line, high tension and special installations. There are connectors designed to hold in excess of the cable strength. For example, a T & B 2-Way Connector of special construction has been approved for use with Type HH cable, the connector developing the full cable strength.

T & B Solderless Connectors or related material will be specially designed to meet any special requirements.



All T & B Solderless Connectors can be furnished with parts rounded for high tension installation, as illustrated.

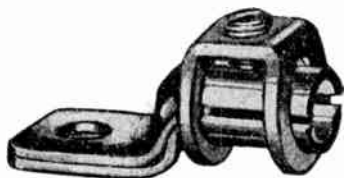
Size Conductor A.W.G.	Standard Lugs 1 Bolt Hole Each	2 Bolt Holes Each	2-Way and Elbows Each	3-Way T or Y Type Each	Cable Taps Each	Parallel Gutter Taps Each
14	\$ .20	\$ .30	.....	.....	.....	.....
12	.20	.30	.....	.....	.....	.....
10	.20	.30	\$ .40	\$ .60	\$ .60	\$ .60
8	.20	.30	.40	.60	.60	.60
6	.25	.35	.40	.60	.60	.60
4	.25	.35	.40	.60	.70	.60
2	.35	.45	.50	.75	.75	.70
1	.35	.45	.50	.75	.85	.70
0	.45	.55	.60	.90	.90	.70
00	.55	.65	.75	1.10	1.00	.70
000	.75	.85	.90	1.35	1.20	.80
0000	.75	.85	1.10	1.65	1.20	1.00
C. M.						
250000	.95	1.05	1.30	1.95	1.50	1.10
300000	.95	1.05	1.50	2.25	1.50	1.25
350000	1.20	1.40	1.75	2.60	2.10	1.40
400000	1.20	1.40	2.00	3.00	2.10	1.45
450000	1.45	1.65	2.30	3.45	2.60	1.85
500000	1.45	1.65	2.60	3.90	2.60	2.10
550000	1.80	2.00	3.00	4.50	3.40	2.30
600000	1.80	2.00	3.25	4.85	3.40	2.50
650000	1.80	2.00	3.50	5.25	4.00	2.50
700000	2.50	2.50	3.75	5.60	4.00	2.80
750000	2.50	2.50	4.00	6.00	4.80	2.95
800000	2.50	2.50	4.25	6.35	4.80	3.25
850000	2.90	3.20	4.50	7.10	6.00	3.25
900000	2.90	3.20	4.75	7.10	6.00	3.70
950000	2.90	3.20	5.00	7.50	6.60	3.80
1000000	2.90	3.20	5.00	7.50	6.60	3.80
1100000	4.10	4.10	6.00	9.00	8.10	.....
1200000	4.10	4.10	6.00	9.00	8.10	.....
1400000	5.50	5.50	7.00	10.50	10.00	.....
1500000	5.50	5.50	7.00	10.50	10.00	.....
1600000	6.40	6.40	8.00	12.00	11.60	.....
1700000	6.40	6.40	8.00	12.00	11.60	.....
1800000	6.40	6.40	9.00	13.50	13.50	.....
1900000	7.40	7.40	9.00	13.50	13.50	.....
2000000	7.40	7.40	9.00	13.50	13.50	.....

When ordering, give size and type of conductor being used. Connectors will be furnished for stranded cable unless otherwise specified.

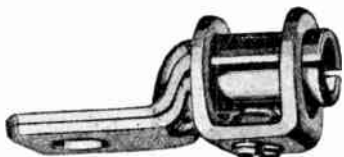
Reducers, reducing elbows, and 3-way connectors, cable taps, and parallel taps to take different sizes of cables are regularly furnished. Prices on these items, listings of other items, and dimensional data furnished on request.



## Reliable Solderless Lugs



Solderless Lug



Showing Clamp Reversed So That Screw Is Accessible From the Opposite Side

Used for connecting electrical conductors to terminals of electrical equipment.

Only one piece to handle, conveniently and quickly installed with only a screwdriver or wrench. Will not vibrate loose.

Clamp of high strength bronze, lug of electrolytic copper, 98 per cent conductivity.

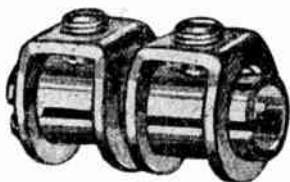
High pressure contact makes permanent low resistance connection. Cross section of lug at any point has full conductivity of cable. Runs cooler than well soldered joint, cooler even than the cable itself.

Eliminates hazard, uncertainty, inconvenience and lost time of soldered connections.

### Straight Lugs, One Hole

No.	Each	Size	Wt. Lbs. per Carton	No. In Carton
6S1	\$.20	6 Stranded	3/4	24
4S1	.24	4 Stranded	1	24
2S1	.28	2 Stranded	1 1/2	24
0S1	.40	1/0 Stranded	1 1/2	12
00S1	.50	2/0 Stranded	1 3/4	12
000S1	.60	3/0 Stranded	2	12
0000S1	.80	4/0 Stranded	2 3/4	12
250S1	1.00	250,000 C M	1 3/4	6
300S1	1.20	300,000 C M	2 1/4	6
350S1	1.40	350,000 C M	2 3/4	6
400S1	1.60	400,000 C M	3	6
450S1	1.80	450,000 C M	3 1/2	6
500S1	2.00	500,000 C M	4 1/4	6

## Reliable Solderless Two Way Connectors



Tube of electrolytic copper, 98 per cent conductivity. Clamps of high strength bronze.

Used to splice two conductors of the same size end to end. Easily installed, will not vibrate loose, and makes permanent high pressure, low resistance connection.

No.	Each	Size	Wt. Lbs. per Carton	No. In Carton
6x6	\$.28	6 Stranded	3/4	24
4x4	.34	4 Stranded	1	24
2x2	.38	2 Stranded	1 3/4	24
0x0	.56	1/0 Stranded	1 1/2	12
00x00	.70	2/0 Stranded	1 3/4	12
000x000	.90	3/0 Stranded	2 1/4	12
0000x0000	1.10	4/0 Stranded	3	12
250x250	1.30	250,000 C M	1 3/4	6
300x300	1.70	300,000 C M	2 1/2	6
350x350	1.90	350,000 C M	2 3/4	6
400x400	2.20	400,000 C M	3	6
450x450	2.50	450,000 C M	4	6
500x500	2.70	500,000 C M	4 3/4	6

## Reliable Solderless Connectors

For use wherever two wires, not under tension, must be connected. Hardware bronze connectors are recommended as they are free from season cracking.

The nut is reversible and a pilot aids in starting it.

Edges are rounded to prevent wire nicks and glove cuts.

Head shape and material make for a strong, re-usable connector.

The efficient thread fit, bearing surface and contact design insure a high compression joint.

Packed in small cartons with quantity, catalogue number and wire size clearly marked on the ends of the carton.

### Large Fillet Head Solderless Connectors

#### Hardware Bronze—85% Copper

Cat. No.	Per 100	A.W.G.		Shipping Wt. Lbs. Per 100	Std. Pkg.
		Solid	Stranded		
165C	\$24.00	6	8	6	100
206C	30.00	4	5	7 1/2	100
260C	40.00	2	3	10	100
292C	51.00	1	2	14	100
373C	65.00	2/0	1/0	21	50
418C	80.00	3/0	2/0	34	25
528C	160.00	4/0	4/0	64	25
679C	300.00	350,000	C.M.	84	5
813C	400.00	500,000	C.M.	105	5



#### Brass

165B	\$18.00	6	8	6	100
206B	24.00	4	5	7 1/2	100
260B	30.00	2	3	10	100
292B	35.00	1	2	14	100
373B	48.00	2/0	1/0	21	50
418B	68.00	3/0	2/0	34	25
528B	140.00	4/0	4/0	64	25

### Standard Chamfered Head Solderless Connectors

#### Hardware Bronze—85% Copper

Cat. No.	Per 100	A.W.G.		Shipping Wt. Lbs. Per 100	Std. Pkg.
		Solid	Stranded		
165SC	\$23.00	6	8	5 1/2	100
206SC	29.00	4	5	7	100
260SC	33.00	2	3	9	100
292SC	41.00	1	2	13	100
373SC	60.00	2/0	1/0	20	50
418C	80.00	3/0	2/0	34	25
528C	160.00	4/0	4/0	64	25
679C	300.00	350,000	C.M.	84	5
813C	400.00	500,000	C.M.	105	5



#### Brass

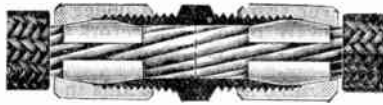
165SB	\$16.00	6	8	5 1/2	100
206SB	22.00	4	5	7	100
260SB	27.00	2	3	9	100
292SB	30.00	1	2	13	100
373SB	45.00	2/0	1/0	20	50
418B	68.00	3/0	2/0	34	25
528B	140.00	4/0	4/0	64	25

### Telephone Bridging Solderless Connectors

Cat. No.	Per 100	Maximum Size and Kind of Wire	Shipping Wt. Lbs. Per 100	Std. Pkg.
104	\$15.00	No. 10 AWG Copper to Copper...	2	100
104W	16.00	Same with Washer.	2	100
109	19.00	No. 12 BWG Iron to Iron.....	2	100
109W	20.00	No. 12 BWG Iron to Copper.....	2	100



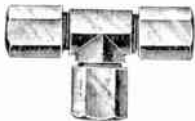
Dossert Solderless Connectors



Type A, 2-Way



Type C, 2-Way



3-Way Joint



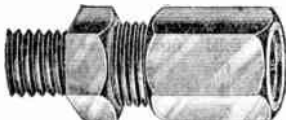
Elbow



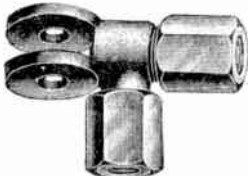
Y-Joint



Type F Stud Connector



Type M Stud Connector



Style R Cable Anchor



Style S Cable Anchor



Style E Cable Anchor

Dossert Connectors eliminate the use of solder in making electrical connections. They are approved for use without solder on all classes of wiring on both solid and stranded conductors.

The Dossert joint has greater mechanical strength than a soldered joint and an electrical conductance in excess of the cable.

2-Way Connectors

Size of Conductor	Each
14-4*	\$ .40
3-2-1*	.50
0*	.60
00*	.75
000*	.90
0000*	1.10
250,000 CM	1.30
300,000 CM	1.50
350,000 CM	1.75
400,000 CM	2.00
450,000 CM	2.30
500,000 CM	2.60
550,000 CM	3.00
600,000 CM	3.25
650,000 CM	3.50
700,000 CM	3.75
750,000 CM	4.00
800,000 CM	4.25
850,000 CM	4.50
900,000 CM	4.75
950,000 CM	5.00
1,000,000 CM	5.00
1,250,000 CM	6.00
1,300,000 CM	6.50
1,400,000 CM	7.00
1,500,000 CM	7.00
1,750,000 CM	8.00
2,000,000 CM	9.00
2,500,000 CM	12.50
3,000,000 CM	16.00

\*Specify if for solid or stranded on sizes 14 to 0000.

Reducers take the maximum 2-way list.

The 3-ways and Y's add 50 per cent to 2-way list.

The 3-ways, Y's reducers take maximum cable size price.

Elbows take same price as 2-ways. See list above.

List prices of Styles F and M Stud Connectors are the same as a 2-way of corresponding size less 20 per cent, except when special large diameter or length of stud end is specified.

List prices of Style S Cable Anchor are the same as for 2-way connectors of corresponding sizes.

List prices of Styles R and E Cable Anchors are the same as for regular 3-way connectors of corresponding size.

Dossert Solderless Lugs



Front Lug



Angle Lug



Swivel Lug



Back Lug

Size of Conductor	1-Hole Each	2-Hole Each	4-Hole Each
14-8	\$ .20	\$ .30	.....
6-4	.25	.35	.....
2-1	.35	.45	.....
0	.45	.55	.....
00	.55	.65	.....
000	.75	.85	.....
250-300 MCM	.95	1.05	.....
350-400 MCM	1.20	1.40	.....
450-500 MCM	1.45	1.65	\$2.15
550-600-650 MCM	1.80	2.00	2.50
700-750-800 MCM	2.50	2.50	2.90
850-900-1000 MCM	2.90	3.20	3.50
1100-1200-1250 MCM	4.10	4.10	4.20
1300-1400-1500 MCM	5.50	5.50	5.60
1700-1750-1800 MCM	6.40	6.40	6.50
1900-2000 MCM	7.20	7.20	7.50
2500-3000	Special quotation.		

Center plate 45° and 90° lugs 20 per cent advance on list. Round plates or back-connected lugs 20 per cent advance on list.

Add 20 per cent for special bolt drilling.

List prices of swivel lugs are same as for two front-connected lugs of corresponding size as given above.

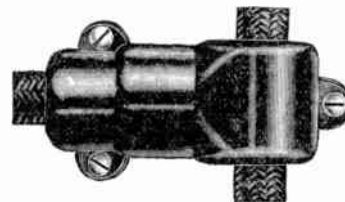
Dossert Insulating Covers

2-Way Covers



No. 4, No. 6 and Smaller Sizes	each	\$ .20
No. 1, No. 2, No. 3	each	.26
No. 00, No. 0	each	.46
250,000 CM, No. 0000, No. 000	each	.60
300,000 CM	each	.80
500,000 CM, 450,000 CM, 400,000 CM, 350,000 CM	each	1.00

Tap Covers



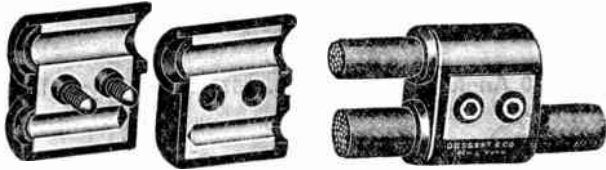
No. 1 Main and Branch	each	\$ .60
No. 00 Main and Branch	each	.80
No. 0000 Main and Branch	each	1.00
250,000 CM Main, No. 1 Branch	each	1.10
300,000 CM Main and Branch	each	1.30
500,000 CM Main, No. 00 Branch	each	1.70
500,000 CM Main and Branch	each	2.00

## Dossert Cable Taps—Hook or Bolt Type

Size Main 6 and Smaller	SIZE TAP, A.W.G.								SIZE TAP, MCM							
	6-10 Each	4 Each	2 Each	1 Each	0 Each	00 Each	000 Each	0000 Each	250 300 Each	350 400 Each	450 500 Each	550 to 650 Each	700 750 Each	800 Each	850 900 Each	1000 Each
4-2	.65	\$.70	\$.75													
1, 0, 00	.70	.75	.80	\$.85	\$.90	\$1.00										
000	.80	.80	.85	.90	.95	1.05	\$1.20									
0000	.90	.90	.95	1.00	1.30	1.40	1.55	\$1.65								
M.C.M.																
250-300	.90	.90	1.00	1.10	1.10	1.20	1.35	1.35	\$1.50							
350-400	1.20	1.20	1.30	1.40	1.40	1.50	1.65	1.65	1.90	\$2.10						
450-500	1.50	1.50	1.60	1.70	1.70	1.80	1.95	1.95	2.10	2.30	\$2.60					
550-600-650	1.90	1.90	1.90	1.90	1.90	2.00	2.15	2.15	2.30	2.50	3.00	\$3.40				
700-750	2.20	2.20	2.20	2.20	2.20	2.30	2.45	2.45	2.60	2.80	3.20	3.60	\$4.00			
800	2.50	2.50	2.50	2.50	2.50	2.60	2.75	2.75	2.90	3.10	3.50	3.90	4.30	\$4.80		
850-900	3.00	3.00	3.00	3.00	3.00	3.10	3.25	3.25	3.50	3.75	4.20	4.60	5.50	5.50	\$6.00	\$6.60
950-1000	3.00	3.00	3.00	3.00	3.00	3.10	3.25	3.25	3.50	3.75	4.20	4.60	5.50	5.50	6.00	6.60
1200	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.60	5.80	6.00	6.30	6.70	6.70	7.80	7.80
1250-1300	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.60	5.80	6.00	6.30	6.70	6.70	7.80	7.80
1400-1500	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.15	7.35	7.55	7.85	8.25	8.25	8.70	8.70
1600-1800	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.15	8.35	8.55	8.85	9.25	9.25	9.70	9.70
1900-2000	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.35	9.55	9.75	10.00	10.45	10.45	10.90	10.90

Prices on larger sizes upon application.

### Dossert Insulated Parallel Gutter Taps

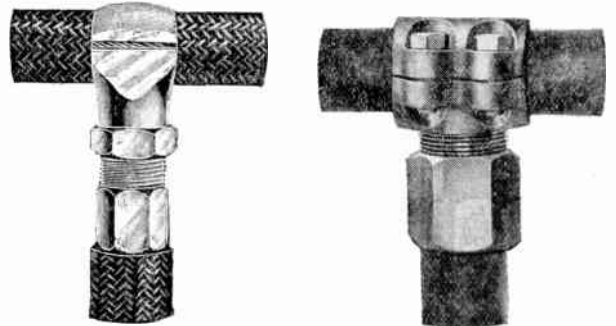


Consists of two parts only. Is insulated with fabric bakelite. It has two countersunk hardened screws of the wrench type. The screws are held in place by washers to prevent falling out.

This molded insulated unit saves time required for taping or putting on loose covers with screws in the narrow gutter of a panel. It is especially adapted for making taps on live cables.

Size Main	SIZE BRANCH					
	6 or 4 Each	3, 2, 1 Each	0 Each	00 Each	000 Each	0000 Each
0	\$1.40	\$1.40	\$1.40			
00	1.40	1.40	1.40	\$1.40		
000	1.50	1.50	1.60	1.60	\$1.60	
0000	1.60	1.60	1.70	1.70	1.75	\$1.80
250,000CM	1.65	1.70	1.70	1.75	1.95	1.95
300,000CM	1.80	1.80	1.80	1.80	2.00	2.00
350,000CM	2.00	2.00	2.00	2.00	2.10	2.10
400,000CM	2.05	2.05	2.05	2.05	2.15	2.15
450,000CM	2.30	2.30	2.30	2.30	2.40	2.40
500,000CM	2.40	2.40	2.40	2.40	2.55	2.55

### Dossert Cable Taps



Hook Type

Bolt Type

The cable tap is used to connect a branch wire, rod, or bleeder to a main wire, rod, or feeder. It does not splice the main but simply clamps onto it.

The Hook Type consists of hook, cover, jam nut, compression nut, and compression sleeve. The upper parts of cover and hook are machined to fit the main wire, while the lower end or shank is threaded, drilled, and tapered to form a nipple of a regular 2-way connector.

The Bolt Type is in the form of a split tee clamp tightened by four strong bolts. The branch connection is held by a Dossert compression sleeve and nut. The tap is made without cutting the main conductor.

### Type W Dossert Parallel Gutter Taps

Size Main	SIZE TAP, A.W.G.						SIZE TAP, MCM									
	8, 6, or 4 Each	2 Each	1 or 0 Each	00 Each	000 Each	0000 Each	250 Each	300 Each	350 Each	400 Each	450 Each	500 Each	550 Each	600 Each	650 Each	700 Each
8, 6, or 4	\$.60															
2	.60	\$.70														
1 or 0	.70	.70	\$.70													
00	.70	.70	.70	\$.70												
000	.70	.70	.80	.80	\$.80											
0000	.80	.80	.90	.95	.95	\$1.00										
C.M.																
250,000	.85	.85	.90	.90	1.05	1.05	\$1.10									
300,000	1.00	1.00	1.00	1.00	1.10	1.10	1.25	\$1.25								
350,000	1.10	1.10	1.10	1.10	1.20	1.20	1.40	1.40	\$1.40							
400,000	1.15	1.15	1.15	1.15	1.25	1.25	1.40	1.40	1.45	\$1.45						
450,000	1.40	1.40	1.40	1.40	1.50	1.50	1.70	1.70	1.80	1.85	\$1.85					
500,000	1.50	1.50	1.50	1.50	1.65	1.65	1.80	1.80	1.95	2.10	\$2.10					
550,000	1.75	1.75	1.75	1.75	1.85	1.85	2.00	2.00	2.10	2.10	2.30	\$2.30				
600,000	1.85	1.85	1.85	1.85	1.85	1.85	2.10	2.10	2.10	2.10	2.40	2.40	\$2.50			
650,000	1.85	1.85	1.85	1.85	1.85	1.85	2.10	2.10	2.10	2.10	2.40	2.40	2.50	\$2.50		
700,000	2.00	2.00	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.20	2.40	2.40	2.70	2.75	\$2.80	
750,000	2.00	2.00	2.00	2.00	2.15	2.15	2.30	2.30	2.40	2.40	2.80	2.80	2.85	2.85	2.85	2.95
800,000	2.20	2.20	2.20	2.20	2.30	2.30	2.40	2.40	2.50	2.50	2.90	2.90	3.10	3.10	3.10	3.10
850,000	2.20	2.20	2.20	2.20	2.30	2.30	2.40	2.40	2.50	2.50	2.90	2.90	3.10	3.10	3.10	3.10
900,000	2.40	2.40	2.40	2.40	2.40	2.40	2.60	2.60	2.70	2.70	3.00	3.00	3.10	3.10	3.10	3.40
1,000,000	2.60	2.60	2.60	2.60	2.60	2.60	2.85	2.85	2.90	2.90	3.15	3.15	3.45	3.45	3.45	3.45

Made in all sizes up to 2,500,000 CM. Prices upon application.

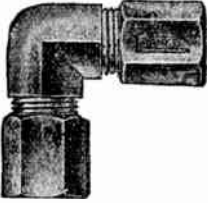




**Frankel Solderless Connectors**



No. 2560 2-Way Connector



No. 2562 Elbow



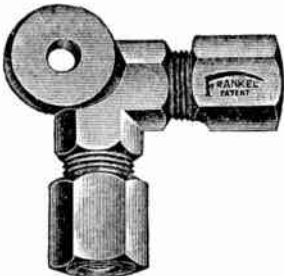
No. 2561 3-Way Connector



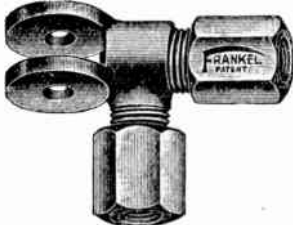
No. 2559 Y Connector



No. 2587 Cable Anchor



No. 2589 Cable Anchor



No. 2588 Cable Anchor



No. 2563 Plug Stud Connector



No. 2564 Stud Connector

**No. 2560 2-Way Connector**

To connect two wires of the same size.

**No. 2586 2-Way Reducer**

To connect wires of different sizes.

**No. 2562 Elbow**

To splice two cables, wires, rods, or tubes that meet at right angles. Conductors may be same or different size.

**No. 2561 3-Way Connector**

To splice a main cable or two different size cables and make tap at point of splice.

**No. 2559 Y Connector**

A 3-way splice to connect any combination of 3 wires.

**No. 2587 Cable Anchor**

To splice and anchor end of cable to strain insulator.

**No. 2589 Cable Anchor**

To splice and anchor two cables at right angles.

**No. 2588 Cable Anchor**

To anchor one cable and to take a branch wire off the anchored cable.

**No. 2563 Plug Stud Connector**

To connect wire or cable to a threaded stud or rod.

**No. 2564 Stud Connector**

To connect wire or cable to block terminals by screwing stud end of connector into a threaded hole, or to strap terminals by inserting stud end through a hole in strap and clamping by a nut on end of stud.

Size Wire or Cable	Nos. 2560 2586, 2562 and 2587 Each		Nos. 2561 2559, 2589 and 2588 Each	
	16 to 4*	\$.40	\$.60	
2 to 1*	.50	.75		
0*	.60	.90		
00*	.75	1.13		
000*	.90	1.35		
0000*	1.10	1.65		
250,000CM	1.30	1.95		
300,000CM	1.50	2.25		
350,000CM	1.75	2.63		
400,000CM	2.00	3.00		
500,000CM	2.60	3.90		
600,000CM	3.25	4.88		
700,000CM	3.75	5.63		
750,000CM	4.00	6.00		
800,000CM	4.25	6.38		
1,000,000CM	5.00	7.50		
1,250,000CM	6.00	9.00		
1,300,000CM	6.50	9.75		
1,500,000CM	7.00	10.50		
1,750,000CM	8.00	12.00		
2,000,000CM	9.00	13.50		

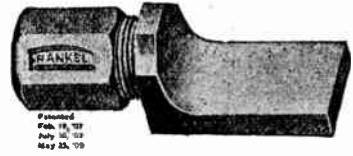
\*Specify solid or stranded.

Where the wires joined are of different sizes, use list price of largest size.

If plug or stud connector is no larger in diam. than diam. of wire, use 2-way price less 20%. If larger, refer to 2-way prices, take 1/2 wire price plus 1/2 wire price next larger than plug or stud, less 20%.

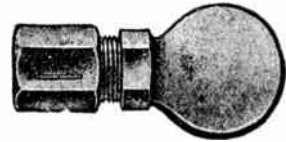
**Frankel Solderless Lugs**

**No. 2568 Front Lug**



Connects cable to bus bars or plate.

**No. 2569 Back Lug**

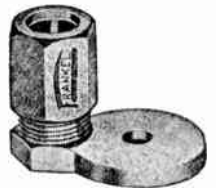


Connects cable to stud.

**No. 2570 Angle Lug**

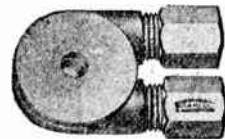


**No. 2572 Right Angle Lug**



Connects cable to stud. Made with rectangular plates for cable to bus.

**No. 2574 Swivel Lug**



An adjustable angle connector to splice two or three cables of the same or different sizes.

Wire and Cable Size	No. *2568, FRONT LUG			No. 2569 No. 2570 No. 2572 No. 2574 Each
	For 1-Hole Each	For 2-Hole Each	For 4-Hole Each	
16 to 8	\$.20	\$.30	.....	\$ .24
6 to 4	.25	.35	.....	.30
2 to 1	.35	.45	.....	.42
0	.45	.45	.....	.54
00	.55	.65	.....	.66
000-0000	.75	.85	.....	.90
CM				
250,000-300,000	.95	1.05	.....	1.14
350,000-400,000	1.20	1.40	.....	1.44
500,000	1.45	1.65	\$2.15	1.74
600,000	1.80	2.00	2.50	2.16
700,000-800,000	2.50	2.50	2.90	3.00
900,000-1,000,000	2.90	3.20	3.20	3.48
1,250,000-1,300,000	4.10	4.10	4.20	4.92
1,500,000	5.50	5.50	5.60	6.60
1,750,000	6.40	6.40	6.40	7.68
2,000,000	7.40	7.40	7.40	8.88

\*When drilling is not specified, undrilled lugs with plate sizes for one hole will be furnished. For special drillings, add 20 per cent.

## Frankel Solderless Cable Taps

**No. 2575 Hook Cable Tap**



To tap current from a continuous run of feeder cable.

Main and branch may be any combination of sizes. Also rod to rod, tube to tube, and rod or tube to cable.



**No. 2602 Bolted Cable Tap**



A heavy duty tap with Everdur Bolts.

To tap a current from a continuous run of feeder cable.

May be any combination of wire, cables, rod, or tube.

Size of Branch Wire or Cable	SIZE MAIN CABLE, A.W.G.				SIZE MAIN CABLE, MCM											
	6 & Smaller Each	4-2 Each	1-0 Each	000 Each	250 Each	350 Each	450 Each	550 Each	650 Each	750 Each	900 Each	1250 Each	1400 Each	1600 Each	1800 Each	
6 and Smaller	\$ .60	\$ .65	\$ .70	\$ .80	\$ .90	\$ 1.20	\$ 1.50	\$ 1.90	\$ 2.20	\$ 2.50	\$ 3.00	\$ 5.45	\$ 7.00	\$ 8.00	\$ 9.20	
4		.70	.75	.80	.90	1.20	1.50	1.90	2.20	2.50	3.00	5.45	7.00	8.00	9.20	
2		.75	.80	.85	1.00	1.30	1.60	1.90	2.20	2.50	3.00	5.45	7.00	8.00	9.20	
1			.85	.90	1.10	1.40	1.70	1.90	2.20	2.50	3.00	5.45	7.00	8.00	9.20	
0			.90	.95	1.10	1.40	1.70	1.90	2.20	2.50	3.00	5.45	7.00	8.00	9.20	
00			1.00	1.05	1.20	1.50	1.80	2.00	2.30	2.60	3.10	5.45	7.00	8.00	9.20	
000-0000				1.20	1.35	1.65	1.95	2.15	2.45	2.75	3.25	5.45	7.00	8.00	9.20	
CM																
250,000-300,000					1.50	1.90	2.10	2.30	2.60	2.90	3.50	5.60	7.15	8.15	9.35	
350,000-400,000						2.10	2.30	2.50	2.80	3.10	3.75	5.80	7.35	8.35	9.55	
500,000							2.60	3.00	3.20	3.50	4.20	6.00	7.55	8.55	9.75	
600,000								3.40	3.60	3.90	4.60	6.30	7.85	8.85	10.00	
650,000-700,000									4.00	4.30	5.50	6.70	8.25	9.25	10.45	
750,000-800,000										4.80	5.50	6.70	8.25	9.25	10.45	
850,000-900,000											6.00	7.60	8.70	9.70	10.90	
1,000,000											6.60	7.60	8.70	9.70	10.90	
1,250,000-1,300,000												8.10	9.45	10.20	11.40	
1,400,000-1,500,000													10.00	11.00	12.35	
1,600,000-1,750,000														11.60	12.80	
1,900,000-2,000,000															13.50	

**No. 2601 Parallel Panel Gutter Tap**



A simple parallel tap to branch from a continuous feeder to a tap.

Small enough to easily fit in the gutter of a distribution panel.

May easily be taped or covered with a bakelite cover.

**No. 2603 Insulating Cover for Panel Gutter Tap**



Two heavy bakelite halves which closely fit over panel gutter tap and the insulation of the wires. Is held in place with a heavy cadmium-plated steel spring.

Size of Branch Wire or Cable	SIZE MAIN CABLE, A.W.G.				SIZE MAIN CABLE, MCM											
	2 & Smaller Each	1-0 Each	000 Each	0000 Each	250 Each	300 Each	350 Each	400 Each	500 Each	600 Each	700 Each	750 Each	800 Each	900 Each	1000 Each	
3 and Smaller	\$ .60	\$ .70	\$ .70	\$ .80	\$ .85	\$ 1.00	\$ 1.10	\$ 1.15	\$ 1.50	\$ 1.85	\$ 2.00	\$ 2.00	\$ 2.20	\$ 2.40	\$ 2.60	
2	.70	.70	.70	.80	.85	1.00	1.10	1.15	1.50	1.85	2.00	2.00	2.20	2.40	2.60	
1		.70	.70	.80	.90	1.00	1.10	1.15	1.50	1.85	2.00	2.00	2.20	2.40	2.60	
0		.70	.80	.90	.90	1.00	1.10	1.15	1.50	1.85	2.00	2.00	2.20	2.40	2.60	
00		.70	.80	.95	.95	1.00	1.10	1.15	1.50	1.85	2.00	2.00	2.20	2.40	2.60	
000			.80	.95	1.05	1.10	1.20	1.25	1.65	1.85	2.00	2.15	2.30	2.40	2.60	
0000				1.00	1.05	1.10	1.20	1.25	1.65	1.85	2.00	2.15	2.30	2.40	2.60	
CM																
250,000-300,000					1.10	1.25	1.40	1.40	1.80	2.10	2.20	2.30	2.40	2.60	2.85	
350,000-400,000							1.40	1.45	1.95	2.10	2.40	2.40	2.50	2.70	2.90	
450,000-500,000									2.10	2.40	2.70	2.80	2.90	3.00	3.15	
600,000-650,000										2.50	2.75	2.85	3.10	3.10	3.45	
700,000-750,000											2.80	2.95	3.10	3.40	3.45	
800,000-850,000													3.25	3.70	3.80	
900,000-1,000,000														3.70	3.80	

**Ideal Universal Wire Connectors**  
Solderless—Tapeless



Ideal Connectors replace, at a big saving, solder and tape, plug connections, terminal blocks, binding posts, etc. They are intended for all roughing-in joints, fixture hanging, connections in appliances, fixtures, tools, signs, radios, etc.

Approved by Underwriters' and Factory Mutual Laboratories. Recommended by National Electrical Code.

Making a joint with an Ideal Connector is just like screwing a nut on a bolt. The connector simply screws on giving a positive and permanent contact. Spiral metal insert (copper coated), which acts as a current carrying sleeve, presses threads into the wires and binds them together in a vise-like grip—assuring a doubly secure joint.

**No. 72 Fixture-Appliance Universal Type**

A small connector for fixture wiring, joints in shallow canopies and appliances. Particularly adapted for Nos. 18 or 20 wires, either solid or stranded.

No.	Description	Per 100	Per 1000
72	For 2 No. 20 to 3 No. 18 Solid or Stranded Wire	\$2.45	\$20.00

**No. 74 Standard Universal Type**

Fits all common wiring joints.

No.	Description	Per 100	Per 1000
74	For 1 No. 14 Solid and 1 No. 18 Stranded to 4 No. 14 or 2 No. 12 Wires, Solid or Stranded	\$3.85	\$35.00

**No. 76 Large Universal Type**

For use in the industrial field and where larger gauge wires are used, or where a large number of small wires are to be joined in a junction box.

No.	Description	Per 100	Per 1000
76	For 4 No. 14 to 3 No. 10 Solid or Stranded Wire	\$4.35	\$39.35

**Bryant Solderless Wire Connectors**



No. 767

No. 768

No. 769  
Showing Coil Spring Insert

Moulded composition with spiral coiled wire insert.

No. 767 is for making connections to fixtures. No. 768 is for combinations of Nos. 12, 14, 16 and 18 wires to a maximum of two No. 12, or four No. 14. No. 769 is large size, for connecting wires up to three No. 10.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
767	\$2.50	Up to 3 No. 18 Wires	100	1000	5
768	4.50	Up to 4 No. 14 Wires	100	1000	19
769	5.10	Up to 3 No. 10 Wires	100	1000	33

**Bryant Templus Flat Cord Connectors**

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

These devices do not have standard prong spacings.

Have 1/2-inch cord hole.



No. 2956



No. 2958

**No. 2956 Receptacle Portion**

For use with No. 2958 only.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2956	\$31.82	10	100	5

**No. 2958 Plug Portion**

For use with No. 2956 only.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2958	\$31.82	10	100	5

**Universal Test Clips and Insulators**



No. 24 Clip Only



No. 45 Clip with No. 47 Insulator

Test clips save time in electrical work requiring quick temporary connections. May be used over and over again.

Rubber insulators are a convenient protection against electric shock and prevent clips from shorting on each other. Furnished half red and half black to indicate polarity.

Packed 10 to a box and 10 boxes to a carton.

**Screw Connection**

No.	Description	Spread of Jaws In.	Wt., Lbs. per 100	Each
45	5-Amp. Pee Wee Clip Only, Cadmium.	7/16	1 1/2	\$.05
47	Rubber Insulator for No. 45 Clip	1 3/4		.06 1/2
48-B	10-Amp. Clip Only, Cadmium Plated	9/16	2	.05
49	Rubber Insulator for No. 48-B Clip		4	.10
27	10-Amp. Clip Only, Cadmium Plated	9/16	3	.12 1/2
29	Rubber Insulator for No. 27 Clip		5	.10
24-A	25-Amp. Clip Only, Lead Plated	1	5	.10
24	25-Amp. Clip Only, Solid Copper	1	5 1/2	.20
26	Rubber Insulator for No. 24 or 24-A Clip		9	.20
21-A	50-Amp. Clip Only, Lead Coated	1 1/4	15	.20
<b>Lug Connection</b>				
21	50-Amp. Clip Only, Solid Copper	1 1/4	19	\$.60
23	Rubber Insulator for No. 21 or 21-A Clip		11	.33
11-A	100-Amp. Clip Only, Lead Coated	1 1/4	33	.50
11	100-Amp. Clip Only, Solid Copper	1 1/4	36	.85
13	Rubber Insulator for No. 11 or 11-A Clip		27	.58
33	200-Amp. Clip Only, Solid Copper	2	57	1.35
35	Rubber Insulator for No. 33 Clip		30	.70

**Reliable Testing Clips**

For temporary connections to insulated wires. Made of heavy nickel silver with hard sharp insulation puncturing points and perfectly registering teeth.



No. 1

Fitted with screw, nut and washer for attaching to instrument cord.

No. 1.....each \$30

No. 2

Same as No. 1 but with screw, nut and washer omitted. Preferred where connection to cord is to be soldered.

No. 2.....each \$30

No. 3

Same as No. 1 but without the spike.

No. 3.....each \$30

No. 5



A light, sturdy clip with a strong spring. Convenient for temporary connections in radio, telephone and signal work.

Particularly good for congested telephone equipment.

Plenty of room for soldering flat cord terminals.

No. 5.....each \$24



## Fahnestock Binding Posts

### No. 3



Will take No. 10 B. & S. Wire. Length over all,  $1\frac{1}{16}$  inches. Width,  $\frac{3}{8}$  inch. Screw hole for No. 8 screw.

Price, No. 3, Brass.....each \$.05  
 Price, No. 3, Bronze.....each .06  
 Price, No. 3, Nickeled Brass.....each .05  
 Price, No. 3, Nickeled Bronze.....each .06

### No. 5

Will take No. 10 B. & S. Wire. Has projecting lug to which can be soldered a wire. Length over all, not including soldering lug,  $1\frac{1}{16}$  inches. Width,  $\frac{3}{8}$  inch. Screw hole for No. 8 screw.

Price, No. 5, Brass.....each \$.07  
 Price, No. 5, Bronze.....each .08  
 Price, No. 5, Nickeled Brass.....each .07  
 Price, No. 5, Nickeled Bronze.....each .08



### No. 9



Will take No. 10 B. & S. Wire. Length over all,  $2\frac{1}{16}$  inches. Width,  $\frac{3}{8}$  inch. Screw hole for No. 8 screw.

Price, No. 9, Brass.....each \$.08  
 Price, No. 9, Bronze.....each .10  
 Price, No. 9, Nickeled Brass.....each .08  
 Price, No. 9, Nickeled Bronze.....each .10

### No. 24

Will take No. 10 B. & S. Wire. Length over all,  $1\frac{1}{16}$  inches. Width,  $\frac{3}{8}$  inch. Made with either  $\frac{1}{4}$  or  $\frac{5}{16}$ -inch screw hole.

Price, No. 24, Brass.....each \$.08  
 Price, No. 24, Bronze.....each .10  
 Price, No. 24, Nickeled Brass.....each .08  
 Price, No. 24, Nickeled Bronze.....each .10



## Fahnestock Test Connectors

### No. 30



Made of special copper bronze spring metal. Two large clips riveted together. Both snap over the line. Made for different size wire. Used for test poles or for party line work. Length over all,  $1\frac{1}{16}$  inches. Width,  $\frac{5}{8}$  inch. In ordering, state kind and size of wires to be connected.

Price, No. 30, Bronze.....each \$.15

### No. 31

One large and one small clip riveted together. Large clip snaps over the line wire. The small clip does not snap over, and will take up to and including No. 10 B. & S. Used for attaching drop or jumper wires to line on junction poles or party lines. Length over all,  $1\frac{1}{16}$  inches. Width,  $\frac{5}{8}$  inch.

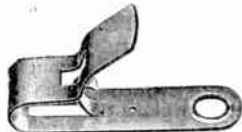
In ordering, state kind and size of wires to be connected.  
 Price, No. 31, Bronze.....each \$.10



### No. 33

Temporary connector for emergency work and test sets.

Will snap over a No. 8 B. W. G. Wire.  
 Price, No. 33, Bronze.....each \$.15



### No. 34

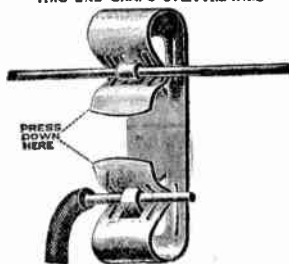
THIS END SNAPS OVER THE WIRE

One end snaps over the line. Made in only one size. Snaps over a No. 12 B. W. G. Wire.

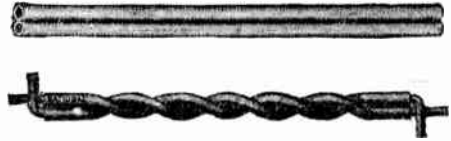
Other end does not snap over wire but will take any size wire up to No. 9 B. W. G.

Length over all,  $2\frac{3}{4}$  inches. Width,  $\frac{5}{8}$  inch.

Price, No. 34, Bronze.....each \$.10



## National Double Tube Connectors



These sleeves are manufactured accurately to size from the best grade of pure copper. Each detail of operation has been carefully planned, and a rigid factory inspection weeds out any possible defective material.

When twisted, National Sleeves are drawn so tightly around the conductors as to form practically a welded joint.

Thus the danger of corrosion, due to air and moisture, is entirely eliminated; and instead of building up a high resistance, as is true of the average hand splice, a joint of this type has a ratio of conductivity with the conductor of better than two to one.

## National Double Tube Copper Sleeves for Stranded Cable

Cat. No.	Gauge No.	Diam. Wire Inches	Length Inches	Wt., Lbs. per 1000
200	0000 B&S	.530	20	1570
201	000 B&S	.470	20	1400
202	00 B&S	.420	18	1025
203	0 B&S	.375	16	675
204	1 B&S	.330	14	550
205	2 B&S	.291	12	350
206	3 B&S	.261	$9\frac{1}{2}$	250
207	4 B&S	.231	$8\frac{3}{4}$	190

## National Double Tube Copper Sleeves for Solid Wire

210	0000 B&S	.460	20	1400
211	000 B&S	.410	18	1025
212	00 B&S	.365	16	675
213	0 B&S	.325	14	550
214	1 B&S	.289	12	350
215	2 B&S	.258	$9\frac{1}{2}$	250
216	3 B&S	.229	$8\frac{3}{4}$	190
217	4 B&S	.204	6	130
218	4 B&S	.204	8	160
219	5 B&S	.182	6	115
220	6 B&S	.162	6	100
221	7 B&S	.144	$5\frac{3}{4}$	85
222	8 B&S	.128	$5\frac{1}{2}$	60
223	8 BWG	.165	6	100
224	9 B&S	.114	$5\frac{1}{4}$	50
225	9 BWG	.148	$5\frac{3}{4}$	85
226	10 B&S	.102	$4\frac{3}{4}$	30
227	10 BWG	.134	$5\frac{1}{2}$	60
228	11 BWG	.120	$5\frac{1}{4}$	50
229	12 B&S	.081	$4\frac{1}{2}$	23
230	12 BWG	.109	$4\frac{3}{4}$	35
231	12 NBS	.104	$4\frac{3}{4}$	30
232	14 B&S	.064	4	20
233	14 BWG	.083	$4\frac{1}{2}$	23
234	14 NBS	.080	$4\frac{1}{2}$	23
235	16 B&S	.051	4	18
236	16 BWG	.065	4	20
237	17 B&S	.045	4	15
238	18 B&S	.040	4	14

## National Double Tube Tinned Copper Sleeves

240	8 BWG	.165	$6\frac{3}{4}$	110
241	9 BWG	.148	$5\frac{3}{4}$	90
242	10 BWG	.134	$5\frac{1}{2}$	65
243	12 BWG	.109	$4\frac{3}{4}$	40
244	14 BWG	.083	$4\frac{1}{2}$	30
245	16 BWG	.065	4	25

## National Double Tube Tinned Steel Sleeves

250	8 BWG	.165	$6\frac{3}{4}$	90
251	9 BWG	.148	$5\frac{3}{4}$	60
252	10 BWG	.134	$5\frac{1}{2}$	55
253	12 BWG	.109	$4\frac{3}{4}$	35
254	14 BWG	.083	$4\frac{1}{2}$	30
255	16 BWG	.065	4	25

**National Seamless Single Tube Copper Sleeves**



Made accurately to size from high grade electrolytic copper and furnished in a temper that permits of easy twisting. A large stock is maintained at all times and orders will be filled promptly.

**For Solid Copper Wires**

Cat. No.	Wire Size B. & S. Gauge	Decimal Equivalent	Length Sleeve Inches	Weight Pounds per 100
450	6	.162	6	10
451	5	.182	6 <sup>3</sup> / <sub>4</sub>	13 <sup>3</sup> / <sub>4</sub>
452	4	.204	7 <sup>1</sup> / <sub>2</sub>	16
453	3	.229	8 <sup>1</sup> / <sub>2</sub>	19
454	2	.259	9 <sup>3</sup> / <sub>4</sub>	25
455	1	.289	11	33 <sup>1</sup> / <sub>2</sub>
456	0	.325	12 <sup>1</sup> / <sub>2</sub>	55
457	00	.365	14	67 <sup>1</sup> / <sub>2</sub>
458	0000	.410	16	102
459	00000	.460	18	140

**For Standard Stranded Copper Cables**

Cat. No.	Cable Size B. & S. Gauge	Decimal Equivalent	Length Sleeve Inches	Weight Pounds per 100
460	4	.231	8 <sup>1</sup> / <sub>2</sub>	19
461	3	.260	9 <sup>3</sup> / <sub>4</sub>	25
462	2	.292	11	33 <sup>1</sup> / <sub>2</sub>
463	1	.328	12 <sup>1</sup> / <sub>2</sub>	55
464	0	.368	14	67 <sup>1</sup> / <sub>2</sub>
465	00	.414	16	102
466	000	.465	18	140
467	0000	.522	19 <sup>1</sup> / <sub>2</sub>	151
468	250,000 C M	.575	21	180
469	300,000 C M	.621	21 <sup>3</sup> / <sub>4</sub>	220
470	500,000 C M	.853	24	320

Prices upon application.

**National Tinned Copper Cable Sleeves For Straight Splices**



It is not desirable to splice large gauge telephone cable, pilot wires, signal wires and station control cable by hand as the joint would be too bulky. This sleeve makes a neat, compact and mechanically correct joint.

Cat. No.	Size A.W.G.	Diameter Wire Inches	Length Inches	Weight Pounds per 100
259	9	.114	1 <sup>1</sup> / <sub>2</sub>	5
260	10	.102	1 <sup>1</sup> / <sub>2</sub>	5
260A	12	.080	1 <sup>1</sup> / <sub>2</sub>	4
161	13	.072	1 <sup>1</sup> / <sub>2</sub>	4
262	14	.064	1 <sup>1</sup> / <sub>2</sub>	4
262A	15	.058	1 <sup>1</sup> / <sub>2</sub>	3
263	16	.051	1 <sup>1</sup> / <sub>2</sub>	3

Prices upon application.

**National Tinned Copper Sleeves**

**For Galvanized Ground Wire**



Can be furnished in plain copper for Copperweld.

Cat. No.	Size Inches	Length Inches	Weight Pounds per 100
474	1/4	12	50
475	3/32	14	60
476	5/16	16	90
477	3/8	20	120
478	7/16	24	190
479	1/2	26	210

**Diamond Bridle Rings**

**Galvanized and Enameled**



For pole line and interior block distribution.

Furnished either Diamond galvanized by the hot process or enameled. All enameled rings, unless otherwise specified, are furnished in dark blue.

Style	Eye Inches	Opening Inches	Shank Inches	Steel Inches	WEIGHT POUNDS PER 1000	
					Galvanized	Enameled
A	1 <sup>5</sup> / <sub>8</sub>	5/16	1 <sup>1</sup> / <sub>4</sub>	1/4	115	150
C	1 <sup>1</sup> / <sub>4</sub>	5/16	1 <sup>1</sup> / <sub>4</sub>	1/4	95	125
E	5/8	5/16	7/8	3/16	35	50
F	3	5/16	1 <sup>7</sup> / <sub>8</sub>	3/16	300	335

Prices upon application.

**Diamond Drive Rings**



Designed to accomplish the same purpose as the screw bridle ring; can be used in stucco exterior walls and plaster interior walls over wood, where it is difficult to secure a wood screw bridle ring. Quickly attached with an ordinary nail hammer. Made of hard nail wire Diamond galvanized by the hot process.

Diameter of Eye..... inches	1/2	1 1/4
Per 1000.....	\$11.00	25.00
Wire Gauge No.....	11	9
Length..... inches	2	3

**Diamond Angle Screws**

**Diamond Intergalvanized**

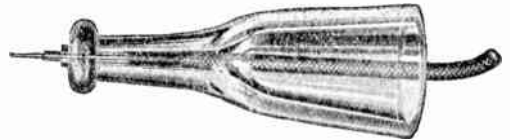
For attaching knobs for drop wiring on wood or stone structures.



Size..... inches	5/16	3/8
*Per 100.....	\$5.50	9.00
Diameter Wire..... inches	3/16	3/8
Lgth. Screw End..... inches	2 1/4	2
Length Shank..... inches	2 1/4	3 1/2
Weight per 100..... pounds	12	20

\*Price does not include insulators.

**Diamond Bridle Wire Insulators**

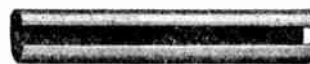


For insuring a dry connection between a bare wire and an insulated wire tapped therefrom. Where a dry connection is necessary to prevent leakage over and around the insulation the wire insulator is used. The braid and rubber portion is stripped from the bare wire which is passed through the messenger-proof cup and soldered to prevent messenger following the bare wire into the protected glass petticoat.

It is used on loading coils in telephone construction and for lead-in wires on telegraph strands.

Price.....per 100 \$100.00

**Type D National Tinned Copper Cable Sleeves**



Length, 1 1/2 inches.

Cat. No.....	265	266	267	268
A. W. G. No.....	10	13	14	16
Diameter Wire..... inches	.102	.072	.064	.051
Weight per 1000..... pounds	7 1/2	6	6	5

## Diamond Combination Cable Clamps



### With Detachable Bridle Rings

Provides an economical and quickly applied fastening for attaching lead covered cables and parallel runs of bridle wire to walls built of any material.

### Without Bridle Rings or Screw Anchors

No.	Per 100	Diam. Cable	Size CLAMP, IN. Diam. Conduit or Pipe	Diam. Wood Screw and Length	Size of Screw Anchor	Wt., Lbs. per 100
0A	\$5.00	9/16	1/4	14x1 1/4"	10-14x1"	3 1/2
0	5.20	11/16	3/8	14x1 1/4"	10-14x1"	4
1	6.45	13/16	1/2	14x1 1/4"	10-14x1"	4 1/2
2A	9.30	1	3/4	14x1 1/4"	10-14x1"	7
2	9.70	1 3/16	...	14x1 1/4"	10-14x1"	7 1/2
3A	14.00	1 3/8	1	14x1 3/4"	10-14x1 1/2"	14 1/2
3	15.00	1 9/16	1 1/4	14x1 3/4"	10-14x1 1/2"	15 1/2
4A	16.90	1 7/8	1 1/2	14x1 3/4"	10-14x1 1/2"	18 1/2
4	18.75	2 3/16	2	14x1 3/4"	10-14x1 1/2"	20
5	19.75	2 5/8	2 1/2	14x1 3/4"	10-14x1 1/2"	24

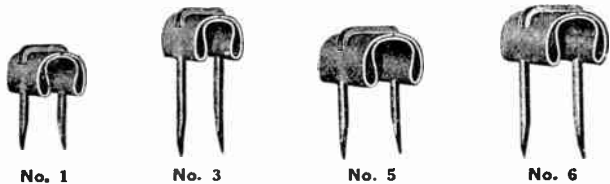
### Small Sizes without Bridle Ring Attachment

No.	Cable Size or O.D. of Conduit In.	Per 100	Conduit or Pipe Size Normal I.D., In.	Diam. Wood Screw and Length	Size of Screw Anchor	Wt., Lbs. per 100
O-G	3/16	\$1.40	..	8x1"	6-8x3/4"	1.0
O-G	1/4	1.87	..	8x1"	6-8x3/4"	1.0
O-G	5/16	1.87	..	8x1"	6-8x3/4"	1.0
5-0	3/8	1.87	..	8x1"	6-8x3/4"	1.0
4-0	7/16	2.13	1/8	8x1"	6-8x3/4"	1.1
3-0	1/2	2.25	..	8x1"	6-8x3/4"	1.2
2-0	5/8	2.37	..	8x1"	6-8x3/4"	1.3

### Rings

One size of ring fits all sizes of clamps.  
Diameter of eye, 1 inch. Per 100..... \$2.75

## Blake Insulated Staples



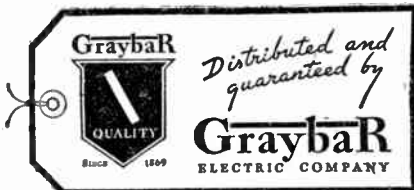
Illustrations Are Actual Size

Blake Insulated Staples are packed in various ways to meet the demands of electricians, dealers, radio stores, etc. No. C-40 staples are furnished in white, buff, green, maroon and brown.

No. R-100 packed 100 in a box; No. D-50 packed 50 in a box; No. C-40 packed 40 in a box.

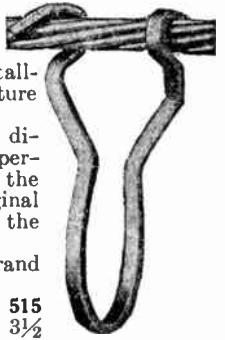
Display carton of 1000 staples (25 boxes of 40) is supplied either with staples in solid colors or with assortment consisting of 5 boxes of each color.

Size No.	per Carton of 1000			APPROX. SHIP. Wt. Lbs.	
	No. R-100	No. D-50	No. C-40 (Colored)	Case of 10000	Case of 25000
1	\$2.80	\$3.10	....	16	41
2	....	....	\$3.30	..	..
3	2.80	3.10	....	21	51
5	2.80	....	3.30	23	55
6	3.00	....	....	25	60
7	3.00	....	....	27	67



## National Cable Rings

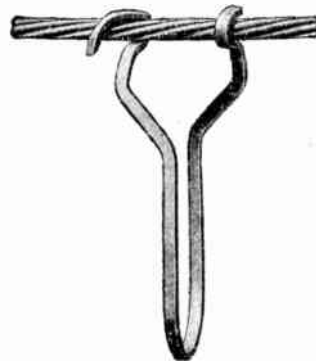
National Rings are easily and quickly placed on the strand and once in position are rigidly immovable. The ease with which these rings can be installed is an important factor. Another feature is the ample space for re-clipping.



Cable can be pulled in from either direction, and neither the strain of this operation, nor the swaying of the cable by the wind, can move the ring from its original position, for the greater the strain, the tighter the grip.

Hot dip galvanized; made in all strand sizes. No. 511 is light; No. 512 heavy.  
No. .... 510 511 512 513 514 515  
Size ... inches 1 1/2 2 2 2 1/2 3 3 1/2  
Wt. per 1000 lbs. 50 57 80 98 123 132  
Prices upon application.

## National Extra Long Cable Rings



For placing a second cable on an existing messenger.

When this cable ring is used, service interruption and expense in time, labor and materials is eliminated.

Made in all strand sizes; specify size desired.

Cat. No.	Size In.	Lgth. In.	Wt., Lbs. per 1000
520	1 1/2	4 3/4	110
521	2	5 1/4	155
522	2 1/2	6 3/4	200
523	3	7 1/2	230
524	3 1/2	8	250

## National Marline Cable Hangers

### No. 3 A. T. & T. Specifications



The hooks are made of No. 9 spring steel wire and are regalvanized by hot dip process after they are formed.

The loop is three-ply houseline in the lengths indicated.

Lgth. of Loop, In.	Size of Cable, Pair	Wt., Lbs. per 1000	Price per 1000
9	25	35	\$17.00
11	50	37	19.00
12	75	38	20.00
14	100	40	22.00
15	150	42	24.00
16	200	45	25.00

No. 6 regalvanized hooks furnished on this grade at a net advance of \$1.50 per 1000.

## Marline



Furnished in one-pound balls in both the 2 and 3-ply varieties.

Cat. No.	Grade	Price per Lb.
415	2-ply	\$.35
416	3 "	.35

## National Galvanized Cable Ring Saddles



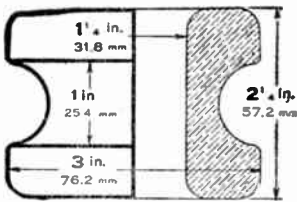
Eliminates ring cutting on lead sheath due to vibration and assures a longer life to the cable.

Cat. No.	Size .in.	Wt. lbs. per 1000
530	1 1/2	90
531	2	100
532	2 1/2	180
533	3	220
534	3 1/2	245

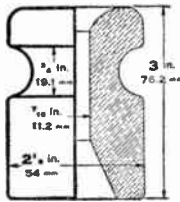


**Thomas Porcelain Insulators**

**No. 0**



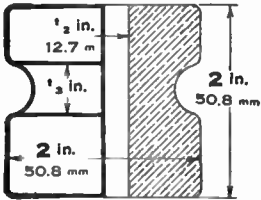
**No. 1**



Cat. No.	Per 1000	No. in Barrel	Packed Wt., Lbs. per 1000
0	\$102.70	350	1000

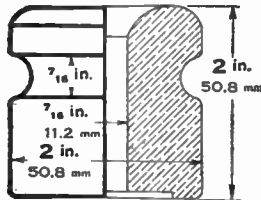
Cat. No.	Per 1000	No. in Barrel	Packed Wt., Lbs. per 1000
1	\$56.30	600	725

**No. 2**



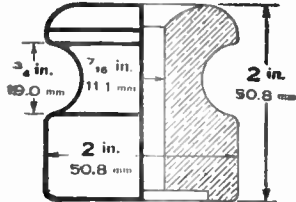
2	\$38.70	850	600
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**No. 3**



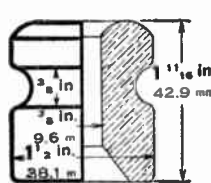
3	\$36.00	900	480
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**No. 3 1/2**



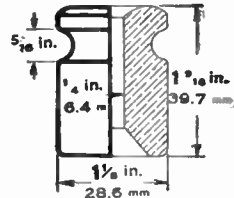
3 1/2	\$34.60	1000	480
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**No. 4**



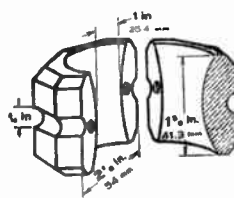
4	\$15.20	2000	230
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**No. 5 1/2**



5 1/2	\$9.60	3500	120
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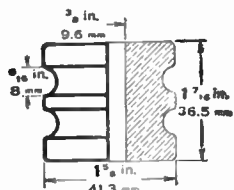
**No. 22 Split Knob**



22	\$42.30	1000	332
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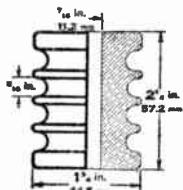
**Thomas Solid Porcelain Telephone Knobs**

**No. 6061, 2-Groove**



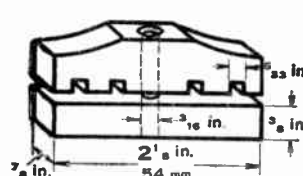
Cat. No.	Per 1000	No. in Barrel	Packed Wt., Lbs. per 1000
6061	\$26.60	2000	210

**No. 6062, 4-Groove**

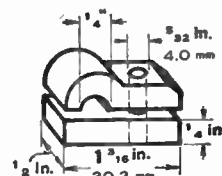


Cat. No.	Per 1000	No. in Barrel	Packed Wt., Lbs. per 1000
6062	\$39.70	1000	395

**Thomas Porcelain Telephone Cleats**



Cat. No.	Per 1000	No. in Barrel	Packed Wt., Lbs. per 1000
314	.....	3000	115
315	.....	3000	130



Cat. No.	Per 1000	No. in Barrel	Packed Wt., Lbs. per 1000
333	.....	21000	26
333 1/2	.....	22000	22

**Nail Assembled Knobs**

Consists of cap, base, 10d nail and nail head assembled. Has two grooves and will take wire sizes 12 to 14.

Cat. No.	Diam. Inches	Height Inches	Std. Pkg.	Wt., Lbs. per 1000	Price per 1000
5 1/2 Split	1 3/16	1 3/4	2800	160	\$70.00



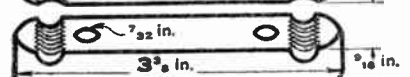
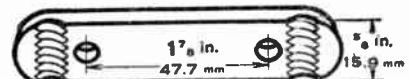
**Screw-It Split Knobs**

Consists of base, cap and 3-inch screw assembled. No. 5 1/2 Split and Detroit have 2 grooves, and take wire sizes 12 to 14. Nos. 9419 and 9420, 4 grooves, take wire sizes 8 to 10 and 4 to 6 respectively.

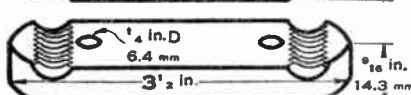
Cat. No.	Diameter Inches	Height Inches	No. in Barrel	Wt., Lbs. per 1000	Price per 1000
5 1/2 Split	1 3/16	1 3/4	3200	135	\$90.00
Detroit	1 1/4	1 3/4	2800	160	100.00
9419 Type	1 1/2	1 7/8	1500	287	150.00
9420 Type	1 13/16	2 1/8	750	600	225.00

**2 and 3-Wire Cleats**

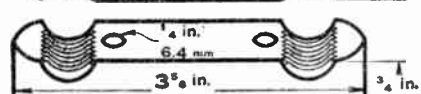
**Standard Cleats**



**No. 334**



**No. 335**



**No. 350**

Any of the sizes listed below can be furnished for either 2 or 3 wires; 2-wire cleats will always be furnished unless 3-wire are specified.

For prices on 3-wire cleats add 10 per cent to 2-wire prices, listed below.

Wire Size No.	No. in Bbl.	Unglazed			White Glazed		
		Cat. No.	Wt., Lbs. per 1000	Price per 1000	Cat. No.	Wt., Lbs. per 1000	Price per 1000
12-14	*1850	334-UG	200	\$17.60	334-G	200	\$33.10
9-10	1500	335-UG	288	21.90	335-G	288	39.10
2-6	1250	350-UG	333	27.90	350-G	333	55.00

**Mill Type Cleats**

These are exactly the same as those listed above excepting that cleats with a heavy 1-inch base are furnished.

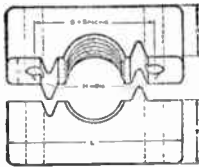
For construction in damp places or where cleats are attached to metal supports as in mills, foundries, etc.

12-14	1400	334 1/2-UG	340	\$25.80	334 1/2-G	350	\$41.30
8-10	1100	335 1/2-UG	540	30.80	335 1/2-G	540	46.90
2-6	850	350 1/2-UG	453	36.90	350 1/2-G	453	60.30

\*Can also be furnished packed in paper cartons. Each carton contains 100 cleats, and 10 cartons are packed to a case. The price for cleats packed this way is: No. 334-UG, \$20.70 per case; No. 334-G, \$36.20 per case.

## Standard B & D 1-Wire Cleats

White Glaze



### Light Cap and Light Base

Cat. No.	Wire Size	DIMENSIONS, INCHES				No. in Bbl.	Wt. per Bbl.	Price per 1000
		H	L	S	W			
110	14 to 6	1/4	1 7/8	1 1/8	7/8	2000	430	\$45.80
111	6 to 2	5/16	2 1/4	1 3/8	1	1600	465	55.50
112	2 to 0	5/16	2 5/8	1 1/2	1 1/8	1250	455	63.40
113	0 to 000	3/8	3	1 5/8	1 1/4	700	440	86.50
114	{ 000 to 200000 CM }	3/8	3 3/8	2 1/4	1 3/8	500	430	106.70

### Light Cap and Heavy Base

115	14 to 6	1/4	1 7/8	1 1/8	7/8	1600	410	\$49.00
116	6 to 2	5/16	2 1/4	1 3/8	1	1250	455	62.40
117	2 to 0	5/16	2 5/8	1 1/2	1 1/8	1000	450	69.80
118	0 to 000	3/8	3	1 5/8	1 1/4	650	450	90.80
119	{ 000 to 200000 CM }	3/8	3 3/8	2 1/4	1 3/8	450	445	114.00

### Heavy Cap and Heavy Base

120	14 to 6	1/4	1 7/8	1 1/8	7/8	1400	435	\$55.90
121	6 to 2	5/16	2 1/4	1 3/8	1	1050	420	69.40
122	2 to 0	5/16	2 5/8	1 1/2	1 1/8	800	430	75.50
123	0 to 000	3/8	3	1 5/8	1 1/4	600	445	97.00
124	{ 000 to 200000 CM }	3/8	3 3/8	2 1/4	1 3/8	400	425	121.30
125	No. 10 Duplex	3/8	3 3/8	2 1/4	1 3/8	400	435	123.60
126	{ 200000 to 500000 CM }	7/16	4 1/4	2 5/8	1 5/8	250	475	186.10
127	{ 500000 to 1000000 CM }	9/16	4 3/4	3 1/4	1 5/8	200	515	240.20
128	{ 800000 to 1250000 CM }	9/16	5 3/8	3 3/8	2	140	525	304.00
129	{ 1000000 to 2000000 CM }	9/16	6	4 3/8	2 1/4	100	505	409.50

## Thomas Light Duty 1-Wire Cleats

White Glaze

Cat. No.	Wire Size	DIMENSIONS, INCHES				No. in Bbl.	Wt. per Bbl.	Price per 1000
		H	L	S	W			
1 -Reg.	14 to 6	1/4	1 7/8	1 1/8	7/8	2800	475	\$42.00
1 1/2 -Reg.	6 to 2	5/16	2 1/4	1 3/8	1	1800	470	49.00
2 -Reg.	2 to 0	5/16	2 5/8	1 1/2	1 1/8	1500	465	55.80
2 1/2 -Reg.	0 to 000	3/8	3	1 5/8	1 1/4	950	475	77.80
3 -Reg.	{ 000 to 200000 CM }	3/8	3 1/8	2 1/4	1 3/8	800	450	86.20
1-A	14 to 6	1/4	1 7/8	1 1/8	7/8	2400	525	44.50
1 1/2-A	6 to 2	5/16	2 1/4	1 3/8	1	1400	475	53.22
2-A	2 to 0	5/16	2 5/8	1 1/2	1 1/8	1200	475	61.00
2 1/2-A	0 to 000	3/8	3	1 5/8	1 1/4	800	460	85.60
3-A	{ 000 to 200000 CM }	3/8	3 1/8	2 1/4	1 3/8	700	455	92.70
1-B	14 to 6	1/4	1 7/8	1 1/8	7/8	1800	485	47.10
1 1/2-B	6 to 2	5/16	2 1/4	1 3/8	1	1150	480	58.30
2-B	2 to 0	5/16	2 5/8	1 1/2	1 1/8	1000	480	66.80
2 1/2-B	0 to 000	3/8	3	1 5/8	1 1/4	750	485	88.60
3-B	{ 000 to 200000 CM }	3/8	3 1/8	2 1/4	1 3/8	650	480	98.40
3 1/4-B	No. 10 Duplex	3/8	3 3/8	2 1/4	1 3/8	450	405	106.50
3 1/2-B	{ 200000 to 500000 CM }	7/16	4 1/4	2 5/8	1 5/8	450	450	126.50
4-B	{ 500000 to 1000000 CM }	9/16	4 3/4	3 1/4	1 5/8	375	525	153.20
4 1/4-B	{ 800000 to 1250000 CM }	9/16	5	3 3/8	2	250	550	234.80
4 1/2-B	{ 1000000 to 2000000 CM }	9/16	5 1/2	3 3/8	2	200	525	285.80

## Porcelain Tubes



Approximate Number of Standard Tubes per Barrel and Approximate Shipping Weights per 1000

Length Under Head Inches	5/16-Inch Hole 1 1/16-Inch O.D.			3/8-Inch Hole 1 1/16-Inch O.D.			1/2-Inch Hole 1 1/16-Inch O.D.		
	Tubes per Barrel	Wt. per 1000	Price per 1000	Tubes per Barrel	Wt. per 1000	Price per 1000	Tubes per Barrel	Wt. per 1000	Price per 1000
1/2	13000	28	\$1.60	12000	28	\$2.00	.....	.....	.....
1	9500	38	1.70	8800	37	2.10	5500	56	\$2.70
1 1/2	8200	43	1.80	7500	43	2.20	4200	74	2.80
2	7000	45	1.90	6000	54	2.40	3500	86	3.00
2 1/2	5500	56	2.10	4000	76	2.70	3000	100	3.30
3	4500	63	2.30	3100	90	3.00	2500	114	3.70
4	3600	80	3.00	2300	117	4.00	2000	138	4.80
5	2900	98	3.90	1900	142	5.00	1600	169	6.00
6	2000	117	5.00	1400	200	6.00	1300	204	7.20
8	2000	140	9.00	1500	180	10.50	1000	255	13.00
10	1600	194	16.70	1000	300	18.60	900	311	21.50
12	1050	286	24.40	900	322	26.70	800	344	30.00
14	900	333	32.10	800	363	34.80	700	393	38.50
16	750	387	39.80	600	483	42.90	550	500	47.00
18	650	385	47.50	500	580	51.00	450	589	55.50
20	550	455	55.20	450	644	59.10	400	662	64.00
24	500	500	70.60	400	725	75.30	350	757	81.00

Length Under Head Inches	5/16-Inch Hole 1 1/16-Inch O.D.			3/8-Inch Hole 1 1/16-Inch O.D.			1-Inch Hole 1 1/16-Inch O.D.		
	Tubes per Barrel	Wt. per 1000	Price per 1000	Tubes per Barrel	Wt. per 1000	Price per 1000	Tubes per Barrel	Wt. per 1000	Price per 1000
1	3700	78	\$4.00	3000	93	\$6.00	.....	.....	.....
1 1/2	3000	97	4.60	2200	127	7.00	1400	193	\$11.20
2	2500	112	5.20	1700	159	8.00	1000	260	12.50
2 1/2	2200	127	5.80	1400	193	9.00	800	325	13.80
3	2000	135	6.50	1200	217	10.00	650	385	15.00
4	1750	149	8.00	1000	250	11.60	550	436	16.80
5	1450	155	9.50	900	239	13.20	500	440	18.60
6	950	226	11.00	550	373	14.80	450	489	20.40
8	680	294	14.00	450	444	18.00	400	525	24.00
10	550	364	25.00	300	667	29.00	280	750	37.50
12	500	400	34.00	250	800	39.00	220	955	50.00
14	450	444	43.00	200	900	49.20	180	1167	62.50
16	400	500	52.00	200	1000	59.40	160	1312	75.00
18	350	571	61.00	175	1100	69.60	150	1400	87.50
20	350	700	70.00	175	1200	79.80	120	1750	100.00
24	300	800	88.00	150	1334	100.00	100	2100	125.00

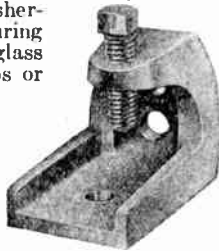
Length Under Head Inches	1 1/2-Inch Hole 2 1/16-Inch O.D.			1 1/2-Inch Hole 2 1/16-Inch O.D.			1 3/4-Inch Hole 2 1/16-Inch O.D.		
	Tubes per Barrel	Wt. per 1000	Price per 1000	Tubes per Barrel	Wt. per 1000	Price per 1000	Tubes per Barrel	Wt. per 1000	Price per 1000
2 1/2	450	578	\$19.00	325	815	\$25.50	275	982	\$34.00
3	400	650	21.00	300	883	28.00	250	1080	37.00
4	350	714	24.00	250	1020	32.00	225	1156	44.50
5	325	708	27.20	180	1306	36.00	160	1500	52.00
6	275	836	30.60	160	1407	40.50	140	1714	60.00
8	220	1000	37.60	140	1607	49.00	120	1917	75.00
10	200	1100	45.00	120	1875	58.00	100	2300	90.00
12	160	1375	70.00	100	2250	102.50	90	2556	160.00
14	120	1833	87.00	80	2812	123.50	75	3067	190.00
16	100	2200	104.00	60	3750	144.50	55	4182	220.00
18	80	2750	121.00	50	4500	166.00	45	5111	250.00
20	60	3200	138.00	45	4800	187.50	40	5300	280.00
24	60	3667	172.00	45	5000	230.00	40	5750	340.00

**Universal Insulator Supports**

Supports are malleable iron clamp fitted with cup-pointed case-hardened steel set screws (cadmium-plated, electro-galvanized or sher- ardzined) for securing porcelain and glass insulators, knobs or brackets to ex- posed steel framework in all classes of structures.



Nos. 500, 501, 502 and 503



Nos. 505 and 506

Cat. No.	Per 100	Size Inches	*STANDARD TAPPING Inches	TAPPING Threads per Inch	Std. Pkg.	Wt., Lbs. per 100
500	\$20.00	1	1/4	20	100	20
501	34.00	1 1/2	5/16	18	100	47
502	46.00	2	3/8	16	100	86
503	68.00	2 1/2	1/2	13	100	166
†505	44.00	2 1/2	Special	24	100	84
†506	56.00	2	Special	3/8	100	117

\*Tapped as specified without extra charge.

†Carried in stock untapped; specify tapping when ordering. Prices include leather washers but no machine screws.

**Brach Thermal Bi-Pass-Ors**



Every Neon sign should have a Brach Thermal Bi-Pass-Or across each section of glass. It keeps the balance of the sign operating when a glass section breaks.

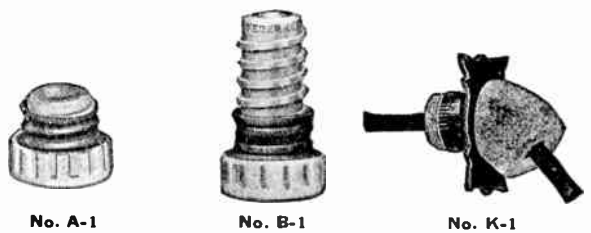
Avoids outside jumpers, costly servicing and radio interference from broken section. Reduces fire hazard due to high open circuit voltage.

Overall length, 7 inches; diameter, 2 inches.

Packed 25 to a standard package; weight, 11 pounds.

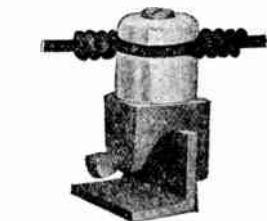
Each..... \$ .50

**Federal Porcelain Clamp Bushings**



Made of vitrified porcelain in one piece. Clamping rings are made of metal, threaded to fit threads on the porcelain. By reversing the clamp ring bushings can be used on thicker material. Bushings furnished in all colors.

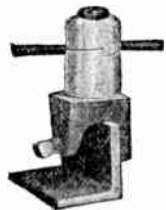
Nos. K-1 and K-2 elbow bushings are of a special shape for outdoor work, preventing water from entering around wire; also prevents damage to wire or insulation by sudden bending at the bushing.



No. 502 Support with No. 3 1/2 Insulator



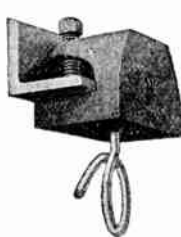
No. 502 Support Used with Clamp for Carrying Rome-X, Rubber-Covered Wires, Etc.



No. 501 Support with No. 33 Sectional Insulator



No. 500 Support with Two No. 5 1/2 Split Insulators



No. 501 Support Used with K. & M. Rings

**Machine Screws**

For Attaching Standard Insulators to Universal Supports

Diam- eter Inches	Description	Length Inches	Threads per Inch	Per 100	
				Length	Per 100
3/16	Flat Head Machine Screws.....	2 1/4	24	\$2.00	
1/4	Flat Head Machine Screws.....	2	20	2.30	
1/4	Flat Head Machine Screws.....	2 1/2	20	3.00	
5/16	Flat Head Machine Screws.....	2 1/4	18	4.30	
5/16	Flat Head Machine Screws.....	2 1/2	18	4.50	
5/16	Flat Head Machine Screws.....	2 3/4	18	4.70	
3/8	Round Head Machine Screws.....	2 1/4	16	5.50	
3/8	Round Head Machine Screws.....	2 1/2	16	6.00	
3/8	Flat Head Machine Screws.....	2 1/2	16	6.00	
3/8	Flat Head Machine Screws.....	3 1/4	16	9.80	
3/8	Machine Bolt.....	3	16	4.70	
3/8	Machine Bolt.....	3 1/2	16	4.80	
1/2	Machine Bolt.....	2	13	4.80	
1/2	Machine Bolt.....	3 1/2	13	7.50	
1/2	Machine Bolt.....	3 3/4	13	7.70	
1/2	Machine Bolt.....	4	13	7.90	

Other size machine screws can be furnished to order; prices upon application.

Cat. No.	Conduit Each	K.O. Size In.	I.D. In.	O.D. In.	Length Under Head In.	Approx. Max. Size R.C. Wire	Std. Pkg.		Shp. Wt. Lbs.
							Std. Pkg.	Shp. Wt. Lbs.	
A-1	\$6.00	+1 1/4	5/16	41/64	5/8	No. 10	500	15	
A-1 1/2	7.25	+1 1/2	5/16	13/16	9/16	No. 10	250	11	
†A-1 1/2 LS	7.25	+1 1/2	5/16	13/16	3/4	No. 10	250	16	
A-2	7.25	+1 1/2	15/32	13/16	5/8	No. 8	250	12	
A-2 LS	8.25	+1 1/2	27/64	13/16	3/4	No. 8	250	14	
A-2 1/2	7.25	+1 1/2	33/64	13/16	5/8	*No. 4	250	11	
A-3	9.60	+1 3/4	3/16	1	1 1/8	No. 3	250	22	
A-4	12.80	1	3/4	1 5/16	1 1/2	No. 00	125	18	
A-5	17.25	1 1/2	1 1/8	1 5/8	1 5/8	450000 C.M.	125	25	
A-6	31.00	2	1 5/8	2 5/16	1 1/2	1000000 C.M.	60	24	
B-1	12.00	+1 1/4	9/32	41/64	1 1/4	No. 10	250	11	
K-1	18.00	+1 1/4	9/32	41/64	1 1/16	No. 10	250	13	
K-2	22.50	+1 1/2	13/32	13/16	1 1/32	No. 8	150	15	

\*For 1/2-inch Neon sign cable. †L.S., long shank. ‡Loom.

**Scotch Electrical Tape for Neon Signs**



A black tape particularly adapted for blocking out turn-backs and spacing between letters on Neon signs.

Requires no moistening to apply; permits of faster working. Has instant adhesion to glass and the slightest pressure seals it. Will withstand all weather conditions.

The thinness of this tape makes for easier wrapping.

Rolls contain 72 yards.

Width.....inches	1/4	3/8	1/2	3/4	1	1 1/2	2
Per Roll.....	\$1.00	1.20	1.30	1.70	2.10	3.15	4.15



## Neon D-V-A-Tor Sign Fittings

New Adjustable Electrode Housings—No Danger of Puncturing Electrode

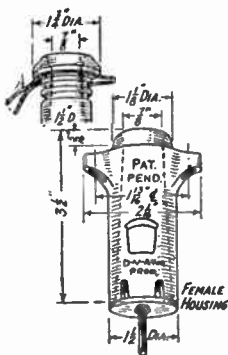
All Housings Made on Principle Shown Below—Water Cannot Come in Contact with Electrode

**No. 88**  
Large Size

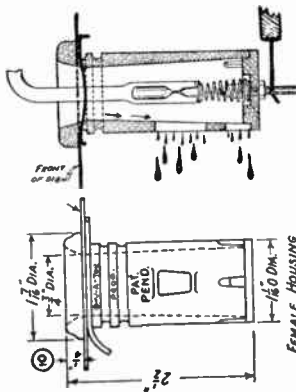


All These Housings Also Made with D-V-A-Tor Combination

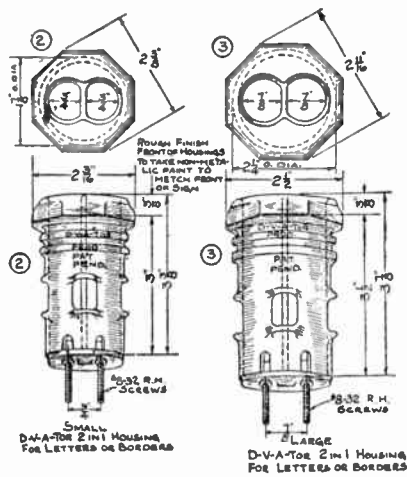
**No. 87**  
Medium Size



2 Types Front Mounting, Spring-Clamp or Screw

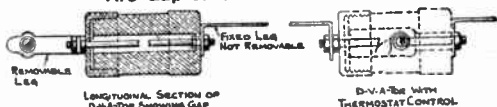


**No. 89**  
Small Size for Window Sign



**No. 93**  
Double Housings—2 in 1  
Also D-V-A-Tor Combination

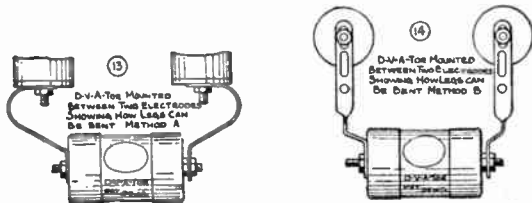
### Neon Safety Device D-V-A-Tor Arc-Gap or Thermostat Control



Nos. 90-91-92

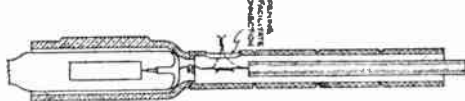
A Neon fire protector, fulfilling all requirements of the law. Reduces fire insurance rates.

### D-V-A-Tor Control



### Window Bell and Pipe for Skeleton Sign

Bell in 2 sizes. Also double housing for window border. Eliminates fire violations.



**No. 101** Assembly of D-V-A-Tor Electrode Bell and H.T. Wire Bushing

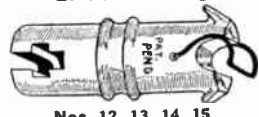


**No. 102**  
Large Bell for 15 MM. Electrode and Less



**No. 103**  
Small Bell for 12 MM. Electrode and Less

### New Cable Support Quick Mounting

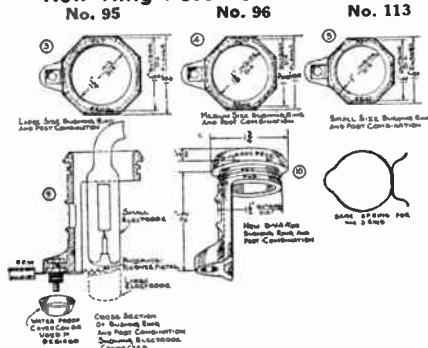


Nos. 12, 13, 14, 15

### No. 10348 Brass Connector

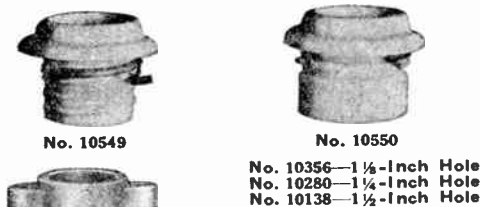


### New Ring Post Combinations

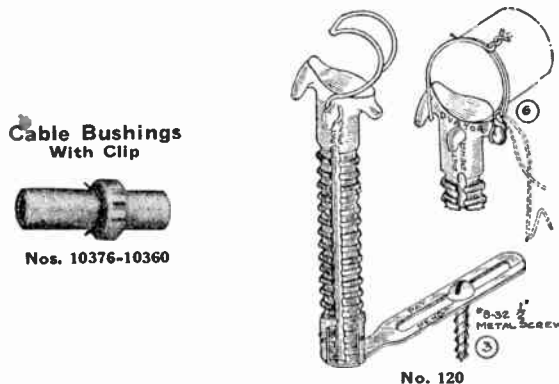


Made in 3 sizes: Large, medium and small.

### Bushings



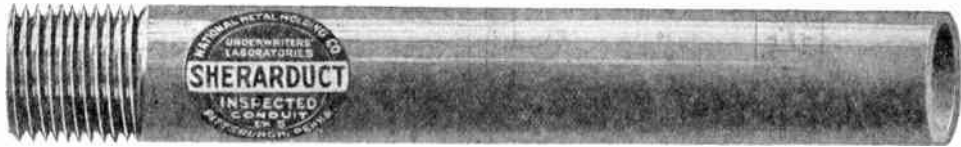
### 3-Way Tie Glass Post



### Rigid Steel Conduit

Installation of Rigid Steel Conduit in buildings is recognized as the most practicable method of protecting electric wires, and making provision for their replacement when judged advisable. The first requirement of such conduit is that it shall be permanent.

#### Sherarduct



Sherarduct Rigid Steel Conduit manufactured from spellerized steel is the impregnable wiring raceway.

Zinc-alloy and pure zinc protection obtained over the inside and outside surfaces in the sherardizing process, and elastic acid-proof enamel baked on, assure permanence under all conditions of moisture and acid corrosion.

Sherarduct elbows, nipples and couplings are manufactured

of the same high grade spellerized steel as Sherarduct conduit, and are given the same zinc and enamel protection against corrosion.

The threads on Sherarduct conduit are cut clean and sharp. The annealed steel bends, cuts, and threads easily because of annealing. Wires slide quickly on glass-like inside enamel of sherarduct.

#### Economy



Economy Rigid Steel Conduit is thoroughly coated inside and outside with elastic and acid-proof enamel, for installation under less rigorous corrosive conditions.

It is manufactured of the same high grade spellerized steel as Sherarduct Conduit, and bends easily for offsets and angles. The enamel used on Economy Conduit will not crack or chip off under the roughest handling and remains

intact when Economy is bent. Economy Elbows, nipples and couplings are given the same thorough enamel protection as Economy Conduit.

On sizes of Economy Conduit up to 2 inches inclusive, thread protectors are furnished; on all larger sizes excess enamel is carefully removed from the threads before shipment.

#### X Duct



Xduct is electro-galvanized conduit manufactured from spellerized and scale-free tubing, the inner surface raceway is coated with a highly glazed, hard, conduit enamel,

unaffected by acids and alkali, this enamel is elastic and is not affected when the conduit is bent.

#### Electroduct



Electroduct is enameled both inside and outside, manufactured from spellerized, scale-free tubing. The enamel will

bend with the conduit without cracking or flaking. Electroduct is full standard weight, threads are cut sharp and clean.

## Rigid Steel Conduit Enameled Conduit



Enameled conduit is manufactured from mild drawn steel tubing. Before enameling, the tubing is thoroughly cleaned and freed from dirt, grease, scale, silicates and burrs. This process leaves clean surface for the application of the compound.

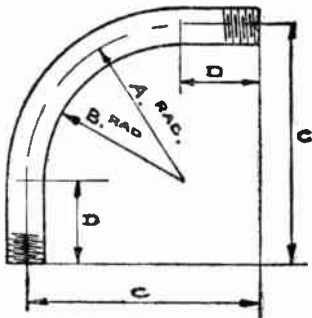
### Sherarduct



Sherarduct rigid conduit is made of full weight mild spellerized steel tube and finished under the famous sherardizing process. In this process pure zinc is alloyed with the steel tube both inside and outside to form a rustproof finish which is so entirely a part of the pipe that it cannot be knocked or chipped off.

Standard Pipe Size Inches	DIAMETER, INCHES		Threads per Inch	Weight Pounds per 100 Feet	Price per 100 Feet
Inches	Inside	Outside			
1/2	.622	.840	14	85.2	\$8.50
3/4	.824	1.050	14	113.4	11.50
1	1.049	1.315	11 1/2	168.4	17.00
1 1/4	1.380	1.660	11 1/2	228.1	23.00
1 1/2	1.610	1.900	11 1/2	273.1	27.50
2	2.067	2.375	11 1/2	367.8	37.00
2 1/2	2.469	2.875	8	581.9	58.50
3	3.068	3.500	8	761.6	76.50
3 1/2	3.548	4.000	8	920.2	92.00
4	4.026	4.500	8	1088.9	109.00
4 1/2	4.506	5.000	8	1264.2	127.00
5	5.047	5.563	8	1481.0	148.00
6	6.065	6.625	8	1918.5	192.00

## Conduit Elbows



Size Inches	ACTUAL DIAMETER INCHES		DIMENSIONS, INCHES				Weight Pounds per 100
	Inside	Outside	A	B	C	D	
1/4	.364	.540	3 3/8	3 1/2	6 3/4	3	41
3/8	.493	.675	3 3/4	3 7/16	6 3/4	3	55
1/2	.622	.840	4	3 7/16	6 3/4	2 3/4	82
3/4	.824	1.050	4 1/2	4	6 3/4	2 1/2	109
1	1.049	1.315	5 3/4	5 1/16	8 1/2	2 23/32	201
1 1/4	1.380	1.660	7 1/4	6 7/16	9 15/16	2 11/16	313
1 1/2	1.610	1.900	8 1/4	7 5/16	11 5/8	3 3/8	441
2	2.067	2.375	9 1/2	8 3/16	14 3/16	4 13/16	707
2 1/2	2.469	2.875	10 1/2	9 1/16	17	6 1/2	1411
3	3.068	3.500	11 3/4	10	17 1/4	5 1/2	1850
3 1/2	3.548	4.000	13 3/4	11 3/4	22 3/16	8 3/16	2979
4	4.026	4.500	16	13 3/4	23 3/16	7 1/16	3528
5	5.047	5.563	24	21 1/4	32	8	6575
6	6.065	6.625	30	26 1/16	36 3/4	6 3/4	9645

### Couplings

Standard Pipe Size Inches	Weight Pounds per 100	Price per 100	Standard Pipe Size Inches	Weight Pounds per 100	Price per 100
1/2	11.6	\$7.00	3	249.8	\$60.00
3/4	20.9	10.00	3 1/2	424.1	80.00
1	34.3	13.00	4	474.1	100.00
1 1/4	53.5	17.00	4 1/2	550.0	150.00
1 1/2	74.3	21.00	5	700.0	165.00
2	120.8	28.00	6	750.0	240.00
2 1/2	172	40.00			

In ordering, specify finish desired.

## Standard Sizes of Conduit

### For Installation of Rubber Covered Wire and Cable

The following tables apply only to complete conduit systems:

### 2-Wire and 3-Wire Systems

Size Wire AWG	NUMBER OF WIRES IN ONE CONDUIT								
	1	2	3	4	5	6	7	8	9
14	1/2	1/2	1/2	1/2	3/4	3/4	1	1	1
12	1/2	1/2	1/2	3/4	3/4	1	1 1/4	1 1/4	1 1/4
10	1/2	1/2	1/2	3/4	1	1 1/4	1 1/4	1 1/4	1 1/4
8	1/2	3/4	1	1 1/4	1 1/2	1 1/2	2	2	2
6	3/4	1	1 1/4	1 1/4	1 1/2	2	2	2	2
5	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2	2
4	3/4	1 1/4	1 1/4	1 1/2	2	2	2 1/2	2 1/2	2 1/2
3	3/4	1 1/4	1 1/4	1 1/2	2	2	2 1/2	2 1/2	2 1/2
2	3/4	1 1/4	1 1/4	1 1/2	2	2 1/2	3	3	3
1	3/4	1 1/4	1 1/4	1 1/2	2	2 1/2	3	3	3
0	1	1 1/2	2	2	2 1/2	3	3	3	3
00	1	2	2 1/2	2 1/2	3	3	3 1/2	3 1/2	3 1/2
000	1	2	2 1/2	2 1/2	3	3	3 1/2	3 1/2	3 1/2
0000	1 1/4	2	2 1/2	2 1/2	3	3	3 1/2	3 1/2	4

C. M.	1	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9
200000	1 1/4	2	2 1/2	2 1/2	3	3	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	4
225000	1 1/4	2 1/2	2 1/2	3	3	3	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	4
250000	1 1/4	2 1/2	2 1/2	3	3	3	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	4
300000	1 1/4	2 1/2	3	3	3	3 1/2	4	4	4	4	4	4
350000	1 1/4	2 1/2	3	3	3 1/2	4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
400000	1 1/4	3	3	3	3 1/2	4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
450000	1 1/4	3	3	3	3 1/2	4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
500000	1 1/2	3	3	3	3 1/2	4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
550000	1 1/2	3	3 1/2	4	4 1/2	4 1/2	5	5	5	5	5	5
600000	2	3	3 1/2	4	4 1/2	4 1/2	5	5	5	5	5	5
650000	2	3 1/2	3 1/2	4	4 1/2	4 1/2	5	5	5	5	5	5
700000	2	3 1/2	3 1/2	4	4 1/2	4 1/2	5	5	5	5	5	5
750000	2	3 1/2	3 1/2	4	4 1/2	4 1/2	5	5	5	5	5	5
800000	2	3 1/2	4	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
850000	2	3 1/2	4	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
900000	2	3 1/2	4	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
950000	2	4	4	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1000000	2	4	4	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1100000	2 1/4	4	4 1/2	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1200000	2 1/4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1250000	2 1/4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1300000	2 1/4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1400000	2 1/4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1500000	2 1/4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	5	5	5	5	5	5
1600000	2 1/2	5	5	5	5	5	6	6	6	6	6	6
1700000	3	5	5	5	5	5	6	6	6	6	6	6
1750000	3	5	5	5	5	5	6	6	6	6	6	6
1800000	3	5	5	5	5	5	6	6	6	6	6	6
1900000	3	5	5	5	5	5	6	6	6	6	6	6
2000000	3	5	5	5	5	5	6	6	6	6	6	6

### Permissible Exceptions to Above Table

Stage pocket and border circuits, sign flashers, Classes 1, 2 and 3 signal circuits, elevator control wires, and wires between controllers and motors, and otherwise as permitted by the authority enforcing this code (see table below). In addition the following exceptions are permitted where the run of rigid conduit or electrical metallic tubing does not exceed 50 feet in length and does not contain more than the equivalent of 2 quarter-bends from end to end; 3 No. 6 stranded or 6 No. 8 solid conductors in a 1-inch conduit; and for services only, 2 No. 6 Type R, and 1 No. 6 bare, wires, 2 No. 4, Type R, and 1 No. 4, bare, wires, in 1-inch conduit and 2 No. 2, Type R, and 1 No. 2, bare, wires in 1 1/4-inch conduit.

A smaller bare wire may be used in each of the above combinations if of suitable current carrying capacity.

### 3-Conductor Convertible System

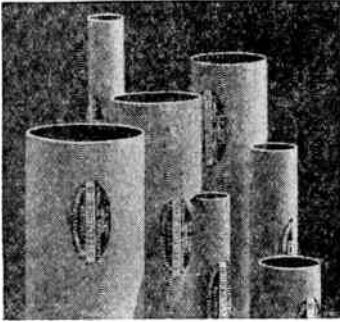
SIZE OF WIRES	1 Wire	Size Conduit Inches	SIZE OF WIRES		Size Conduit Inches
			2 Wires	1 Wire	
14	10	3/4	00	350000	2 1/2
12	8	3/4	000	400000	2 1/2
10	6	1	0000	550000	3
8	4	1	250000	600000	3
6	2	1 1/4	300000	800000	3
5	1	1 1/4	400000	1000000	3 1/2
4	0	1 1/2	500000	1250000	4
3	00	1 1/2	600000	1500000	4
2	000	1 1/2	700000	1750000	4 1/2
1	0000	2	800000	2000000	4 1/2
0	250000	2	.....	.....	.....

### Stage Pocket and Border Circuits, and Elsewhere By Special Permission of Inspectors

Size Wire	MAXIMUM NUMBER OF WIRES IN CONDUIT					
	1-Inch	1 1/4-Inch	1 1/2-Inch	2-Inch	2 1/2-Inch	3-Inch
14	11	19	26	43	61	95
12	..	15	21	34	50	77
10	..	12	16	27	38	60
8	..	..	13	22	31	49
6	..	..	..	..	14	22



**Steeltubes Electrical Metallic Tubing**



No threads to cut, ductile, bends easily, is light, tough and strong; resists corrosion.

Steeltubes takes up less space and consequently can be used in narrower quarters.

Hangers for 3/8-inch heavy conduit are the right size for 1/2-inch Steel-tubes, hangers for 3/4-inch Steeltubes are the same as for 1/2 inch heavy conduit, etc.

Electrunit Steeltubes Conduit with the knurled inside finish showed by actual test a saving of 20 to 30 per cent in the effort required to pull cable through. The cable rides the tops of the tiny knobs instead of making contact the entire length.

The 1933 Code approves Steeltubes for open and concealed work and buried in concrete (except cinder fill) in all sizes up to 2 inches inclusive, 600 V. No. 4 wires.

Furnished in 10-foot lengths; galvanized finish only—inside finish is black enamel.

Size In.	I.D. In.	O.D. In.	Feet to Bundle	Approx. Wt. Lbs. per 1000 Ft. without Couplings	45° or 90° Elbows without Couplings	Size In.	Wt. Lbs. per 100
3/8	.493	.577	100	254	...	...	...
1/2	.622	.706	100	321	...	...	...
3/4	.824	.922	50	488	...	...	...
1	1.049	1.163	50	711	...	...	...
1 1/4	1.380	1.508	50	985	1 1/4	150	...
1 1/2	1.610	1.738	50	1141	1 1/2	200	...
2	2.067	2.195	30	1470	2	275	...

**Special Large Radius Elbows**

For Thick Wall Conduit

Black Enamelled or Sherardized

Size Inches	PRICE, EACH							
	RADIUS, INCHES							
	12	15	18	24	30	36	42	48
1	\$1.35	\$1.60	\$2.00	\$2.30	\$2.60	\$3.00	\$3.40	\$3.80
1 1/4	1.50	1.75	2.20	2.50	2.90	3.40	3.80	4.30
1 1/2	1.80	2.10	2.60	3.00	3.50	4.00	5.00	6.00
2	2.55	3.00	3.70	4.30	4.90	5.70	6.40	7.20
2 1/2	3.30	3.90	4.70	5.50	6.40	7.40	8.30	9.40
3	Std.	6.00	7.30	8.50	9.80	11.50	12.80	14.50
3 1/2	....	Std.	15.10	17.80	20.50	24.00	26.70	30.20
4	....	....	16.60	19.50	22.50	26.30	29.30	33.20
4 1/2	....	....	Std.	27.30	31.40	36.80	40.90	46.30
5	....	....	....	Std.	32.20	37.80	42.00	47.60
6	....	....	....	....	Std.	39.50	43.90	49.70

- 90-degree elbows take above list.
- 60-degree elbows take above list less 5 per cent.
- 45-degree elbows take above list less 10 per cent.
- 30-degree elbows take above list less 15 per cent.

**Dimensions**

Radius Inches	OFFSET		Across Straight End Inches	LENGTH UNBENT	
	Feet	Inches		Feet	Inches
12	1	5 1/2	5 1/2	2	3
15	1	8	5 1/2	2	11
18	2	...	6	3	4
24	2	6	6	4	1
30	3	...	6	4	11
36	3	9	9	6	2
42	4	5	11	7	4
48	5	...	12	8	4

**National Conduit Bushings**



Sherardized finish. Packed in strong wooden cases.

Size In.	Per 100	Std. Pkg.	Wt., Lbs. Std. Pkg.
1/4	\$6.00	1000	30
3/8	6.00	1000	35
1/2	6.00	2500	60
3/4	8.00	1000	35
1	15.00	500	45
1 1/4	20.00	200	24
1 1/2	25.00	100	15
2	40.00	50	10
2 1/2	60.00	30	9
3	90.00	25	10
3 1/2	200.00	25	14
4	300.00	25	20
4 1/2	400.00	10	12
5	500.00	10	15
6	600.00	10	23



**T & B Malleable Conduit Bushings**  
Bushings are non-breakable and thoroughly rust-proofed. Approved by Underwriters Laboratories. Packed in neat, strong boxes, each box marked to show contents.

No.	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100	Price per 100	No.	Size In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
121	3/8	100	1000	2	\$6.00	128	2 1/2	..	30	30	\$60.00
122	1/2	100	2500	3	6.00	129	3	..	25	40	90.00
123	3/4	100	1000	4	8.00	130	3 1/2	..	25	76	200.00
124	1	50	500	9	15.00	131	4	..	25	108	300.00
125	1 1/4	20	200	11	20.00	132	4 1/2	..	10	120	400.00
126	1 1/2	50	100	13	25.00	133	5	..	10	165	500.00
127	2	..	50	22	40.00	134	6	..	10	260	600.00

**National Conduit Locknuts**

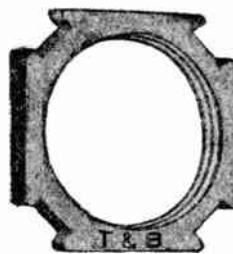


Sherardized Finish

†Packed in strong wooden cases.

Size In.	†Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100	Size In.	†Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
1/4	1000	10	\$2.50	2 1/2	30	6	\$30.00
3/8	1000	12	2.50	3	25	7 1/2	50.00
1/2	2500	42	2.50	3 1/2	25	9	70.00
3/4	1000	26	3.50	4	25	12	100.00
1	500	20	6.00	4 1/2	10	7 1/2	140.00
1 1/4	200	16	10.00	5	10	9	160.00
1 1/2	100	12	15.00	6	10	19	200.00
2	50	8	20.00	...	..	....	.....

**T & B Locknuts**



Cat. No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
140	\$2.50	3/8	100	1000	1 1/2
141	2.50	1/2	100	2500	1 1/2
142	3.50	3/4	100	1000	2 1/2
143	6.00	1	50	500	4
144	10.00	1 1/4	20	200	7
145	15.00	1 1/2	100	100	8

**Malleable Iron**

146	\$20.00	2	50	50	12
147	30.00	2 1/2	30	30	22
148	50.00	3	25	25	38
149	70.00	3 1/2	25	25	48
150	100.00	4	25	25	52
151	140.00	4 1/2	10	10	65
152	160.00	5	10	10	90
153	200.00	6	10	10	110

Nos. 140 to 145 are extra heavy steel and have 4 notches for driving. Nos. 146 to 153 are malleable iron and have 8 high ribs.

## National Bushcaps

### Sherardized Bushings—Tin Caps

National Bushcaps placed on the open ends, when conduits are installed, will keep them clean and clear until wires are drawn in. Std. pkg. 1000.

1/2-Inch.....	per 100	\$7.50
3/4-Inch.....	per 100	10.00
1-Inch.....	per 100	17.50



## T & B Capped Bushings



Cat. No.	Bushing Comp. with Cap, In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
1460	1/2	100	1000	2 1/2	\$7.50
1461	3/4	100	100	4	10.00
1462	1	100	100	9	17.50
1463	1 1/4	50	100	12	22.50
1464	1 1/2	25	100	15	27.50
1465	2	25	50	24	32.50

## National Bondnuts



Bondnuts have sharp beveled-edge teeth that cut into enamel and steel of box, gripping firmly and tightly, forming a perfect ground.

Size, in.	1/2	3/4	1	1 1/4	1 1/2	2
Per 100.....	\$8.50	14.30	21.50	36.30	40.70	73.00
Std. Pkg.....	1000	1000	1000	200	100	100
Pkg. Wt., lbs.	42	26	20	16	12	8

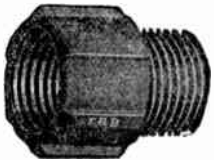
## Chase Nipples



Cat. No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
840	\$5.00	1/4	100	100	2
841	5.00	3/8	100	200	3
842	5.00	1/2	100	200	4
843	8.00	3/4	100	100	7
844	15.00	1	25	100	14
845	18.00	1 1/4	10	100	22
846	20.00	1 1/2	50	50	30
847	30.00	2	50	50	58
848	50.00	2 1/2	25	25	76
849	80.00	3	25	25	104
850	250.00	3 1/2	10	20	130
851	325.00	4	5	5	150
852	500.00	4 1/2	5	5	180
853	750.00	5	5	5	210

Where a Chase Nipple and coupling is used a box can be removed without disturbing the conduit. Where two outlet boxes are to be used back to back, break out center knock-outs and use a Chase Nipple and a locknut to hold the boxes together. Plated with Tabolite Superior galvanizing.

## T & B Malleable Iron Fixture Extension Pieces



Cat. No.	Per 100	Size Inches	Unit Pkg.	Std. Pkg.	Weight Pounds per 1000
1590	\$4.00	3/8x1	50	1000	70
1591	4.00	3/8x1 3/8	50	1000	85
1592	4.00	3/8x1 1/2	50	1000	65

## T & B Grounding Wedge-Lugs

For binding service conduit, service enclosures or the grounded wire. Can be used either inside or outside the box. Designed to lock the conduit system together, both electrically and mechanically, without jumper wires.

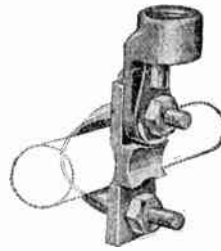


Cat. No.	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
3650	1/2	100	100	2 1/2	\$12.00
3651	3/4	100	100	5 1/2	14.00
3652	1	20	50	6 1/2	17.00
3653	1 1/4	10	50	8	19.00
3654	1 1/2	10	50	10	22.00
3655	2	10	25	12	32.00
3656	2 1/2	10	10	20	66.00
3657	3	10	10	23	80.00
3658	3 1/2	5	5	30	144.00
3659	4	5	5	40	160.00
3660	4 1/2	1	3	100	240.00
3661	5	1	2	100	300.00
3662	6	1	2	100	360.00

## T & B Ground Fittings

### Protective Type

For Rigid Conduit to 1/2, 3/4 and 1-Inch Water Pipe



Cat. No.	Each	Size Conduit Inches	Unit Pkg.	Std. Pkg.	Weight Pounds per 100
3800	\$ .70	1/2	25	100	50
3801	1.25	3/4	25	25	57
3802	1.75	1	10	10	65

For Rigid Conduit to 1 1/4, 1 1/2 and 2-Inch Water Pipe

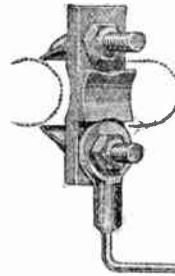
3680	\$ .90	1 1/2	10	50	170
3681	1.60	3/4	5	20	172
3682	2.50	1	2	10	175

For No. 8 Single Armored Cable to 1/2, 3/4 and 1-Inch Water Pipe

3810	\$ .70	...	25	100	48
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Nos. 3800, 3801 and 3802

## T & B Meter Shunts



Insures continuous ground circuit where ground wire connection is made on house side of water meter. Consists of 2 reversible shackles connected by a rod of No. 4 bare copper wire.



Cat. No.	Each	For Water Pipe, Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
3812	\$1.25	1/2, 3/4 and 1	25	25	112
3813	1.50	1 1/4, 1 1/2 and 2	20	20	172
3814	2.00	2 1/2, 3 and 3 1/2	10	10	350
3815	2.50	4, 4 1/2 and 5	5	5	400

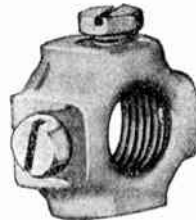
## No. 3830 T & B Ground Fittings

If a conduit connection is not required, it is economical to use this fitting, which consists of U-bolt, adapter bar and soldering lug assembly without conduit hub. Solder lug takes No. 4 wire.



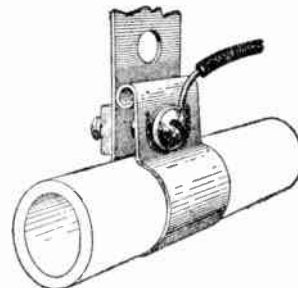
Cat. No.	Each	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
3830	\$ .50	25	25	40

## T & B Grounding Bushings



Cat. No.	Per 100	Size Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
3850	\$7.50	1/2	100	100	8
3851	9.00	3/4	100	100	9
3852	15.00	1	50	50	12
3853	18.00	1 1/4	20	50	15
3854	24.00	1 1/2	50	50	30
3855	35.00	2	25	25	35

## Sherman Ground Clamps



An all copper, one-piece clamp which can be drawn up tight. The roll portion for soldering is turned in to rest against opposite tongue of clamp, preventing the two ends from tipping together when tightened; holding the ears parallel, and insuring large amount of drawing power.

Cat. No.	Size Pipe Inches	Carton	Std. Pkg.	Approx. Wt. Lbs., Std. Pkg.	Price Each
1	3/8 to 1	100	1000	80	\$ .20
2	1/2 to 2	100	1000	125	.25
3	3/4 to 3	50	500	80	.30
4	3/8 to 4	..	250	50	.60

**T & B Erickson Conduit Couplings**



Conduit Union does away with running threads, saving dies and labor. Permits opening of conduit at any desired point. Enables the start of circuit from 2 outlets and makes a good, strong connection at any

point in the run. The pipe ends abut so that no space is left between the lengths of conduit, therefore, it is not necessary to draw the 2 ends of the conduit together. Vibration will not loosen a connection made with an Erickson coupling. The hexagon shoulder and ridges on the outside of the coupling make an easy grip for a pipe wrench.

Cat. No.	Per 100	Size Inches	Unit Pkg.	Std. Pkg.	Weight per 100 Pkg.
674	\$32.00	3/8 for 3/8-Inch Conduit	50	100	13
675	32.00	1/2 for 1/2-Inch Conduit	25	100	24
676	40.00	3/4 for 3/4-Inch Conduit	25	50	34
677	56.00	1 for 1-Inch Conduit	25	25	52
678	100.00	1 1/4 for 1 1/4-Inch Conduit	25	25	92
679	150.00	1 1/2 for 1 1/2-Inch Conduit	25	25	116
680	260.00	2 for 2-Inch Conduit	20	20	195
681	500.00	2 1/2 for 2 1/2-Inch Conduit	20	20	380
682	800.00	3 for 3-Inch Conduit	10	10	420
683	1200.00	3 1/2 for 3 1/2-Inch Conduit	5	5	520
684	1600.00	4 for 4-Inch Conduit	5	5	620
685	2000.00	4 1/2 for 4 1/2-Inch Conduit	2	2	850
686	2500.00	5 for 5-Inch Conduit	2	2	900

**Diamond One-Hole Malleable Clamps**



Hot galvanized annealed twice before galvanizing to assure ductility. Will not crack in installation. Has but one screw hole and cuts in half the expense of screws or expansion bolts and the labor of installing as compared to the 2-hole strap.

Conduit or Pipe Size, Normal Inside Diam., In.	Per 100	Diam. Screw Hole In.	Expansion Shield or Screw Anchor Size, In.	Wt. Lbs. per 100	Std. Pkg.
3/8	\$4.80	3/16	3/16x1	4	100
1/2	6.00	1/4	3/16x1	6	100
3/4	7.20	5/16	1/4x1	9	100
1	9.60	3/8	1/4x1	15	100
1 1/4	16.80	1/2	3/8x1	21	50
1 1/2	24.00	5/8	3/8x2	38	50
2	48.00	3/4	1/2x2	64	25
2 1/2	72.00	7/8	1/2x2	115	12
3	96.00	1	1/2x3 1/2	150	10
3 1/2	144.00	1 1/8	5/8x3 1/2	250	10
4	156.00	1 1/4	5/8x3 1/2	325	10



**T & B Malleable Iron Fixture Hickeys Blind, Female Type**

Both ends perfectly aligned. Clean castings. Clean cut threads.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
1518	3/8 x 1/8	1000	73	\$6.50
1519	3/8 x 1/4	1000	76	6.50
1520	3/8 x 3/8	1000	80	7.50

**T & B Malleable Iron Fixture Hickeys**

**Combination Open Male and Female**

Packed 50 in a carton.

Cat. No.	Size, Inches Male	Female	Std. Pkg.	Wt., Lbs. per 100	Price per 100
1535	3/8	1/8	1000	73	\$6.50
1536	3/8	1/4	1000	76	6.50
1537	3/8	3/8	1000	80	7.50



**Di-Stampt Conduit Clamps**

Pressed Steel—Hot Galvanized

Hot dipped galvanized by the Diamond process. The hollow or arched section of this clamp gives maximum strength with minimum weight.

Conduit Size In.	Per 100	No. Wood Screws	Std. Pkg.	Wt. Lbs. per 100
1/4	\$2.50	10	100	3
3/8	3.00	10	100	3
1/2	3.10	10	100	5
3/4	3.75	14	100	8
1	8.00	14	100	9
1 1/4	14.00	18	50	10
1 1/2	20.00	18	50	18

**National Adjustable Fixture Studs**

Nos. 2251 and 2252, unit pkg. 50, std. pkg. 1000. Bolts with nuts, unit pkg. 500, std. pkg. 1000.



Cat. No.	Size In.	Description	Price per 100
2251	3/8	Male	\$3.62
2252	1/2	Male	8.12
.....	3/8 x 3/16	Round Head Sherardized Steel Bolts with Nuts	.50

**National Economy Fixture Studs**

Strong. Easy to install. Saves at least two-thirds the time required for installation besides a saving in bolts and nuts.

Cat. No.	Size, Inches	Price per 100
2255	3/8-Inch Male Closed End	\$6.00
2256	3/8-Inch Male and Female	5.00
2257	1/2-Inch Male Closed End	8.00
2258	1/2-Inch Male and Female	7.00



**No. 1 Reliable Station Ground Clamps**



For telephone, radio and signal circuit station grounds.

For 3/8 to 1 1/4 inch pipe. Tinned copper strips, round edge with close fitting threads.

No. 1.....each \$1.00

**Galvanized Conduit Straps**



Cat. No.	Size Inches	No. to Pound	Price per Lb.	Cat. No.	Size Inches	No. to Pound	Price per Lb.
BX	Armored Cable	68	\$.25	214	1 1/2	11	\$.25
210	1/2	45	.25	215	2	7	.25
211	3/4	30	.25	216	2 1/2	5	.25
212	1	17	.25	230	3	4	.25
213	1 1/4	13	.25	231	3 1/2	2	.25



## Diamond 1-Hole Rolled Steel Conduit and Cable Clamps



For thin wall conduit. Made of cold rolled mild steel annealed and Diamond galvanized after forming.

Efficient where light construction is to be used and where there are no severe strains.

No.	Per 100	Cable Size In.	Reg. Conduit or Pipe In.	Thin Wall Conduit In.	Wt. Lbs. per 100
*4/0	\$1.65	7/16	1/2	...	1
*2/0	1.80	5/8	3/4	3/8	1 1/2
†0	4.40	1 1/16	3/8	1/2	4
†1	5.10	3/4	1/2	...	4 1/2
†1A	5.30	7/8	...	3/4	5
†2A	5.80	1	3/4	...	7
†2	6.00	1 1/8	...	1	7 1/2
†3A	7.00	1 1/4	1	...	15
†3	10.00	1 1/2	...	1 1/4	16
†3B	10.00	1 5/8	1 1/4	...	17
†4A	10.50	1 3/4	...	1 1/2	19
†4	10.50	1 7/8	1 1/2	...	20

\*Screw hole: 3/16 inch; †3/32 inch.

### No. 90 T & B 3/8-Inch Cable Clips



Straddles the cable so that the top rests across the spirals of the cable and the clip faces at right angles to the spirals of the cable. Will not harm cables.

Will take Nos. 14W2, 14W3, 12W2, 12W3, 10W2, 10W3, 8-1, and also 3/8-inch S.S. and D.S. flexible conduit. Standard package 10,000.

No. 90 ..... per 1000 \$4.00

### T & B Adjustable Conduit Hangers



Type A

Hanger will fit any flange from 2 3/4 to 12 inches. It is adjustable for varying plaster lines and will support any number of conduits from 1 to 8, which may run at any angle with the beams and close against the beam, or far enough below to permit a second line of conduit to be run above. Additional runs of conduit can be added without interfering with lines already in position. It is not necessary to loosen clamp to meet any condition which may arise. No other conduit hanger will accomplish half as much at twice the cost. Clamps of stamped steel.

duits to be run above. Additional runs of conduit can be added without interfering with lines already in position. It is not necessary to loosen clamp to meet any condition which may arise. No other conduit hanger will accomplish half as much at twice the cost. Clamps of stamped steel.

Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
700	Type A Clamp (Incl. Bolts) Fits Flange from 2 3/4 to 7 3/8 In. ....	25	100	33	\$30.00
701	Type B Clamp (Incl. Bolts) Fits Flange from 7 to 12 In. ....	10	100	62	45.00
702	Type C Clamp (Incl. Bolts) Fits Flange 8 1/2 to 11 3/8 In. ....	10	100	46	45.00
703	Special Bolts.....	100	100	6	5.00

Extension used with 2 inner parts of Type A clamp, becomes Type C clamp.

Complete with Support	Type A			Type B		
	Std. Pkg.	Cat. No.	Price per 100	Cat. No.	Wt., Lbs. per 100	Price per 100
1- 1/2"	100	710	45 \$34.00	760	74	\$49.00
1- 3/4"	100	711	46 38.00	761	75	53.00
1- 1"	50	712	48 44.00	762	77	59.00
1- 1 1/4"	50	713	51 48.00	763	80	63.00
1- 1 1/2"	25	714	52 52.00	764	81	67.00
1- 2"	25	715	56 60.00	765	85	75.00
1- 2 1/2"	25	716	59 68.00	766	88	83.00
1- 3"	25	717	63 78.00	767	92	93.00
2- 1 1/2"	100	718	58 38.00	768	87	53.00
2- 2"	100	719	65 42.00	769	94	57.00
2- 1"	25	730	73 48.00	780	102	63.00
2- 1 1/4"	25	731	85 52.00	781	114	67.00
2- 1 1/2"	25	732	95 56.00	782	124	71.00

### No. 1629 Klein's Fish Tape Pullers



This tape puller is light in weight, strong and can be carried in the vest pocket.

Weight, each, 3 1/2 ounces.

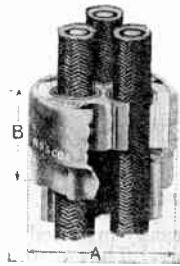
For Fish Tape

No. 1629 ..... each \$2.50

No. 12 Iron Wire

No. 1629A ..... each \$2.50

## R & S Cable Supports Standard Conduit Type



A compact, strong and easily installed device for supporting cables in conduit risers.

Support consists of a threaded collar, not much larger in diameter than the outlet bushing which it replaces at the end of the conduit inside of the pull box. It has a set of inserts for one or more cables as required and individual tapered cable grips. They are suitable alike for lead, paper or braid-covered cables.

In installing, the collar is screwed on to end of riser, in lieu of a bushing, the cables are then pulled, the inserts dropped into socket of collar and the split, tapered grip bushings placed over the individual cables, which are now allowed to pull the grips into place by their own weight. A perceptible slack of cable should be provided between supports to allow for expansion and contraction.

Made of galvanized iron, with hard fibre cable grips. When ordering, specify o.d. of cable to be supported.

Cat. No.	Each	Size Conduit In.	No. of Cables	DIMENSIONS INCHES		*Max. Diam. Cable In.	Approx. Wt. Lbs.
				A	B		
1831	\$3.25	2	1	2 7/8	2 21/32	1 3/4	2
1832	3.25	2	2	3 9/16	2 15/32	2 3/8	3 3/4
1833	3.25	2	3	3 9/16	2 15/32	1 9/16	3 3/4
1834	3.25	2	4	3 9/16	2 15/32	1 7/8	4
1841	3.65	2 1/2	1	3 1/16	3 5/16	2	2 1/4
1842	3.65	2 1/2	2	3 1/4	2 29/32	7/8	4
1843	3.65	2 1/2	3	3 3/4	2 29/32	27/32	4
1844	3.65	2 1/2	4	3 3/4	2 29/32	25/32	4 1/4
1851	4.80	3	1	4	3 25/32	2 1/4	4 1/4
1852	4.80	3	2	4 9/16	3	1 1/16	6
1853	4.80	3	3	4 9/16	3	1	6
1854	4.80	3	4	4 9/16	3	1 1/16	6
1862	6.50	3 1/2	2	5	3 7/8	1 7/8	8 1/2
1863	6.50	3 1/2	3	5	3 7/8	1 9/16	8 3/4
1864	6.50	3 1/2	4	5	3 7/8	1 1/2	9
1872	8.10	4	2	5 11/16	3 11/32	1 9/16	9
1873	8.10	4	3	5 11/16	3 11/32	1 9/16	9 1/2
1874	8.10	4	4	5 11/16	3 11/32	1 9/16	9 1/2

\*Over insulation.

### Special Tile Duct Type

Made on special order only. Used to support risers run through tile duct; can be furnished in any number of gangs. Prices and full information upon application.

### Split Type

Where installations are already in use, and the necessity of a support for the cables occurs, it is possible to utilize this type of support without the necessity of disconnecting and pulling out the cable risers. This split type can be installed around cable and the necessary inserts and bushings as used on the conduit type inserted. The range of sizes are the same as on the conduit type.

Prices and full information upon application.

### Tempered Steel Fish Tapes

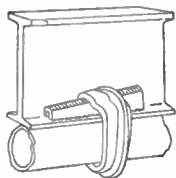


Regularly furnished a n y assortment of lengths, from 100 to 500 feet, put up in coils. If wire is desired in continuous lengths of 2000 feet or over it will be furnished on reels when specified.

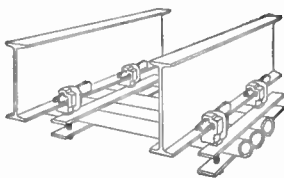
Cat. No.	Size Inches	Weight per 1000 Feet Pounds	Price per 100 Feet
1000	1/8x.060	24	\$2.00
1001	3/16x.060	35	3.00
1002	1/4x.060	46	4.00
1003	1/8x.030	13	1.50
1004	3/16x.030	19	2.00
1005	1/4x.030	25	2.50

**Wedgtite Pipe Hangers**

*Schedule CR*  
Furnished with Wedge



Type CHP Installed



Type CHU Installed

Wedgtite Pipe Hangers are quickly and easily installed as only a few blows of a hammer are necessary. They can be used with any I beam, channel, or other structural shape having a lower flange  $\frac{1}{8}$  to  $\frac{3}{8}$  inch thick. They consist of two pieces, a hook and a wedge, which is provided with saw teeth so that vibration will not loosen it. The wedge is interchangeable with all types and sizes of hooks.

Types CHP and CHR are made so that one end hooks under the pipe and the other over the flange of the structural shape. The end that hooks over the flange has a groove into which the wedge is driven, tightly drawing the pipe against the flange and securely holding it in position.

Type CHU is wedged to the flange independently of the pipe or group of pipes it is to support. A bolt is used for suspending the pipe, its head resting securely in a pocket in body of hanger. This pocket takes a  $\frac{1}{2}$ -inch bolt. Bolt can be inserted after the hanger has been secured to the flange.

Type CHA consists of a Type CHU Hanger and a bracket to carry 2 or 3 porcelain knobs for wires. Bracket is attached to CHU Hanger with a bolt and nut. Bolt can be loosened and bracket turned to accommodate wires running either parallel with or at right angles to the structural shape.

The thickness of flange as measured about  $\frac{3}{4}$  to 1 inch from the edge may be  $\frac{1}{8}$  to  $\frac{1}{2}$  inch if the pipe is clamped directly against the under side of the flange. If a coupling is so placed as to hold the pipe away from the flange, the thickness of the coupling should be subtracted from the above maximum dimension ( $\frac{1}{2}$  inch).

Cadmium-galvanized is the standard finish.

**Type CHP Hangers**



For pipe running parallel with a structural shape.

Cat. No.	Each	Size In.	Std. Pkg.
CHP1	\$.40	$\frac{1}{2}$	100
CHP2	.45	$\frac{3}{4}$	100
CHP3	.50	1	100
CHP4	.55	$1\frac{1}{4}$	100
CHP5	.60	$1\frac{1}{2}$	100
CHP6	.65	2	100

**Type CHU Hangers**



For suspending a pipe or group of pipes from a structural shape. Takes  $\frac{1}{2}$ -inch hanger bolt.

CHU1	\$.55	100
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**Wedges for Wedgtite Hangers**



Cat. No.	Each	Thickness Flange, In.	Std. Pkg.
CHW1	\$.20	$\frac{1}{8}$ - $\frac{1}{2}$	100
CHW2	.20	$\frac{1}{4}$ - $\frac{5}{8}$	100

**Type CHR Hangers**



For pipe running at right angles to a structural shape.

Cat. No.	Each	Size In.	Std. Pkg.
CHR1	\$.40	$\frac{1}{2}$	100
CHR2	.45	$\frac{3}{4}$	100
CHR3	.50	1	100
CHR4	.55	$1\frac{1}{4}$	100
CHR5	.60	$1\frac{1}{2}$	100
CHR6	.65	2	100

**Type CHA Hangers**



For carrying open wires on structural steel work.

CHA2	\$.10	50
CHA3	\$.15	50

**T & B Lakin Conduit Hickeys**

The shank has a bushed hole into which the end of the conduit enters when a short bend is made at its end or a bend is to be worked down.

The bushed opening in the shank fits snugly over the end of the conduit and protects the threads.

This hickey will not slip on the conduit while a bend is being made. It enables a workman to make bends having different curvatures. It will not kink the pipe when making the shortest practical bends.

Made of malleable iron. Japanned finish.

Cat. No.	Size Pipe Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price Each
335	$\frac{1}{2}$	1	10	190	\$1.75
336	$\frac{3}{4}$	1	10	220	2.25
337	1	1	2	520	3.25



**Allen Improved Pipe Benders**



This bender is made of high test steel. Has tempered case hardened teeth which grip in all positions. Has solid jaws, no adjustments; 2-in-1 design with V receiving groove to prevent any contact on inner part of curve, thus preventing mashing, crushing or deforming the pipe. It will bend anything tubular or solid that can be bent cold.

In 2 sizes: Combination of  $\frac{1}{4}$  to  $\frac{3}{4}$  inch inclusive, combination of  $\frac{3}{4}$  to  $1\frac{1}{4}$  inclusive. Side opening. Individually boxed,

No. 1 packed 10 boxes in standard package, No. 2 packed 5 in a standard package.

Price, No. 1, Sizes  $\frac{1}{4}$  to  $\frac{3}{4}$  Inch..... each \$6.20

Price, No. 2, Sizes  $\frac{3}{4}$  to  $1\frac{1}{4}$  Inches..... each 9.00

**Steel City Conduit Benders**

Made in 2 forms as listed. Furnished complete with riveted handles. The castings are malleable iron.

Cat. No.	Size In.	Form	Wt. Lbs.	Price Each
900	$\frac{1}{2}$	90°	8	\$1.50
901	$\frac{1}{2}$	45°	8	1.50
902	$\frac{3}{4}$	90°	12	1.50
903	$\frac{3}{4}$	45°	12	1.50



**T & B Benders**

**For Thinwall Conduit**

This bender will also bend standard conduit;  $\frac{1}{2}$ -inch bender will bend  $\frac{1}{2}$  and  $\frac{3}{8}$ -inch tubing or  $\frac{3}{8}$ -inch conduit;  $\frac{3}{4}$ -inch will bend  $\frac{3}{4}$ -inch tubing or  $\frac{1}{2}$ -inch conduit; 1-inch will bend 1-inch tubing or  $\frac{3}{4}$ -inch conduit.

Cat. No.	Each	Size Inches	Std. Pkg.	Car. ton	Std. Pkg.
4195	\$2.50	$\frac{1}{2}$ , $\frac{3}{8}$	10	2	25
4196	3.90	$\frac{3}{4}$	10	2	42
4197	5.95	1	2	1	14
*4192	62.50	$\frac{1}{2}$ , $\frac{3}{4}$ , 1	1	1	68

\*No. 4192 is a combination bench bender for  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1-inch thinwall conduit.

**Steeltubes Hickeys**

For short bends and tight corners and for stubbing up in concrete work.

Cat. No.	Each	Size In.	Std. Pkg.	Wt. per M
2195	\$1.40	$\frac{1}{2}$	18	150
2196	2.00	$\frac{3}{4}$	9	275
2197	2.71	1	6	600



## National Flexsteel A.B.C. Cable Armored Bushed Cable—Double Armored

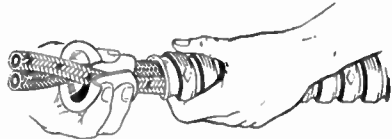


National Flexsteel A.B.C. Cable with Anti-Short bushing has a moisture-proofed wrapping of Kraft over conductors, instead of an overall braid. Stripping conductors for terminals, Kraft unwinds quickly without use of sharp tools next to conductors, can be broken off by hand, and allows space inside steel for Anti-Short bushing.



Kraft armor strips with a pull—no possible injury to conductors—reduces labor.

Kraft armor unwinds below steel, providing space for Anti-Short bushing.



Anti-Short bushing lays over conductors from the side—a squeeze inserts it inside steel.

### Single Strip—1-Conductor

Size B & S Gauge	Per 1000 Feet	Approx. Feet in Coil	Wt. Lbs. per 100 Feet
14-1	\$57.20	250	168
12-1	62.10	250	192
10-1	66.70	250	200
8-1	73.80	250	236
6-1	93.20	250	320

### Single Strip—2-Conductor

14-2	\$44.00	250	248
12-2	64.90	250	272
10-2	88.50	250	340
8-2	144.20	150	647
6-2	206.48	100	720
4-2	320.10	100	910

### Single Strip—3-Conductor

14-3	\$65.60	250	284
12-3	86.30	250	360
10-3	112.10	250	410
8-3	177.00	150	635
6-3	250.70	100	880

### Single Strip—4-Conductor

14-4	\$107.10	250	348
12-4	131.30	200	420

## National A.B.C. Armored Lamp Cord

### Single Strip—2-Conductor

18-2	\$65.80	250	172
16-2	75.60	250	254
14-2	98.40	250	236

## National Anti-Short Bushings



This red fibre Anti-Short Bushing is to be used with A.B.C. Armored Bushed Cable.

All A.B.C. Cable has tied to each coil a bag containing sufficient Anti-Shorts for average use. Extra Anti-Shorts are sold separately as listed below.

Per Bag	For Use with Size Cable	Anti-Shorts per Bag	Bags per Std. Pkg.
\$.35	14-2, 14-3, 12-2, 6-1, 4-1	35	30
.35	14-4, 12-3, 12-4, 10-2, 10-3, 2-1	35	30
.40	10-4, 8-2, 8-3, 8-1	20	10
.32	6-2, 6-3	16	10
.32	4-2, 4-3	16	10
.35	14-1, 12-1, 10-1, 8-1	35	10

## Flexsteel Flexible Conduit

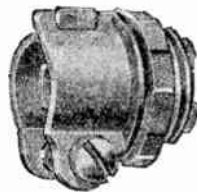
### Single Strip



Size In.	Per 1000 Feet	Approx. Feet in Coil	Wt., Lbs. per 1000 Feet
5/16	\$42.00	250	160
3/8	54.72	250	180
1/2	74.72	100	520
3/4	99.04	25-50	620
1	208.16	25-50	1180
1 1/4	259.68	25-50	1480
1 1/2	330.56	25	1800
2	424.00	25	2230
2 1/2	496.96	25	2840
3	664.64	25	3000

## Flexsteel EZ Hinged Strap Box Connectors

### For Armored Cable and Flexible Conduit



EZ Strap is wide, strong and clamps cable more securely and strongly without contortion of cable. This point is particularly advantageous in use with flexible steel conduit.

Peephole is patented.

Sherardized finish.

Furnished with bondnuts.

Holds 6-1 armored cable; 8-1 armored lead cable; 18-3, 16-2, 16-3 plain lamp cord; 3/16-inch flexible conduit.

Cat. No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt. Lbs. per 100 Pkgs
2222-EZ	\$27.00	35/64	27/64	3/8	1/2	25	500	28

Holds 14-1, 12-1, 10-1, 8-1 armored cable; 14-1, 12-1, 10-1 armored lead cable.

2226-EZ \$18.00 15/32 23/64 21/64 1/2 50 200 18  
Holds 14-2, 14-3, 12-2, 12-3, 4-1 armored cable; 6-1 armored lead cable; 14-2, 14-3 plain lamp cord; 3/8 inch flexible conduit.

2163-EZ \$8.80 41/64 1/2 15/32 1/2 50 500 39  
Holds 14-4, 12-3, 12-4, 10-2, 10-3 armored cable; 14-2 armored lead cable.

2164-EZ \$18.00 11/16 35/64 17/32 1/2 25 100 13  
Holds 12-4, 10-3 armored lead cable; 14-2, 14-3, 12-2, 4-1 armored lead cable.

2165-EZ \$18.00 3/4 37/64 17/32 1/2 50 250 33  
Holds 10-4, 8-2, 8-3 armored cable; 14-4, 12-3, 10-2, 10-3 armored lead cable.

2165-X-EZ \$18.00 55/64 11/16 37/64 1/2 25 100 14  
Holds 8-3 armored lead cable; 12-4, 10-3, 10-4 armored lead cable; 1/2-inch flexible conduit.

2166-EZ \$18.00 15/16 47/64 41/64 1/2 25 100 15  
Holds 8-4, 6-2, 6-3 armored cable; 8-2, 8-3 armored lead cable.

2166-X-EZ \$26.00 11/64 51/64 3/4 3/4 25 100 20  
Holds 6-3, 6-4, 4-2 armored cable; 8-4, 6-2, 6-3 armored lead cable; 3/4-inch flexible conduit.

2167-EZ \$26.00 11/8 7/8 13/16 3/4 25 100 19  
Holds 4-3, 4-4, 2-2 armored cable; 6-3 armored lead cable.

2167-X-EZ \$42.00 17/32 31/32 15/16 1 10 50 15  
Holds 4-4, 2-3 armored cable; 6-4, 4-2, 4-3 armored lead cable.

2168-EZ \$42.00 13/8 15/64 1 1 10 50 16  
Holds 1-inch flexible conduit.

2169-EZ \$42.00 17/32 11/8 11/32 1 10 50 19  
Holds 1 1/4-inch flexible conduit.

2170-EZ \$60.00 125/32 1 1 1 10 50 29  
Holds 1 1/2-inch flexible conduit.

2171-EZ \$86.00 27/64 1 1 1 5 50 36  
Holds 2-inch flexible conduit.

2172-EZ \$128.00 293/64 2 1/4 2 5 20 23  
Holds 2 1/2-inch flexible conduit.

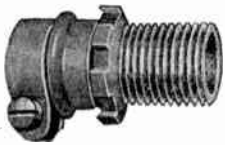
2173-S \$184.00 31/16 2 3/4 2 1/2 5 25 41  
Holds 3-inch flexible conduit.

2174-S \$252.00 39/16 3 3/4 2 5/8 3 5 11



**Flexsteel Panel Box Connectors**

**For Armored Cable and Flexible Conduit**



Has extra long neck. Is furnished complete, a finished one piece fitting.

Peephole is patented. Sherardized finish.

Furnished with bondnuts.

Holds 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 4-1 armored cable; 14-2, 6-1 armored lead cable; 14-2, 14-3 plain lamp cord; 3/8-inch flexible conduit.

Cat. No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2200-S	\$74.00	4 3/64	9/16	1/2	1/2	20	100	15
Holds 12-4, 10-3 armored cable.								
2201-S	\$74.00	2 3/32	5/8	9/16	1/2	20	100	25
Holds 10-4, 8-2, 8-3, 8-4, 6-2 armored cable; 12-4, 10-2, 10-3, 10-4, 8-2 armored lead cable; 1/2-inch flexible conduit.								
2202-S	\$74.00	1 5/16	2 3/32	3 9/64	1/2	20	100	21
Holds 14-3, 6-3, 6-4, 4-2, 4-3, armored cable; 8-4, 6-2, 6-3 armored lead cable; 3/4-inch flexible conduit.								
2203-S	\$99.00	1 5/32	1 5/16	3/4	3/4	20	100	27
Holds 4-4 armored cable; 6-4, 4-2, 4-3, 4-4 armored lead cable; 1-inch flexible conduit.								
2204-EZ	\$145.00	1 7/64	1 1/8	3 1/32	1	5	25	13
Holds 1 1/4-inch flexible conduit.								
2205-EZ	\$202.00	1 9/64	1 1/32	1 7/32	1 1/4	5	25	19
Holds 1 1/2-inch flexible conduit.								
2206-EZ	\$294.00	2 3/64	1 1/16	1 15/32	1 1/2	5	25	23
Holds 2-inch flexible conduit.								
2207-EZ	\$406.00	2 1/32	2 3/16	1 31/32	2	5	20	27
Holds 2 1/2-inch flexible conduit.								
2228-S	\$592.00	3 3/32	2 1/16	2 13/32	2 1/2	15	25	47
Holds 3-inch flexible conduit.								
2229-S	\$712.00	3 1/32	3 1/4	2 5/64	3	..	5	13

**No. 2163 Flexsteel Tangent Set Screw Box Connectors**

**For Armored Cable and Flexible Conduit**



An important feature of this connector is the position of the screw which brings great pressure upon the cable with a minimum of crushing of cable. Set screw is usually large.

Peephole is patented. Sherardized finish.

Furnished with bondnuts.

Holds 14-2, 14-3, 12-2, 12-3, 10-2 armored cable; 14-3, 6-1 armored lead cable; 3/8-inch flexible conduit.

Cat. No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2163	\$7.20	4 1/64	1/2	1 5/32	1/2	50	500	40

**Flexsteel Pitcher Lip Box Connectors**

**For Armored Cable and Flexible Conduit**



Desirable for radio connections where wedge method admits of no vibration.

Requires no locknuts. Peephole is patented. Sherardized finish.

Holds 14-2, 14-3, 12-2, 4-1 armored cable; 6-1 armored lead cable; 14-3, 14-2 plain lamp cord; 3/8-inch flexible conduit.

Cat. No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
162	\$7.20	5/8	1 7/32	1 13/32	1/2	50	500	24
Holds 14-2, 14-3, 14-4, 12-2, 12-3, 10-2, 4-1 armored cable; 6-1 armored lead cable; 14-2, 14-3 plain lamp cord; 3/8-inch flexible conduit.								
163	\$7.20	4 3/64	1 7/32	1/2	1/2	50	500	25

**Flexsteel 90 Degree Angle Box Connectors**

**For Armored Cable and Flexible Conduit**



Open back is separate from the cable clamp proper.

Peepholes are patented. Sherardized finish.

Furnished with bondnuts.

Holds 14-2, 14-3, 12-2, 12-3, 4-1 armored cable; 6-1 armored lead cable; 14-2, 14-3 plain lamp cord; 3/8-inch flexible conduit.

Cat. No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2210-EZ	\$28.00	4 1/64	1/2	1 5/32	1/2	20	100	19
Holds 14-4, 12-3, 12-4, 10-2, 10-3 armored cable; 14-2, 14-3 armored lead cable.								
2210-X-EZ	\$28.00	1 1/16	3 5/64	1 7/32	1/2	20	100	21
Holds 8-3 armored cable; 12-4, 10-3, 10-4 armored cable; 1/2-inch flexible conduit.								
2211-EZ	\$39.00	1 5/16	4 7/64	4 1/64	1/2	20	100	24
Holds 6-4, 4-2, 4-3 armored cable; 8-4, 6-2, 6-3 armored lead cable; 3/4-inch flexible conduit.								
2214-SO	\$66.00	1 5/32	3 1/32	3/4	3/4	20	100	42
Holds 4-4 armored lead cable; 1-inch flexible conduit.								
2216-SO	\$100.00	1 1/32	1 1/4	1	1	..	20	12
Holds 1 1/4-inch flexible conduit.								
2218-SO	\$128.00	1 23/32	1 7/16	1 1/32	1 1/4	..	10	10
Holds 1 1/2-inch flexible conduit.								
2234	\$186.00	2 7/64	1 3/4	1 1/2	1 1/2	10	10	17
Holds 2-inch flexible conduit.								
2236	\$272.00	2 29/64	2 1/4	2	2	5	5	13
Holds 2 1/2-inch flexible conduit.								
2238	\$640.00	3 1/16	2 3/4	2 1/2	2 1/2	5	5	25
Holds 3-inch flexible conduit.								
2240	\$852.00	3 9/16	3 1/4	3	3	5	5	33

**Flexsteel 45 Degree Angle Box Connectors**

**For Armored Cable and Flexible Conduit**



This is an open back connector that allows for easy fishing with separate cable clamps.

Peephole is patented. Sherardized finish.

Furnished with bondnuts.

Holds 14-2, 14-3, 12-2, 12-3, 4-1 armored cable; 6-1 armored lead cable; 14-2, 14-3 plain lamp cord; 3/8-inch flexible conduit.

Cat. No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2208-EZ	\$28.00	4 1/64	1/2	1 5/32	1/2	20	100	14
Holds 14-4, 12-3, 12-4, 10-2, 10-3 armored cable; 14-2 armored lead cable.								
2208-X-EZ	\$28.00	1 1/16	3 5/64	1 7/32	1/2	20	100	17
Holds 8-3 armored cable; 12-4, 10-3, 10-4 armored lead cable; 1/2-inch flexible conduit.								
2209-SO	\$39.00	1 5/16	4 7/64	4 1/64	1/2	20	100	20
Holds 6-4, 4-2, 4-3 armored cable; 8-4, 6-2, 6-3 armored lead cable; 3/4-inch flexible conduit.								
2215-SO	\$66.00	1 5/32	3 1/32	3/4	3/4	20	100	31
Holds 4-4 armored lead cable; 1-inch flexible conduit.								
2217-SO	\$100.00	1 17/32	1 1/4	1	1	..	20	9
Holds 1 1/4-inch flexible conduit.								
2219-SO	\$128.00	1 23/32	1 7/16	1 7/32	1 1/4	..	10	7

**No. 2226-S Flexsteel Squeeze Type Lamp Cord Connectors**

**For Armored Cable**



Sherardized finish.

Holds 10-1, 8-1 armored cable.

Cat. No.	Per 100	I.D., In. Open	I.D., In. Closed	Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2226-S	\$18.00	1 5/32	1 3/32	1 1/32	1/2	50	200	15



### Flexsteel Flexible Conduit Couplings

For Flexible Steel Conduit

Sherardized finish.

Cat. No.	Per 100	I.D., In.		Conduit In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
		Open	Closed				
2182	\$46.00	17/32	7/16	5/16	25	200	14
2183	54.00	13/64	9/16	3/8	25	100	11
2184	58.00	61/64	13/16	1/2	10	100	24
2185	76.00	13/32	1	3/4	10	100	31
2186	102.00	17/16	13/16	1	5	50	24
2187	138.00	13/64	1 1/2	1 1/4	5	50	33
2188	188.00	23/32	1 15/16	1 1/2	5	25	19
2189	274.00	29/16	2 23/16	2	5	25	28
<b>S.S. (Split Type) Conduit</b>							
2232	462.00	3 1/16	2 13/16	2 1/2	..	5	12
2233	570.00	3 1/2	3 1/4	3	..	5	15



### Flexsteel Rigid to Flexible Conduit Couplings

Larger sizes for one inch and over have heavy EZ Style Clamp.

Peephole is patented.

Sherardized finish.

Cat. No.	Per 100	I.D., In.		Size Conduit Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
		Open	Closed				
2190-S	\$37.00	15/16	23/32	1/2	10	100	16
2191-S	50.00	15/32	15/32	3/4	10	100	21
2192-EZ	63.00	127/64	1 1/8	1	10	50	20
2193-EZ	88.00	119/64	1 11/32	1 1/4	5	50	28
2194-EZ	130.00	23/64	1 11/16	1 1/2	5	25	19
2195-EZ	186.00	217/32	2 3/16	2	5	25	27
2196-EZ	310.00	33/32	2 11/16	2 1/2	5	25	43
2198-S	386.00	3 17/32	3 1/4	3	..	5	11

### No. 2175-EZ Flexsteel Duplex Box Connectors

For Armored Cable and Flexible Conduit



Peephole is patented. Sherardized finish. Furnished with bondnuts. Holds 14-2, 14-3, 12-2, 12-3, 4-1 armored cable; 3/8-inch flexible conduit.

Cat. No.	Per 100	I.D., In.		Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
		Open	Closed					
2175-EZ	\$17.00	41/64	1/2	19/32	1/2	20	100	21

### Flexsteel Reducing Nipples



No. 2220-B



No. 2223

These nipples have 3/8 or 1/2-inch female thread to fit various size standard connectors as desired for wiring armored lamppost to standard 1/8 or 3/8-inch key or keyless brass shell or porcelain sockets.

Sherardized finish.

Cat. No.	Per 100	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs.	
					Std. Pkg.	Lbs. Std. Pkg.
2220-B	\$23.00	3/8 to 1/8	50	500	20	20
2223	23.00	1/2 to 3/8	50	100	25	25



### No. 2220-EZ Flexsteel Lamp Cord Connectors

For Armored Cable and Lamp Cord

Sherardized finish. Holds 10-1, 8-1, armored cable; 12-1, 10-1, 8-1, armored lead cable; 18-2, 18-3, 16-2 plain lamp cord.

Cat. No.	Per 100	I.D., In.		Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
		Open	Closed					
2220-EZ	\$23.00	31/64	3/8	21/64	3/8	50	500	24

### Flexsteel Squeeze Type Lamp Cord Connectors

For Armored Cable and Flexible Conduit



Nos. 2220-S and 2222-S



No. 221

Special sizes for special services. Holds 12-1, 10-1 armored cable; 14-1, 12-1 armored lead cable.

Cat. No.	Per 100	I.D., In.		Wire Throat In.	Knock-out In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
		Open	Closed					
2220-S	\$23.00	29/64	3/8	11/32	3/8	50	500	28
Holds 10-1, 8-1 armored cable; 14-1, 12-1, 10-1, 8-1 armored lead cable; 18-2, 18-3, 16-2, 16-3 plain lamp cord; 3/16-inch flexible conduit.								
2222-S	\$23.00	35/64	7/16	11/32	3/8	50	500	23
Holds 14-1, 12-1, 10-1 armored cable; 14-1, 12-1 armored lead cable; 18-2 plain lamp cord.								
2221	\$23.00	29/64	5/16	3/32	1/8	50	500	16

### T & B Panel Connector Extensions



Can be used with any connector or other fitting having male thread. Makes any connector a panel connector.

Protected against corrosion with Tabolite Superior galvanizing.

To make 3/8-inch panel box connectors use Extension No. 1440 with connectors Nos. 300, 300-V, 240, 240-V, 248, 253, 253-V, 265, 266, 280 or 281.

To make 3/8-inch A panel box connectors use Extension No. 1440 with connectors Nos. 301, 260, 271 or 272.

To make 1/2-inch panel box connectors use Extension No. 1440 with connectors Nos. 302, 241, 254, 323, 267 or 268.

To make 3/4-inch panel box connectors use Extension No. 1441 with connectors Nos. 304, 255, 278, 325, 269, 270 or 279.

To make 1-inch panel box connectors use Extension No. 1442 with connectors Nos. 306, 256, 326, 264, 261 or 273.

To make 1 1/4-inch panel box connectors use Extension No. 1443 with connectors Nos. 308, 257, 262 or 274.

To make 1 1/2-inch panel box connectors use Extension No. 1444 with connectors Nos. 310, 258, 263 or 275.

To make 2-inch panel box connectors use Extension No. 1445 with connectors Nos. 312, 259 or 276.

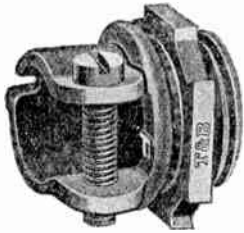
To make 2 1/2-inch panel box connectors use Extension No. 1446 with connectors No. 249 or 330.

Above combinations will hold cables and flexible conduits as shown under description of straight and angle squeeze connectors or straight and angle Tite-Bite connectors.

Cat. No.	Per 100	Size Inches	THREAD, INCHES		Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
			Male	Female			
1440	\$12.50	1/2	1/2	1/2	25	100	12
1441	15.00	3/4	3/4	3/4	100	100	16
1442	25.00	1	1	1	50	50	24
1443	35.00	1 1/4	1 1/4	1 1/4	50	50	32
1444	50.00	1 1/2	1 1/2	1 1/2	50	50	44
1445	75.00	2	2	2	25	25	64
1446	100.00	2 1/2	2 1/2	2 1/2	25	25	84

**T & B Squeeze Connectors**

For Flexible Steel Conduit and Armored Conductors



**Malleable Iron—Galvanized**

Locknuts are furnished with connectors without charge except Nos. 250 and 252.

Nos. 250 and 252 have 3/8-inch (pipe size) threaded ends to fit standard sockets.

Nos. 250 and 250A are made to hold 14D solid s.s., 12D solid s.s., 10D solid s.s., 8D solid s.s., 14D solid d.s., 8D solid d.s., 16E s.s., 18E s.s., 16E d.s. and 18E d.s. conductors.

Cat. No.	Per 100	Size In.	Knock-out In.	Approx. Opening In.	Approx. Closed In.	Inside Bush. In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
250	\$11.00	1/4	3/8	15/32	3/8	5/16	100	100	4
*250A	12.50	1/4	1/2	15/32	11/32	3/8	50	100	6

Nos. 252 and 252A hold 5/16-inch s.s. and d.s. conduit.

252	\$11.00	5/16	3/8	17/32	7/16	3/8	100	100	4
*252A	12.50	5/16	1/2	17/32	7/16	3/8	50	100	6

\*Have No. 400 adapter to fit standard 1/2-inch knockout.

Nos. 253 and 253V hold 14W2 s.s., 12W2 s.s., 14W3 s.s., 14W2 d.s., 12W2 d.s., 14W3 d.s., 6D solid s.s., 14E s.s., 14W2 L., 18EM s.s., 16EM d.s., 18EM d.s., 14E d.s.; 3/8-inch s.s., and d.s. conduit.

253	\$7.50	3/8	1/2	19/32	1/2	7/16	50	1000	8
†253V	7.50	3/8	1/2	19/32	1/2	7/16	50	1000	8

†Open-mouth visible type, for bushed cables.

No. 248 holds 10W2 s.s., 12W3 s.s., 10W3 s.s., 12W3 d.s.

248	\$7.50	3/8L	1/2	21/32	9/16	1/2	50	100	8
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No. 260 holds 8W2 s.s., 8W3 s.s., 10W2 d.s., 8W2 d.s., 10W3 d.s.

260	\$9.00	3/8A	1/2	13/16	11/16	9/16	50	100	12
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No. 254 holds 8W3 d.s., 1/2-inch s.s. and d.s. conduit.

254	\$9.00	1/2	1/2	15/16	13/16	19/32	50	100	13
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No. 278 holds armored conductors 6W2 s.s., 6W3 s.s.; 6W2 d.s.

278	\$15.00	3/4S	3/4	1	7/8	3/4	25	100	20
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No. 255 holds 4W2 s.s., 4W2 d.s., 6W3 d.s., 3/4-inch s.s. and d.s. conduit.

255	\$15.00	3/4	3/4	13/32	15/16	3/4	25	100	21
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No. 256 holds 1-inch s.s. conduit.

256	\$25.00	1	1	13/8	11/4	1	25	25	25
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No. 261 holds 1-inch d.s. conduit.

261	\$25.00	1	1	117/32	13/8	1	25	25	30
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No. 264 holds 4W3 s.s., 2W2 s.s., 4W3 d.s., 2W2 d.s., 6W2L, 6W3L, 4W2L, 4W3L.

264	\$25.00	1S	1	11/4	13/32	1	25	25	26
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No. 257 holds 1 1/4-inch s.s. conduit.

257	\$35.00	1 1/4	1 1/4	121/32	11 1/2	15/16	10	10	40
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No. 262 holds 1 1/4-inch d.s. conduit

262	\$35.00	1 1/4	1 1/4	113/16	15 5/8	15/16	10	10	45
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No. 258 holds 1 1/2-inch s.s. conduit.

258	\$50.00	1 1/2	1 1/2	17/8	11 1/16	1 1/2	10	10	65
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No. 263 holds 1 1/2-inch d.s. conduit.

263	\$50.00	1 1/2	1 1/2	21/32	113/16	1 1/2	10	10	70
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No. 259 holds 2-inch s.s. and d.s. conduit.

259	\$75.00	2	2	2 1/2	2 5/16	2	10	10	90
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No. 249 holds 2 1/2-inch s.s. conduit.

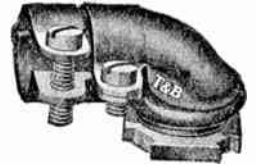
249	\$100.00	2 1/2	2 1/2	3	2 13/16	2 3/8	5	5	148
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No. 277 holds 3-inch s.s. conduit.

277	\$125.00	3	3	3 5/16	3 5/16	3	5	5	180
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**T & B 45° and 90° Squeeze Connectors**

**Malleable Iron—Galvanized For Flexible Steel Conduit and Armored Conductors**

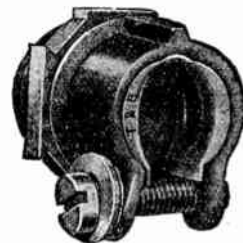


The removable cap eliminates fishing wires and enables one to make a quick and sure connection.

Locknuts are furnished.

Holds 14W2 s.s., 12W2 s.s., 14W3 s.s., 14W2 d.s., 12W2 d.s., 14W3 d.s., 6D solid s.s., 14E s.s., 14W2L, 18EM s.s., 16EM d.s., 18EM d.s., 14E d.s.; 3/8-inch s.s. conduit, 3/8-inch d.s. conduit; 12W3 s.s.

Cat. No.	Size Inches	Size Knock-out In.	Approx. Open In.	Approx. Closed In.	Inside Bush. In.	Unit Pkg.	Std. Pkg.	Wt. per 100 Lbs.	Price per 100
265	3/8-45°	1/2	5/8	1/2	9/16	50	100	14	\$16.00
266	3/8-90°	1/2	5/8	1/2	9/16	50	100	16	16.00
Holds 12W3 d.s., 10W2 s.s., 10W3 s.s.									
280	3/8-90° Large	1/2	11/16	17/32	9/16	50	100	14	\$16.00
Holds 8W2 s.s., 8W3 s.s., 10W2 d.s., 8W2 d.s., 10W3 d.s.									
272	3/8A-90°	1/2	13/16	11/16	9/16	50	100	15	\$20.00
Holds 8W3 d.s., 1/2-inch s.s. and d.s. conduit.									
267	1/2-45°	1/2	15/16	13/16	9/16	25	100	22	\$20.00
268	1/2-90°	1/2	15/16	13/16	9/16	25	100	22	20.00
Holds 6W2 s.s., 6W3 s.s., 6W2 d.s.									
279	3/4S-90°	3/4	1	7/8	3/4	25	50	25	\$40.00
Holds 4W2 s.s., 4W3 s.s., 4W2 d.s., 6W3 d.s.; 3/4-inch s.s. conduit.									
269	3/4-45°	3/4	1 1/8	1	25/32	25	50	22	\$40.00
270	3/4-90°	3/4	1 1/8	1	25/32	25	50	28	40.00
Holds 2W2 s.s., 2W2 d.s., 4W3 d.s.; 1-inch s.s.									
273	1-90°	1	1 13/32	1	...	25	50	50	\$60.00
Holds 1 1/4-inch s.s. conduit.									
274	1 1/4-90°	1 1/4	1 21/32	1 3/8	1 1/4	..	10	100	\$75.00
Holds 1 1/2-inch s.s. conduit.									
275	1 1/2-90°	1 1/2	1 7/8	1 5/8	1 1/2	..	10	165	\$100.00
Holds 2-inch s.s. and d.s. conduit.									
276	2-90°	2	2 1/2	2 1/4	2	..	5	250	\$150.00



**T & B Squeeze Type Connectors**

**For Non-Metallic Sheathed Cable and Flexible Tubing**

Each connector has an insert so held in place that it cannot be displaced; can be removed without taking out and replacing screw. Has threaded ends, with locknuts. Malleable iron connector, insert steel galvanized.

Cat. No.	Knock-out In.	MADE TO HOLD		Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
		With Insert	Insert Removed				
2005	1/2	14W2, 12W2	14W3, 12W3	50	100	8	\$8.50
2006	1/2	10W2	10W3	50	100	13	10.00
2007	3/4	10W2	10W3	25	100	15	16.00
2008	3/4	8W2	8W3	25	100	13	16.00
2009	1	6W2	6W3	..	50	20	30.00

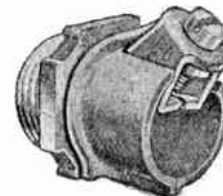


**No. 239 T & B 3/8-Inch Wedge Type Duplex Box Connectors**

Fits in a standard 1/2-inch k.o. and takes 14W2, 14W3, 12W2, 12W3.

Standard package, 100. Weight per 100, 15 pounds.

Price, No. 239 ..... per 100 \$10.00



**No. 3100 T & B Tite-Bite Box Connectors**

Has corrugated grip and holds non-metallic sheathed cable without cutting the fabric of the cable sheath.

Holds 14W2, 14W3, 12W2, 12W3.

Cat. No.	Per 100	Size In.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100
3100	\$7.50	3/8	50	1000	9



## T & B Straight Tite-Bite Connectors



No. 300 holds s.s., 14-2, 14-3, 12-2, 12-3, 10-2, 4-1, 6-1; d.s., 4-1, 6-1, 12-2, 12-3, 14-2, 14-3, s.s. lead 8-1, 14-2, 14-3; d.s. lead 6-1; flexible conduit s.s.  $\frac{3}{8}$  inch; d.s.  $\frac{3}{8}$  inch; lamp cords 14-2, 16-2, 16-3, 18-3, lamp cords reinforced s.s. 16-2, 18-2; d.s. 14-2, 16-2, 18-2 and other special sizes.

Cat. No.	Per 100	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Inside Bushed Diam. In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
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No. 300-V takes the same sizes of cables as the No. 300. Visible type for bushed cable.

**300-V \$7.50**  $\frac{3}{8}$   $\frac{1}{2}$  .656 .437  $\frac{1}{2}$  .. 1000 8.5  
No. 301 holds s.s. 10-3, 8-2, 8-3; d.s. 10-2, 10-3, 8-2; s.s. lead 14-2, 14-3, 12-2, 12-3, 10-2, 10-3; d.s. lead 14-2, 14-3, 12-2, 12-3, 10-2, 4-1 and others.

**301 \$9.00**  $\frac{3}{8}$   $\frac{1}{2}$  .781 .625  $\frac{17}{32}$  .. 100 16  
No. 302 holds s.s. 10-4, 8-3; d.s. 10-4, 8-3; s.s. lead 8-2, 8-3; d.s. lead 10-3, 12-4, 12-3, 10-2, 4-1; flexible conduit  $\frac{1}{2}$  inch, s.s. and  $\frac{1}{2}$  inch d.s.

**302 \$9.00**  $\frac{1}{2}$   $\frac{1}{2}$  .937 .750  $\frac{19}{32}$  .. 100 16  
No. 304 holds s.s. 8-3, 6-2, 6-3, 4-2, 4-3; d.s. 6-2, 6-3, 4-2, s.s. lead 6-2, 6-3; flexible conduit  $\frac{3}{4}$  inch s.s. and  $\frac{3}{4}$  inch d.s., 6-3 service entrance cable.

**304 \$15.00**  $\frac{3}{4}$   $\frac{3}{4}$  1.093 .906  $\frac{49}{64}$  .. 100 26  
No. 306 holds s.s. 4-4, 2-2; d.s. 4-4, 4-3, 2-2; s.s. lead 4-2, 4-3, flexible conduit 1 inch s.s. and 1 inch d.s.

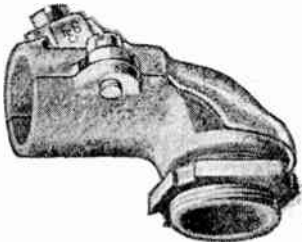
**306 \$25.00** 1 1 1.468 1.250 1 .. 25 36  
No. 308 holds flexible conduit  $1\frac{1}{4}$  inch s.s. and d.s.

**308 \$35.00**  $1\frac{1}{4}$   $1\frac{1}{4}$  1.750 1.562  $1\frac{1}{4}$  .. 10 60  
No. 310 holds flexible conduit  $1\frac{1}{2}$  inch s.s. and d.s.

**310 \$50.00**  $1\frac{1}{2}$   $1\frac{1}{2}$  2.031 1.812  $1\frac{1}{2}$  .. 10 90  
No. 312 holds flexible conduit 2 inch s.s. and d.s.

**312 \$75.00** 2 2 2.500 2.250 2 .. 10 130

## T & B Angle Tite-Bite Connectors



No. 321 holds s.s. 14-2, 14-3, 12-2, 12-3, 10-2, 4-1, 6-1; d.s. 4-1, 6-1, 12-2, 12-3, 14-2, 14-3; s.s. lead 8-1, 14-2, 14-3, d.s. lead 6-1; flexible conduit s.s.  $\frac{3}{8}$  inch; d.s.  $\frac{3}{8}$  inch; lamp cords 14-2, 16-2, 16-3, 18-3; lamp cords reinforced s.s. 16-2, 18-2; d.s. 14-2, 16-2, 18-2 and other special sizes.

Cat. No.	Per 100	Size In.	Size K.O. In.	Approx. Opening In.	Approx. Closed In.	Inside Bushed Diam. In.	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
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**321 \$16.00**  $\frac{3}{8}$   $\frac{1}{2}$  .656 .437  $\frac{1}{2}$  50 100 18  
No. 322 holds s.s. 10-3, 8-2, 8-3; d.s. 10-2, 10-3, 8-2; s.s. lead 14-2, 14-3, 12-2, 12-3, 10-2, 10-3; d.s. lead 14-2, 14-3, 12-2, 12-3, 10-2, 4-1; and others.

**322 \$20.00**  $\frac{3}{8}$ A  $\frac{1}{2}$  .781 .625  $\frac{17}{32}$  50 100 27

No. 323 holds s.s. 10-4, 8-3; d.s. 10-4, 8-3; s.s. lead 8-2, 8-3; d.s. lead 10-3, 12-4, 12-3, 10-2, 4-1; flexible conduit  $\frac{1}{2}$  inch s.s. and  $\frac{1}{2}$  inch d.s.

**323 \$20.00**  $\frac{1}{2}$   $\frac{1}{2}$  .937 .750  $\frac{19}{32}$  50 100 29

No. 325 holds s.s. 8-3, 6-2, 6-3, 4-2, 4-3; d.s. 6-2, 6-3, 4-2, s.s. lead 6-2, 6-3; flexible conduit  $\frac{3}{4}$  inch s.s. and  $\frac{3}{4}$  inch d.s., 6-3 service entrance cable.

**325 \$40.00**  $\frac{3}{4}$   $\frac{3}{4}$  1.093 .906  $\frac{49}{64}$  50 50 34

No. 326 holds s.s. 4-4, 2-2; d.s. 4-4, 4-3, 2-2; s.s. lead 4-2, 4-3; flexible conduit 1 inch s.s. and 1 inch d.s.

**326 \$60.00** 1 1 1.468 1.250 1 25 25 60

No. 327 holds flexible conduit  $1\frac{1}{4}$  inch s.s. and d.s.

**327 75.00**  $1\frac{1}{4}$   $1\frac{1}{4}$  1.750 1.562  $1\frac{1}{4}$  10 10 110

No. 330 holds flexible conduit  $2\frac{1}{2}$  inch s.s. and d.s.

**330 \$225.00**  $2\frac{1}{2}$   $2\frac{1}{2}$  ..  $2\frac{1}{2}$  5 5 500

No. 331 holds flexible conduit 3 inch s.s. and d.s.

**331 \$262.50** 3 3 .. 3 5 5 650

## T & B Squeeze Combination Couplings

Malleable Iron—Galvanized



For connecting flexible and rigid metallic conduits, also for connecting flexible metallic conduit to outlet boxes by means of Chase nipple. One-piece malleable iron, galvanized. Cannot pull apart.

Cat. No.	Per 100	Size In.	Made to Hold	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
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## T & B Slip-In Connectors

For machine and appliance installations as well as house wiring.

The Tite-Bite grip has teeth spaced to just fit the convolutions of the cable. The design of the grip prevents the teeth from entering between or spreading the convolutions, and the screw cannot touch the armor.



### With Tite-Bite Grip

Cat. No.	Per 100	Size In.	Made to Hold	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
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### Set Screw Type

Cat. No.	Per 100	Size In.	Made to Hold	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
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## T & B Inclined Set Screw Connectors

The screw is on the right-hand side, making it easy to tighten.

Nos. 240 and 240-V are made to hold Nos. 14W2, 14W3, 12W2, 12W3, 10W2, 10W3,  $\frac{3}{8}$ -inch S.S. conduit,  $\frac{3}{8}$ -inch D.S. conduit.

No. 241 is made to hold Nos. 8W2, 8W3, 10W2L, 8W2L, 10W3L,  $\frac{1}{2}$ -inch S.S. conduit,  $\frac{1}{2}$ -inch D.S. conduit.



Cat. No.	Per 100	Size Inches	Size Knockout Inches	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
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\*Open-mouth, visible type, for bushed cables.

## T & B 2020 Type Connectors

For 14W2, 14W3, 12W2, 12W3, 10W2, and 10W3 non-metallic sheathed cable, also  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and  $\frac{3}{8}$ -inch flexible fibre tubing.

Can be installed outside or inside box. Simply snap connector into knockout, insert cable or tubing and tighten down screw. Has no rough edges or projections to cut into fibre armor. At same time they protect armor from rough edges of knockout opening. Present long rounded bearing surfaces to armor, doing away with possibility of injury to cable. Present nicely rounded shoulders to conductors as they are bent up to the outlet.



Cat. No.	Per 100	Size Inches	Knockout Inches	Unit Pkg.	Std. Pkg.	Wt. Lbs. per 100
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**National Ovalflex A.B.C. Flat Armored Bushed Cable**

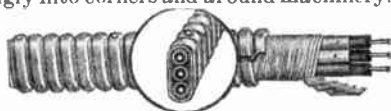


2-Conductor

A safely bushed and insulated flat armored cable for underplaster installations and alterations.

Its neat appearance recommends it for exposed surface wiring, and easy bending edgewise or flatwise makes it suitable for fitting snugly into corners and around machinery.

Anti-Short dependable bushes cut end of steel armor, preventing damage to wires.



3-Conductor

Regularly made with solid conductors and N. E. Code insulation, but can be furnished with stranded conductors or special insulation.

Size B. & S. Gauge...	14/2	12/2	10/2	14/3	12/3
Per 1000 Feet.....	\$63.00	92.00	124.00	90.00	122.00
Feet per Coil.....	250	125	125	125	125
Wt., Lbs., 1000 Ft...	248	280	352	348	378

**Ovalflex Fittings**



No.	Description	Per 100
2176A	Set Screw Connector for 14-2 and 12-2 Ovalflex to 1/2-Inch Threaded Fittings or Boxes with 1/2-Inch K. O.'s.....	\$12.00
2180	Same as 2176A but Squeeze Type for 14-3 and 12-3 Ovalflex.....	12.00
9050S	Squeeze Connector for 14-2 and 12-2 Ovalflex to 1/2-Inch Threaded Fittings or Boxes with 1/2-Inch K. O.'s.....	6.98
2154	Set Screw Connector for 14-2, 12-2 and 10-2 Ovalflex to Boxes Having 1/2-Inch and 3/8-Inch K. O.'s and Cable Clamps.....	12.00
412	Connector for 14-2, 12-2 and 10-2 Ovalflex to Metal Molding Devices.....	20.00
413	Same as 412 but for 14-3 and 12-3 Ovalflex.....	24.00
2155	90° Box Connector; Takes 14-2 and 12-2 Ovalflex into 1/2-Inch Conduit K. O.'s.....	28.00
2156	Same as 2155 but for 14-3, 12-3 and 10-2.....	28.00
2157	1-Screw Folding Strap for 14-2, 12-2 and 10-2.....	1.00
2159	Toggle Fastener with Wire Loop.....	2.40
2160	Strap Fastener for 14-2 and 12-2 Ovalflex....	.80
2161	Strap Fastener for 14-3 and 12-3 Ovalflex....	1.00
2662	Outlet Box, 4x3/4 Inches Outside, 6 Oval K. O.'s in Side; 5/2-Inch Conduit K. O.'s in Bottom.....	16.80
2665	Same as 2662 but with 3/8-Inch Fixture Stud....	22.80
2663	Extension or Plaster Ring, 4x3/4 Inches Outside with 6 Oval K.O.'s for Connecting Ovalflex to Boxes Buried in Walls and Ceilings.....	16.50
2862	Outlet Box, 3 1/4 x 3 1/4 Inches Outside, 4 Oval K.O.'s in Side; One 1/2-Inch Conduit K.O. in Bottom.....	15.60
2865	Same as 2862, but with 3/8-Inch Fixture Stud.....	21.80
*4170S1	Sectional Switch Box, 4x1 1/4 x 1 1/2 Inches Deep; 1 Oval K.O. in Each End; 2 Oval K.O.'s in One Side; 1 1/2-Inch and 1 3/8 K.O. on Opposite Side; 1/2-Inch K.O. in Bottom. Sherardized. Takes Connectors 2179 and 2181..	31.50
*4172S1	Spacer (Box Less Sides) for Forming Gangs....	27.90
2179	Special Box Connector to Take 14-2, 12-2 and 10-2 Ovalflex into Oval K.O.'S.....	7.00
2181	Same as 2179, but for 14-3 and 12-3 Ovalflex....	7.00
2150	Adapter Bushing for Use with Connectors 2179 and 2181 in 1/2-Inch Conduit K.O.'s....	1.20

\*These boxes and spacers can be equipped with the usual supporting ears but because of the length of box, 4 inches, an ordinary switch plate will not cover the ears.

**Flextube Non-metallic Flexible Conduit**

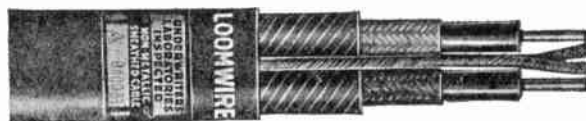


Made from an especially prepared stiff fiber cord interwoven with a tough yarn. The result is a seamless tube with a smooth, hard, canvas-like roller-bearing interior which affords the best obtainable fishing surface. This interwoven insulating tubing is then treated with a superior moisture and flame resisting compound, is further protected by a strong, tough braiding which is also compounded.

Regularly inspected and labeled by the Underwriters' Laboratories.

Inside Diam., In.	Feet to Coil	Wt. Lbs. per 1000 Ft.	Price per Ft.	Inside Diam., In.	Feet to Coil	Wt. Lbs. per 1000 Ft.	Price per Ft.
7/32	250	42	\$.03	1	100	160	\$.21
1/4	250	45	.04	1 1/4	100	205	.23
3/8	250	61	.06	1 1/2	100	245	.35
1/2	200	83	.08	1 3/4	50	425	.37
5/8	200	102	.10	2	50	460	.42
3/4	150	115	.12	2 1/4	50	700	.44
				2 1/2	50	740	....

**LoomWire Non-Metallic Sheathed Cable**



14/2 Duplex LoomWire					
Size of Cable	Feet per Coil	WEIGHT, POUNDS Per 1000 Feet	Size of Cable	Feet per Coil	WEIGHT, POUNDS Per 1000 Feet
14/2	250	104	14/3	200	165
12/2	200	125	12/3	200	200
10/2	200	155	10/3	200	250
8/2	125	240	8/3	125	400

**LoomWire Fittings**



Cat. No.	Description	Weight Std. Pounds Pkg.	Weight Std. Pounds Pkg.
9000	Clip for Open Wiring 14/2 and 12/2.....	500	8 1/2
9011	Strap for Concealed Wiring 14/2 and 12/2.....	1000	7
9012	Strap for Concealed Wiring 14/3 and 12/3.....	1000	7 3/4

**Connectors**

A 1/2-inch connector for use with duplex or triplex LoomWire. Take out bushing or shim to use triplex LoomWire.

Cat. No.	With Shim Holds	Without Shim Holds	K.O. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.
9050S	14/2, 12/2	14/3, 12/3	1/2	500	43 3/4
9052S	10/2	10/3	1/2	100	12 1/2
9054S	8/2	8/3	3/4	100	17 1/2
9056S	6/2	6/3	1	100	29 1/2

Prices upon application.

**No. 2163-EZ Box Connectors**





















































For 14/2, 12/2, 14/3 and 12/3 loomwire. Standard package quantity, 1000. Weight per 1000, 78 pounds.

No. 2163-EZ.....per 100 \$8.80

## National Metal Molding and Fittings

## National Metal Molding and Fittings

CAT. NO.	DESCRIPTION	UNIT PKG.	STD. PKG.	EACH
333	 NATIONAL METAL MOLDING	100 FT.	1000 FT.	\$.12 Ft.
336	 90° FLAT ELBDW	5	100	.15
437	 45° FLAT ELBDW	5	100	.20
337	 EXTERNAL ELBDW	5	100	.15
338	 INTERNAL ELBDW	5	100	.15
337-B	 EXTERNAL ELBOW COVER	30	30	.10
338-B	 INTERNAL ELBOW COVER	30	30	.10
319	 TAKE-OFF TEE	5	100	.20
376	 CORNER BOX	5	50	.44
348	 2 1/2" DIA. DROP CORD ROSETTE	5	50	.35
348-X	 3" DIA. DROP CORD ROSETTE	5	50	.35
430	 2 1/2" FIXTURE ROSETTE	5	50	.65
400	 2 1/2" DIA. RECEPTACLE BASE	5	50	.70
400-X	 3" DIA. RECEPTACLE BASE	5	50	.70
356-X	 3" DIA. KEYLESS RECEPTACLE	5	50	.80
357	 2 1/2" DIA. KEYLESS RECEPTACLE	5	50	.60
360	 2 1/2" DIA. PLUG RECEPTACLE	5	50	.80
360-X	 3" DIA. PLUG RECEPTACLE	5	50	.95
340-X	 TERMINAL BLOCK	10	50	.20
339-X	 2 1/2" COMBINATION PLATE	5	100	.15
343	 2 1/2" DIA. 5 AMP DEVICE BOX	5	50	.40
342	 3" DIA. 10 AMP DEVICE BOX	5	50	.40
361	 4 3/4" CANOPY BASE PLATE AND COVER	5	50	.60
362	 4 3/4" CANOPY BASE PLATE AND COVER	5	50	.60
365	 4 1/2" DIA. FIXTURE BOX	5	50	.60

CAT. NO.	DESCRIPTION	UNIT PKG.	STD. PKG.	EACH
365-A	 4 1/2" DIA. FIXTURE BOX WITH 3/8" STUD	5	50	\$.70
365-X	 4" COMBINATION PLATE	5	100	.15
366	 6 1/2" DIA. FIXTURE BOX	5	20	.90
367	 6 1/2" SPLIT CANOPY BASE AND COVER	5	20	1.00
438	 1-GANG SEMI-FLUSH SWITCH BOX	1	10	1.00
439-X	 1-GANG SURFACE SWITCH BOX-1 1/2" DEEP	1	10	.60
440-X	 2-GANG SURFACE SWITCH BOX-1" DEEP	1	10	1.05
439-D	 1-GANG SURFACE SWITCH BOX-1 1/8" DEEP	1	10	.70
440-D	 2-GANG SURFACE SWITCH BOX-1 1/8" DEEP	1	10	1.20
439	 1-GANG SURFACE SWITCH BOX-1 1/8" DEEP	1	10	.70
440	 2-GANG SURFACE SWITCH BOX-1 1/8" DEEP	1	10	1.20
441	 1-GANG SWITCH BOX ADAPTER	1	10	.65
442	 2-GANG SWITCH BOX ADAPTER	1	10	1.20
2180	 1/2" STRAIGHT BOX CONNECTOR	10	100	.20
315	 1/2" CONDUIT TO METAL MOLDING CONNECTOR	5	20	.35
316	 90° 1/2" CONDUIT COUPLING	5	20	.30
317	 90° 1/2" BOX CONNECTOR	5	20	.30
369-X	 OPEN WORK COUPLING	5	20	.40
406	 COMBINATION CONNECTOR	5	20	.25
344-X	 COUPLING	50	500	.02
345	 SINGLE STRAP	50	500	.02
414-S	 CONNECTOR FOR ROUND ARMORED CABLE	10	10	.25
323	 JOINT CAP	50	500	.02
355	 GROUND CLAMP	5	100	.10
422-X	 333 MOLDING SHEAR	1	1	8.00



**3-Wire Ovalduct**



Ovalduct is a flat raceway made for extension work on walls and ceilings or fireproof buildings. It is a rigid tube formed from sheet steel.

In making wiring alterations with ordinary materials much time is lost channelling deep grooves in tile, concrete, or brick surfaces to receive the raceway; and cutting tile floor arches seriously affects their strength. Ovalduct is installed without grooving or channelling the underlying concrete, tile or brick. In new work it is fastened in place and plastered over; in old work, it is laid in a groove cut only in the plaster, and covered by plaster patching.

The Ovalduct line includes elbows, couplings, boxes and connectors which will take care of any wiring requirement and permit it to be installed in conjunction with any other raceway or wiring system.

Ovalduct is furnished in 10-foot lengths and has an oval cross section  $1\frac{1}{2}$ -inch high and  $3\frac{1}{2}$ -inch wide.

Standard package, 100 feet.

Weight per 100 feet, 35 pounds.

Per 100 Feet..... \$9.00

**Fittings for 3-Wire Ovalduct**

**Squeeze Type Couplings**



For Ovalduct and elbows. Length,  $1\frac{1}{4}$  inches.

Cat. No.	Per 100	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.
2133	\$7.30	50	200	13

**90° Internal Elbows**



Radius  $1\frac{1}{4}$  inches. Offset, back to end, approximately  $2\frac{1}{2}$  inches. Fits coupling 2133 and connectors 2156, 401 and 2181.

2134	\$18.00	25	100	16
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**45° Flat Elbows**



Radius 3 inches. Length approximately  $3\frac{1}{2}$  inches. Fits coupling 2133 and connectors 2156, 401, 2181.

2135	\$13.20	25	100	12
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**Wire Toggle Fasteners**



2159	\$1.45	50	500	12
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**Strap Fasteners**



2161	\$.60	50	500	4
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**Box Connectors with 1/2-Inch Locknut**



Takes Ovalduct into conduit or  $1\frac{1}{2}$ -inch knockouts.

Cat. No.	Per 100	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.
2180	\$7.20	10	20	3

**Outlet Boxes**



Size,  $3\frac{1}{4} \times 3\frac{1}{4}$  inches. Has 4 oval knockouts in side; one  $1\frac{1}{2}$ -inch conduit knockout in bottom.

2862	\$9.35	5	50	18
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Same as 2862 but has  $3\frac{1}{2}$ -inch fixture stud.

2865	\$13.10	5	50	21
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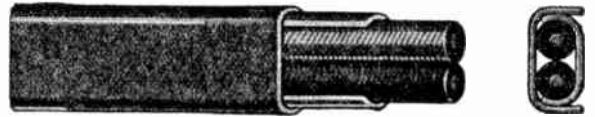
**90° Box Connectors**



Takes Ovalduct into conduit or  $1\frac{1}{2}$ -inch knockouts.

2156	\$16.80	10	100	25
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**No. 111 Metal Xtensionduct**



A simple method of circuit extension in place of cords. Finished in neutral brown mahogany to match oak, birch, walnut or mahogany woodwork.

For extension wiring from existing convenience outlet. Takes two No. 14 wires. Furnished in 5-foot lengths.

No. 111, Unit Package (100 Feet).....per 100 feet \$8.30  
No. 111, Standard Package (1000 Feet)...per 100 feet 7.50

**No. 111 Metal Xtensionduct Fittings**

**Flat Elbow Complete**

For use at left or right bends in Xtensionduct; 90°. Supplied with base.

Cat. No.	Per 100		Unit Pkg.	Std. Pkg.
	Unit Pkg.	Std. Pkg.		
136-C	\$15.00	\$13.50	5	50

**Flat Elbow Cap**

For use at left or right bends in Xtensionduct; 90°.

136	\$7.80	\$7.00	5	50
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**Flat Elbow Base**

Base for No. 136.

136-B	\$7.20	\$6.50	5	50
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**External Elbow Cap**

For use at outside corners; 90°.

137	\$7.80	\$7.00	5	50
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**Internal Elbow Cap**

For use at inside corners; 90°.

138	\$7.80	\$7.00	5	50
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**Baseboard Offset Elbow**

For runs from outlet on baseboard to right angle runs on plaster just above baseboard. Supplied with base.

176	\$15.00	\$13.50	5	50
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**Low Potential Fibre Bushing**

Used where Xtensionduct is used without fittings for covering bell or signal wire.

100	\$2.90	\$2.60	10	100
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**Coupling**

For connecting base. Capping may overlap joint. (If coupling is not used capping of Xtensionduct must overlap joint in base to provide electrical continuity.)

144	\$4.30	\$3.90	10	100
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**Box Extension Adapter**

Accommodates extensions from outlets requiring other than standard convenience receptacles. May be used with any standard wiring device including the P & S Despard Line.

Cat. No.	Per 100		Unit Pkg.	Std. Pkg.
	Unit Pkg.	Std. Pkg.		
139	\$45.10	\$40.60	10	100

**Box Extension Device**

Accommodates extension from existing outlet. Includes plate and receptacle.

141	\$68.80	\$61.90	10	100
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**Duplex Receptacle Unit**

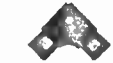
Duplex receptacle and bakelite housing for surface mounting.

150	\$68.80	\$61.90	10	100
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**Cutting and Notching Gauge**

Mitre gauge; assures close and neat fitting joints and corners.

Cat. No.	Each		Unit Pkg.	Std. Pkg.
	Each	Each		
122	\$1.40	\$1.40	1	1



## No. 500 Wiremold



Capacity Single Conductor		Capacity Twisted Pair
1—No. 8	*2—No. 14	1—No. 16
2—No. 10	6—No. 16	1—No. 18
2—No. 12	6—No. 18	1—No. 19

\*No. 500 Wiremold is designed for installations requiring circuits of two and short runs of three wires.

Furnished in 10-foot lengths.

Weight per 1000 feet, 320 pounds.

No. 500.....per foot \$.12

## No. 700 Wiremold



Capacity Single Conductor		Capacity Twisted Pair
1—No. 6	4—No. 14	2—No. 16
2—No. 8	10—No. 16	2—No. 18
3—No. 10	10—No. 18	2—No. 19
	*4—No. 12	

\*No. 700 Wiremold is designed for installations requiring circuits of four wires. Where local approval can be obtained four No. 12 wires may be fished in straight runs if a pull box is used every 30 feet.

Furnished in 10-foot lengths.

Weight per 1000 feet, 360 pounds.

No. 700.....per foot \$.14

## No. 500 Series Wiremold Fittings

Pack-Quan- Per	No. 500	Pack-Quan- Per	No. 523
age tity 100		age tity 100	
	BUSHING Std. 200 \$2.00 Unit 50 3.00	FIXTURE ROSETTE Std. 50 \$70.60 Unit 5 80.00	
	STRAP Std. 500 \$1.10 Unit 50 2.00	COMBINATION ROSETTE Std. 50 \$54.10 Unit 5 62.00	
	CONNECTION COVER Std. 200 \$1.20 Unit 50 2.00	RECEPTACLE BASE Std. 50 \$70.90 Unit 5 78.00	
	NON SPLICE TYPE 90° FLAT ELBOW Std. 100 \$14.00 Unit 5 16.00	KEYLESS RECEPTACLE Std. 50 \$82.00 Unit 5 90.00	
	NON SPLICE TYPE 45° FLAT ELBOW Std. 50 \$16.50 Unit 5 20.00	PLUG RECEPTACLE Std. 50 \$21.00 Unit 5 24.00	
	TEE Std. 100 \$21.00 Unit 5 24.00	2 1/2" OUTLET BOX Std. 20 \$40.00 Unit 5 46.00	
	CROSS Std. 50 \$34.30 Unit 5 38.00	3" OUTLET BOX Std. 20 \$40.00 Unit 5 46.00	
	INTERNAL ELBOW Std. 100 \$17.70 Unit 5 22.00	OPEN WORK COUPLING Std. 20 \$34.30 Unit 5 38.00	
	EXTERNAL ELBOW Std. 100 \$15.30 Unit 5 18.00	MOULDING CONNECTOR Std. 100 \$3.50 Unit 4 4.00	
	CORNER BOX Std. 50 \$42.40 Unit 5 48.00		
	ROSETTE Std. 50 \$32.00 Unit 5 36.00		

## No. 5700 and 700 Series Wiremold

### Fittings

Fittings listed below having catalogue numbers beginning with 57 are for use with either No. 500 or No. 700 Wiremold.

Use No. 500 series elbows with No. 500 Wiremold. They cost less and make a neater job.

Pack-Quan- Per	No. 5701	Pack-Quan- Per	No. 5721
age tity 100		age tity 100	
	COUPLING Std. 200 \$1.60 Unit 50 2.00	ROUND UTILITY BOX Std. 100 \$32.00 Unit 5 36.00	
	BUSHING Std. 200 \$2.00 Unit 50 3.00	COMBINATION ROSETTE Std. 50 \$58.80 Unit 5 68.00	
	CLIP Std. 500 \$2.30 Unit 50 3.00	RECEPTACLE BASE Std. 100 \$70.90 Unit 5 78.00	
	ONE OR TWO HOLE STRAP Std. 500 \$1.90 Unit 50 2.00	KEYLESS RECEPTACLE Std. 100 \$82.00 Unit 5 90.00	
	CONNECTION COVER Std. 200 \$1.20 Unit 50 2.00	PLUG RECEPTACLE Std. 100 \$82.00 Unit 5 90.00	
	MULTIPLE STRAP Std. 200 \$4.70 Unit 50 5.00	UTILITY BOX Std. 100 \$43.50 Unit 10 50.00	
	FIXTURE HOOK Std. 100 \$17.20 Unit 10 19.00	CONDUIT TYPE UTILITY BOX Std. 100 \$43.50 Unit 10 50.00	
	GROUND CLAMP Std. 100 \$8.20 Unit 5 9.00	CONTACT BLOCK Std. 100 \$18.30 Unit 20 20.00	
	90° FLAT ELBOW Std. 100 \$17.20 Unit 10 19.00	COVER FOR M5733-32 Std. 100 \$11.50 Unit 5 13.00	
	45° FLAT ELBOW Std. 50 \$18.80 Unit 5 21.00	2 1/2" OUTLET BOX Std. 100 \$38.90 Unit 5 44.00	
	TEE Std. 100 \$26.00 Unit 5 28.00	3" OUTLET BOX Std. 100 \$38.90 Unit 5 44.00	
	INTERNAL ELBOW Std. 100 \$20.60 Unit 10 23.00	5734 CLOSED EXTENSION BOX Std. 20 \$58.80 Unit 5 68.00	
	5717-A ELBOW PULL BOX Std. 50 \$45.70 Unit 10 50.00	5735 DISTRIBUTION BOX Std. 20 \$77.70 Unit 1 86.00	
	5718 EXTERNAL ELBOW Std. 100 \$18.30 Unit 10 20.00	BLANK COVER FOR M5737-38-39-352 Std. 100 \$13.70 Unit 5 15.00	
	5719 CORNER BOX Std. 50 \$47.10 Unit 5 54.00	4 1/2" EXTENSION BOX Std. 50 \$57.20 Unit 5 64.00	
	5720 NARROW FITTING Std. 50 \$48.00 Unit 5 54.00	4 1/2" FIXTURE BOX Std. 50 \$54.90 Unit 5 60.00	
	5720-A SNOW CASE OUTLET Std. 50 \$51.80 Unit 5 58.00		

No. 5700 Series Wiremold Fittings

Continued

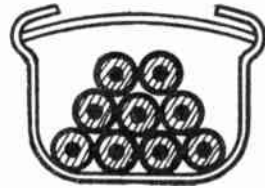
The fittings listed below are for use with either No. 500 or No. 700 Wiremold.

Use No. 500 series elbows with No. 500 Wiremold. They cost less and make a neater job.

	<b>No. 5738-D</b> Std. 20 \$157.70 Unit 1 174.00
	<b>No. 5738-E</b> Std. 20 \$68.60 Unit 1 76.00
	<b>No. 5739</b> Std. 20 \$80.00 Unit 5 86.00
	<b>No. 5739-A</b> Std. 20 \$84.70 Unit 5 94.00
	<b>No. 5740</b> Std. 50 \$91.50 Unit 1 100.00
	<b>No. 5741</b> Std. 20 \$68.60 Unit 1 76.00
	<b>No. 5742</b> Std. 50 \$63.50 Unit 5 70.00
	<b>No. 5742-A</b> Std. 20 \$81.80 Unit 5 90.00
	<b>No. 5743</b> Std. 50 \$94.00 Unit 5 100.00
	<b>No. 5744</b> Std. 20 \$89.40 Unit 1 102.00 Can also be furnished 2 and 3-gang.
	<b>No. 5745</b> Std. 20 \$66.30 Unit 1 74.00
	<b>No. 5747</b> Std. 20 \$68.60 Unit 1 76.00 Can also be furnished 2 and 3-gang.
	<b>No. 5748</b> Std. 20 \$73.20 Unit 1 80.00 Can also be furnished 2 and 3-gang.
	<b>No. 5748-S</b> Std. 20 \$64.00 Unit 1 70.00
	<b>No. 5749</b> Std. 20 \$105.90 Unit 1 120.00

	<b>No. 5750</b> Std. 20 \$110.60 Unit 1 126.00
	<b>No. 5751</b> Std. 20 \$64.00 Unit 1 70.00 Can also be furnished 2 and 3-gang.
	<b>No. 5760</b> Std. 20 \$98.80 Unit 1 112.00
	<b>No. 5761</b> Std. 20 \$60.00 Unit 1 66.00
	<b>No. 5762</b> Std. 20 \$32.00 Unit 5 36.00
	<b>No. 5780</b> Std. 50 \$13.70 Unit 5 15.00
	<b>No. 5781</b> Std. 50 \$25.20 Unit 5 28.00
	<b>No. 5781-A</b> Std. 50 \$29.80 Unit 5 34.00
	<b>No. 5782</b> Std. 50 \$32.00 Unit 5 36.00
	<b>No. 5782-A</b> Std. 50 \$32.00 Unit 5 36.00
	<b>No. 5783</b> Std. 20 \$32.00 Unit 5 36.00
	<b>No. 5784</b> Std. 20 \$32.00 Unit 5 36.00
	<b>No. 5785</b> Std. 50 \$22.90 Unit 5 26.00
	<b>No. 5786</b> Std. 50 \$47.10 Unit 5 54.00
	<b>No. 5787</b> Std. 10 \$26.00 Unit .. 32.00
	<b>No. 5788</b> Std. 20 \$34.30 Unit 5 38.00
	<b>No. 5790</b> Std. 50 \$5.20 Unit .. 6.00
	<b>No. 600</b> Each Std. 10 \$3.80 Unit 1 4.00
	<b>No. 600-L</b> Per 100 Std. 10 \$35.00 Unit .. 40.00

No. 1000 Wiremold



Capacity Single Conductor		Capacity Twisted Pair	
*3—No. 6	9—No. 14	6—No. 16	6—No. 16
6—No. 8	20—No. 16	7—No. 18	7—No. 18
7—No. 10	20—No. 18	7—No. 19	7—No. 19
	9—No. 12		

\*No. 1000 is designed for main and sub-feeders and various wire groupings such as: telephone, radio, signal and call systems. Where local approval can be obtained three No. 6 wires may be fished in straight runs if a pull box is used every-30 feet.

Furnished in 10-foot lengths.

Weight per 1000 feet, 800 pounds.

No. 1000 ..... per foot \$.26

No. 1000 Series Wiremold Fittings

Pack-Quan- Per age tity 100		Pack-Quan- Per age tity 100	
	<b>No. 1001</b> Std. 100 \$4.20 Less .. 6.00		<b>No. 1020-B</b> Std. 10 \$50.00 Less .. 58.00
	<b>No. 1002</b> Std. 200 \$2.50 Less .. 4.00		<b>No. 1028</b> Std. 5 \$74.00 Less .. 84.00
	<b>No. 1003</b> Std. 100 \$3.20 Less .. 6.00		<b>No. 1035</b> Std. 10 \$118.00 Less .. 132.00
	<b>No. 1004</b> Std. 200 \$4.30 Less .. 8.00		<b>No. 1039</b> Std. 10 \$100.00 Less .. 110.00
	<b>No. 1005</b> Std. 200 \$4.30 Less .. 8.00		<b>No. 1048</b> Std. 5 \$110.00 Less .. 120.00
	<b>No. 1008</b> Std. 10 \$108.00 Less .. 120.00		<b>No. 1082</b> Std. 10 \$60.00 Less .. 70.00
	<b>No. 1008-A</b> Std. 10 \$25.00 Less .. 28.00		<b>No. 1085</b> Std. 10 \$32.00 Less .. 36.00
	<b>No. 1009</b> Std. 100 \$15.60 Less .. 20.00		<b>No. 1086</b> Std. 10 \$74.00 Less .. 82.00
	<b>No. 1011</b> Std. 10 \$42.00 Less .. 46.00		<b>No. 1087</b> Std. 5 \$30.00 Less .. 34.00
	<b>No. 1013</b> Std. 10 \$40.00 Less .. 46.00		<b>No. 1089</b> Std. 10 \$15.00 Less .. 16.00
	<b>No. 1017</b> Std. 10 \$44.00 Less .. 48.00		<b>No. 1000-F</b> Per 18' Section Std. 6 \$1.90 Less .. 2.10
	<b>No. 1018</b> Std. 10 \$38.00 Less .. 42.00		
	<b>No. 1020</b> Std. 10 \$82.00 Less .. 90.00		
	<b>No. 1020-A</b> Std. 10 \$150.00 Less .. 170.00		



## 3/4-Inch Octagon Outlet Boxes



No. 2900



No. 2908



No. 2910

Black enameled or sherardized finish.

Standard package quantity is 100.

Uni- versal	CAT. No. National	Black Enamel Per 100	Sherard- ized Per 100	Depth Inside Inches	Knockouts		Wt. Lbs. per 100
					Bottom	Sides	
24151	2900	\$10.50	\$12.00	1 1/2	1-1/2"	4-1/2"	46
24151	*2900-FS	15.00	16.50	1 1/2	None	4-1/2"	53
24151	2901	11.50	13.00	1 1/2	1-1/2"	4-3/4"	46
24155	2908	12.00	13.50	1 1/2	3-1/2"	4-1/2"	46
24155	2910	12.50	14.00	1 1/2	1-Loom	4-Loom	46
24155	†2910-L2	14.00	15.50	1 1/2	1-1/2"	4-1/2"	56
24155	†2910-L2-FS	19.00	21.00	1 1/2	8-Loom	4-Loom	53

\*FS designates fixture stud installed.

†L2 designates 2-CL65 loom clamps installed.

In any of above boxes not so listed, 3/8-inch fixture stud can be furnished for \$8.10 per 100 extra. Specify studs when ordering.

Knockouts designated 1/2-inch are for 1/2-inch conduit.

## 3/4-Inch Octagon Extension Rings



No. 2905

Black enameled or sherardized finish.  
Equipped with cover lugs.  
Standard package, 100.

Uni- versal	CAT. No. National	Black Enamel Per 100	Sherard- ized Per 100	Depth Inches	Knock- outs in Sides
25151	2904	\$22.00	\$24.00	1 1/2	4-1/2"
25151	2905	22.00	24.00	1 1/2	4-3/4"

## 3/4, 3 3/8, and 3 1/2-Inch Shallow Ceiling Plates

Take 3/4-Inch Standard Covers



No. 2842



No. 2829

Black enameled or sherardized finish.

Standard package quantity is 100.

Uni- versal	CAT. No. National	Black Enamel Per 100	Sherard- ized Per 100	Diam. and Depth In- side, Inches	Knock- outs	Wt. Lbs. per 100
26121	†2842	.....	\$12.00	3 1/4 x 3/4	2-1/2"	38
26125	†2845	\$10.50	12.00	3 1/4 x 3/4	1-1/2"	38
36113	†2835	9.50	10.50	3 1/2 x 1 1/2	8-Loom	38
36114	2829	7.50	9.00	3 1/2 x 1 1/2	1-1/2"	34
26716	2850	9.50	11.00	3 3/8" Flat Plate	8-Loom	20
36124	2841	9.50	11.00	3 1/2 x 3/4	1-1/2"	40
36123	†2847	11.50	13.00	3 1/2 x 3/4	8-Loom	40

†Equipped with cover lugs.

## Covers for 3/4-Inch Octagon and Round Outlet Boxes

Black enameled or sherardized finish.

Standard package quantity is 100.

No. 24C2



Raised, closed.

No. 24C1



Flat, closed.

Uni- versal	CAT. No. National	Black Enamel Per 100	Sherard- ized Per 100	Lbs. per 100	Uni- versal	CAT. No. National	Black Enamel Per 100	Sherard- ized Per 100	Lbs. per 100
24C2	28A	\$5.00	\$5.50	20	24C1	28AC	\$4.00	\$4.50	21

No. 24C31



Raised, with 1 1/2-inch keyed opening for Federal sign receptacle.

24C31 28AH \$5.00 \$5.50 18

No. 24C49



Flat, with 1 1/8-inch opening and screw holes on 1 3/4-inch centers for Benjamin sign receptacle.

24C49 28AL \$5.00 \$5.50 18

No. 24C6



Flat, with knockout for 1/2-inch conduit in center.

24C6 28AQ \$5.00 \$5.50 21

No. 24C7



Raised, with knockout for 1/2-inch conduit in center.

24C7 28AR \$6.00 \$6.50 20

No. 24C35



Raised, with 1 1/2-inch opening for sign receptacles, notched for protruding lug on porcelain.

24C35 28HIC \$5.00 \$5.50 18

No. 24C36



Raised, with 1 1/2-inch diameter opening and bent tongue to fit notches in new standard sign receptacles.

24C36 28HIIH \$6.00 \$6.50 38

No. 24C12



Raised, with 3/8-inch metal eyelet for drop cord.

24C12 28L \$5.00 \$5.50 20

No. 24C28



Flat, with slots for surface devices. Opening 1 7/8-inch screw centers 1 1/8 to 1 3/8 inches.

\*24C28 28S \$6.00 \$6.50 17

\*Two 5/32 by 3/4 inch screws and nuts furnished with each cover.

4-Inch Octagon Outlet Boxes



No. 2700



No. 2714

Black enameled or sherardized finish.

Standard package quantity is 100.

Cat. No.	Uni- versal	National	Black Enamel Per 100	Sherard- ized Per 100	Depth Inside Inches	KNOCKOUTS		Wt. Lbs. per 100
						Bottom	Sides	
54151	2700		\$13.00	\$15.00	1 1/2	5-1/2"	4-1/2"	61
*54151FS	2700FS		17.50	19.00	1 1/2	5-1/2"	4-1/2"	69
54151	2701		15.00	17.00	1 1/2	3-1/2"	4-3/4"	64
54151	2702		15.00	17.00	1 1/2	2-3/4"	2-1/2"	64
54155	2708		18.50	20.00	1 1/2	2-3/4"	2-3/4"	64
54171	2714		23.00	26.00	2 1/8	3-1/2"	4-1/2"	82
54171	2715		23.00	26.00	2 1/8	5-1/2"	4-1/2"	82
54171	2790		23.00	26.00	2 1/8	3-1/2"	4-3/4"	82
						2-3/4"	4-1"	82

\*FS designates fixture stud installed.

4-Inch Octagon Extension Rings

Rings have two tapped lugs at one end, and two untapped lugs at the other end. Black enameled or sherardized finish.

Standard package quantity is 100.



No. 2705



No. 2715

Cat. No.	Uni- versal	National	Black Enamel per 100	Sherard- ized per 100	Depth Inches	Knock- outs	Wt., Lbs. per 100
55151	2705		22.00	24.00	1 1/2	4-3/4"	46
55171	2716		45.00	49.00	2 1/8	4-1/2"	60
55171	2717		45.00	49.00	2 1/8	4-3/4"	60
55171	2792		45.00	49.00	2 1/8	4-1"	60

Covers for 4-Inch Octagon and Round Outlet Boxes

Black enameled or sherardized finish. Standard package quantity is 100.

No. 54C2



Raised, closed.

No. 54C1



Flat, closed.

Cat. No.	Uni- versal	National	Black Enamel per 100	Sherard- ized per 100	Lbs. per 100	Wt.
54C1	26AC		\$5.00	\$6.00	30	

No. 54C6



Flat, with k.o. for 1/2-inch conduit in center.

54C6 26AQ \$6.00 \$7.00 30

\*No. 54C14



Raised, 5/8 inch high, for one rectangular base switch or receptacle. Also suitable for bracket outlet.

\*54C14 26H \$11.00 \$12.00 25

No. 54C35



Raised, with 1 1/2-inch opening for sign receptacles, notched for protruding lug on porcelain.

54C35 26HG \$6.50 \$7.50 32

No. 54C12



Raised, with 3/8-inch metal eyelet for drop cord.

54C12 26L \$6.50 \$7.50 35

†No. 54C28



Flat, with slots for surface devices. Opening 1 1/8 inch; screw centers 1 1/16 and 1 1/16 inches.

†54C28 26S \$6.50 \$7.50 26

\*Has extra slot and screw hole so it can be turned 90° from normal position if desired.

†Two 5/16 x 3/4-inch screws and nuts with each cover.

No. 54C49



Flat, with 1 1/16-inch opening and screw holes on 1 3/4-inch centers for Benjamin sign receptacle.

54C49 26AL \$6.00 \$7.00 25

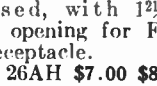
No. 54C7



Raised, with k.o. for 1/2-inch conduit in center.

54C7 26AR \$6.50 \$7.50 37

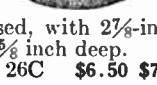
No. 54C31



Raised, with 1 1/32-inch keyed opening for Federal sign receptacle.

54C31 26AH \$7.00 \$8.00 32

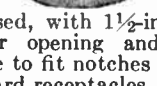
No. 54C48



Raised, with 2 7/8-inch opening 5/8 inch deep.

54C48 26C \$6.50 \$7.50 26

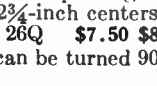
No. 54C36



Raised, with 1 1/2-inch diameter opening and bent tongue to fit notches in new standard receptacles.

54C36 26HH \$6.50 \$7.50 32

No. 54C3



Raised, 2 7/8-inch opening, 1 1/16 inch deep. Lugs tapped 5/16 on 2 3/4-inch centers.

54C3 26Q \$7.50 \$8.50 26

4-Inch Shallow Ceiling Boxes and Plates



No. 2646



No. 2624



No. 2630



No. 2644

Black enameled or sherardized finish.

Standard package quantity is 100.

Cat. No.	Uni- versal	National	Black Enamel Per 100	Sherard- ized Per 100	Diam. and Inside Depth, In.	Knock- outs	Cover Lugs.	Wt. Lbs. per 100
56112	2624		8.00	9.50	4x1/2	5-1/2"	No	42
56112	2625		8.00	9.50	4x1/2	{1-1/2" 4-3/4"}	No	42
56111	2630		9.50	11.00	4x1/2	5-1/2"	Yes	42
56111	2631		9.50	11.00	4x1/2	{1-1/2" 4-3/4"}	Yes	42
56111	*2631FS		14.00	15.50	4x1/2	4-3/4"	Yes	48
56115	2632		14.50	16.00	4x1/2	{3-1/2" 6-Loom}	Yes	42
56122	2636		13.50	15.00	4x3/4	5-1/2"	No	48
56122	2637		13.50	15.00	4x3/4	{1-1/2" 4-3/4"}	No	48
56126	2638		13.50	15.00	4x3/4	{3-1/2" 6-Loom}	No	48
56121	2642		15.50	17.00	4x3/4	5-1/2"	Yes	48
56121	2643		15.50	17.00	4x3/4	{1-1/2" 4-3/4"}	Yes	48
56125	2644		15.50	17.00	4x3/4	{3-1/2" 6-Loom}	Yes	48

\*FS designates fixture stud installed.

†Flat plate.

## 4-Inch Square Outlet Boxes



No. 2410

Two-hole cover lugs are standard on all 4-inch square boxes.

Black enameled or sherardized finish.

Standard package quantity is 100.

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Depth Inside Inches	Knockouts Bottom	Knockouts Sides	Wt. Lbs. per 100	
52151	\$15.00	\$18.00	1 1/2"	5-1/2"	10-1/2"	80	
*52151FS	*2400FS	19.00	22.00	1 1/2"	4-1/2"	10-1/2"	85
52151	2401	17.50	20.00	1 1/2"	1-1/2"	8-3/4"	82
					4-3/4"	2-1/2"	
51151	2402	17.50	20.00	1 1/2"	5-1/2"	8-1/2"	80
					2-Gas	8-3/4"	
51151	2403	17.50	20.00	1 1/2"	3-1/2"	8-3/4"	80
					2-3/4"	2-Gas	
52151	2406	17.50	20.00	1 1/2"	3-1/2"	8-3/4"	80
					2-3/4"	8-3/4"	
52151	2410	17.50	20.00	1 1/2"	3-1/2"	8-1/2"	80
					2-3/4"	4-3/4"	
52151FS	*2410FS	21.00	24.00	1 1/2"	2-1/2"	8-1/2"	85
					2-3/4"	4-3/4"	

\*FS designates fixture stud installed.

## 4-Inch Square Extension Rings



No. 2404

These rings have two tapped lugs on one end and four pierced holes on opposite end. The two tapped lugs have a double set of fastening holes so that covers can be mounted 90° from normal position.

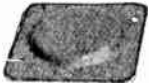
Black enameled or sherardized finish. Standard package quantity is 100.

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Depth Inches	Knockouts	Wt. Lbs. per 100	
53151	2404	\$23.00	\$25.00	1 1/2"	10-1/2"	62
53151	2405	23.00	25.00	1 1/2"	8-3/4"	62

## Covers for 4-Inch Square Outlet Boxes

Black enameled or sherardized finish. Standard package quantity is 100.

No. 52C2



Raised, closed.

No. 52C1



Flat, closed.

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Wt. Lbs. per 100
52C2	24A	\$8.50	\$9.50 45

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Wt. Lbs. per 100
52C1	24AC	\$6.00	\$7.50 38

No. 51C4



Raised, closed, with flanges for gas pipe.

51C4 24AA \$9.00 \$10.00 45

No. 52C7



Raised, with k.o. for 1/2 inch conduit in center.

52C7 24AR \$11.50 \$13.00 45

No. 52C48



Raised, with 2 7/8-inch opening 5/8 inch deep.

52C48 24C \$9.00 \$10.00 32

No. 51C55



Raised, with 2 7/8-inch opening, 5/8 inch deep with flanges for gas pipe.

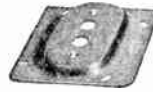
51C55 24CC \$9.50 \$11.00 33

## Surface Mounting Covers for 4-Inch Square Outlet Boxes

Black enameled or galvanized finish.

Standard package quantity is 100.

No. N-8490



Raised 1/2 inch. For one push button switch.

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Wt. Lbs. per 100
N-8490	\$22.00	\$24.00	43

No. N-8492



Raised 1/2 inch. For one single flush receptacle.

N-8492 \$22.00 \$24.00 41

No. N-8493A



Raised 1/2 inch. For two duplex receptacles.

N-8493A \$34.00 \$36.00 43

No. N-8495



Raised 1/2 inch. For two square handle toggle switches.

N-8495 \$34.00 \$36.00 45

No. N-8497



Raised 1/2 inch. For one push button switch and one single flush receptacle.

N-8497 \$34.00 \$36.00 43

No. N-8499



Raised 1/2 inch. For one push button switch and one duplex receptacle.

N-8499 \$34.00 \$36.00 43

No. N-8491



Raised 1/2 inch. For one square handle toggle switch.

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Wt. Lbs. per 100
N-8491	\$22.00	\$24.00	43

No. N-8493



Raised 1/2 inch. For one duplex receptacle.

N-8493 \$22.00 \$24.00 40

No. N-8494



Raised 1/2 inch. For two push button switches.

N-8494 \$34.00 \$36.00 45

No. N-8496



Raised 1/2 inch. For two single flush receptacles.

N-8496 \$34.00 \$36.00 43

No. N-8498



Raised 1/2 inch. For one square handle toggle switch and one single flush receptacle.

N-8498 \$34.00 \$36.00 43

No. N-8500



Raised 1/2 inch. For one square handle toggle switch and one duplex receptacle.

N-8500 \$34.00 \$36.00 43



**Covers for 4-Inch Square Outlet Boxes**

Black enameled or sherardized finish.  
Standard package quantity is 100.

**No. 52C35**



Raised, with 1½-inch opening for sign receptacles, notched for protruding lug on porcelain.

CAT. No.	Black Enamel Per 100	Sherardized Lbs. Per 100	Wt. per 100
52C35 24HG	\$11.50	\$13.00	45

**No. 52C36**



Raised, with 1½-inch opening and bent tongue to fit notches in new standard sign receptacles.

CAT. No.	Black Enamel Per 100	Sherardized Lbs. Per 100	Wt. per 100
52C36 24HH	\$11.50	\$13.00	45

**No. 52C12**



Raised, with ¾-inch metal eyelet for drop cord.

52C12 24L	\$13.50	\$15.00	44
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**No. 51C5**



Raised, with 2¾-inch opening, ⅝ inch deep. Lugs tapped ⅝ on 2¾-inch centers with flanges for gas pipe.

51C5 24QQ	\$10.00	\$11.50	34
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**No. 52C3**



Raised, with 2¼-inch opening, ⅝ inch deep. Lugs tapped ⅝ on 2¾-inch centers.

*52C3 24Q	\$9.50	\$11.00	33
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**No. 52C28**



Flat, with slots for surface devices, opening 1⅞", centers 1⅞ and 1⅞.

†52C28 24S	\$14.50	\$16.00	34
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**Flush Device Covers**



**No. 24HZ**



**No. 24KY**



**No. 24H**

CAT. No.	Black Enamel Per 100	Sherardized Per 100	Size Inches	Depth Inches	No. of Devices	Wt. Lbs. Per 100
*52C62 24HZ	\$9.50	\$10.50	4	¼	1	28
*52C13 24HY	10.00	11.50	4	½	1	30
*52C17 24KY	12.00	13.50	4	½	2	24
*52C14 24H	11.50	13.00	4	¾	1	35



**No. 24HX**



**No. 24K**



**No. 24HK**

..... †24HX	\$11.50	\$13.00	4x4⅞	¾	1	42
*52C18 24K	13.50	15.00	4	¾	2	32
*52C15 24HK	16.00	17.50	4	1	1	40



**No. 24KK**



**No. 24HL**



**No. 24KL**

*52C19 24KK	\$19.00	\$20.50	4	1	2	38
*52C16 24HL	18.50	19.50	4	1¼	1	44
*52C21 24KL	22.00	24.00	4	1¼	2	44

\*Covers have extra slots and screw holes so they may be turned 90 degrees from normal position if desired.

†Two ⅝x¾-inch screws and nuts with each cover.  
†An adjustable cover which can be shifted ⅞ inch to right or left of normal center line; total adjustment 1¼ inches. Useful when boxes have been set too close to door trim, and for lining up a row of convenience outlets. Fits 4-inch square boxes of any make.

**4⅛-Inch Square Outlet Boxes**



Sherardized finish only.

Standard package quantity is 100.



**No. 2514**

CAT. No.	National	Per 100	Depth Inside In.	Bottom	Sides	Knockouts	Wt. Lbs. per 100
2500	2500	\$56.00	1½	3-½"	8-¾"	10-½"	104
2514	2501	56.00	1½	2-¾"	8-¾"	10-½"	104
2517	2514	67.00	2⅞	3-½"	8-¾"	10-½"	124
2517	2515	67.00	2⅞	2-¾"	8-¾"	8-1"	124
2517	2590	67.00	2⅞	2-¾"	8-¾"	8-1"	124

**4⅛-Inch Extension Rings**



Sherardized finish only.

Standard package quantity is 100.



CAT. No.	National	Per 100	Depth In.	Knockouts Sides	Wt. Lbs. per 100
2504	2504	\$67.00	1½	10-½"	64
2517	2505	67.00	1½	8-¾"	64
2517	2516	89.00	2⅞	10-½"	112
2517	2517	89.00	2⅞	8-¾"	112
2517	2518	89.00	2⅞	8-1"	112

**Covers for 4⅛-Inch Square Outlet Boxes**

Sherardized finish only.  
Standard package quantity is 100.

**No. 72C2**



Raised, closed.

**No. 72C1**



Flat, closed.

CAT. No.	National	Per 100	Wt. Lbs. per 100	CAT. No.	National	Per 100	Wt. Lbs. per 100
72C2	25A	\$32.00	60	72C1	25AC	\$27.00	53

**No. 72C7**



Raised, with k.o. for ½-inch conduit in center.

72C7 25AR	\$34.00	60
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Raised, with 2⅞-inch opening, ⅝ inch deep.

72C48 25C	\$34.00	46
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**No. 72C12**



Raised, with ¾-inch metal eyelet for drop cord.

72C12 25L	\$34.00	60
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Raised, with 2⅞-inch opening, ⅝-inch deep. Lugs tapped ⅝ on 2¾-inch centers.

*72C3 25Q	\$34.00	43
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**Flush Device Covers**



**No. 25H**



**No. 25HK**



**No. 25HL**

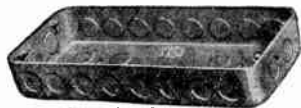


**No. 25K**

CAT. No.	National	Per 100	Depth Inches	No. of Devices	Wt. Lbs. per 100
*72C14 25H	25H	\$34.00	¾	1	45
*72C15 25HK	25HK	36.00	1	1	58
*72C16 25HL	25HL	34.00	1¼	1	63
*72C18 25K	25K	44.00	¾	2	52

\*Covers have extra slots and screw holes so they may be mounted 90 degrees from normal position if desired.

## National Gang Boxes



Holes provided in bottom of box for nails.

Width, 4 1/2 inches. Depth inside, 1 1/16 inches.

Cat. No.	Sherardized Per 100	No. of Gangs	Length Inches	KNOCKOUTS			Std. Pkg.	Wt. Lbs. per 100
				End	Each Side	Bottom		
3002	\$86.00	2	6 7/8	2-1/2"	5-1/2"	5-1/2"	50	176
3012	86.00	2	6 7/8	2-3/4"	4-3/4"	4-3/4"	50	176
3003	124.00	3	8 5/8	2-1/2"	6-1/2"	10-1/2"	25	224
3013	124.00	3	8 5/8	2-3/4"	6-3/4"	2-1/2", 8-3/4"	25	224
3004	162.00	4	10 1/2	2-1/2"	8-1/2"	10-1/2"	25	256
3014	162.00	4	10 1/2	2-3/4"	7-3/4"	2-1/2", 8-3/4"	25	256
3005	220.00	5	12 1/4	2-1/2"	8-1/2"	10-1/2"	15	305
3015	220.00	5	12 1/4	2-3/4"	8-3/4"	2-1/2", 8-3/4"	15	305
3006	430.00	6	14	2-1/2"	10-1/2"	10-1/2"	15	330
3016	430.00	6	14	2-3/4"	8-3/4"	2-1/2", 8-3/4"	15	330
3007	640.00	7	16	2-1/2"	10-1/2"	10-1/2"	5	430
3017	640.00	7	16	2-3/4"	10-3/4"	2-1/2", 8-3/4"	5	430
3008	690.00	8	17 3/4	2-1/2"	12-1/2"	10-1/2"	5	480
3018	690.00	8	17 3/4	2-3/4"	12-3/4"	2-1/2", 8-3/4"	5	480
3009	750.00	9	19 1/2	2-1/2"	14-1/2"	10-1/2"	5	520
3019	750.00	9	19 1/2	2-3/4"	12-3/4"	2-1/2", 8-3/4"	5	520

## National Covers for Gang Boxes

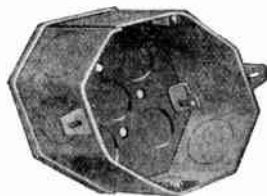


Covers are furnished in sherardized finish only.

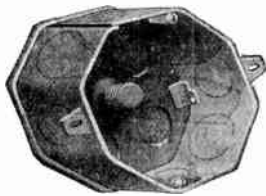
Cat. No.	Sherardized Per 100	No. of Gangs	Cat. No. of Box Designed For	Cat. No. Box Special Fit	Std. Pkg.	Wt. Lbs. per 100
30C2	\$38.00	2	3002, 3012	3002, 3012	50	74
30C3	57.00	3	3003, 3013	3002, 3012	25	76
30C4	86.00	4	3004, 3014	3003, 3013	25	106
30C5	105.00	5	3005, 3015	3004, 3014	25	130
30C6	200.00	6	3006, 3016	3005, 3015	15	100
30C7	352.00	7	3007, 3017	3006, 3016	10	170
30C8	400.00	8	3008, 3018	3007, 3017	5	220
30C9	450.00	9	3009, 3019	3008, 3018	5	240
30C10	490.00	10	.....	3009, 3019	5	260

## National Outlet Boxes for Concrete Work

### 4-Inch Octagon, Sherardized Finish



No. 3202



No. 3203

Cat. No.	Universal No.	Depth Inches	Knockouts No. and Size, Inches	Stud	Std. Pkg.	Wt. Lbs. per 100	Price per 100
3102	54521	1 1/2	4-1/2" & 4-3/4"	No	25	72	\$35.00
3103	54521	1 1/2	4-1/2" & 4-3/4"	Yes	25	72	39.00
3202	54531	2	4-1/2" & 4-3/4"	No	25	92	41.00
3203	54531	2	4-1/2" & 4-3/4"	Yes	25	92	45.00
3302	54551	3	4-1/2" & 4-3/4"	No	10	120	50.00
3303	54551	3	4-1/2" & 4-3/4"	Yes	10	120	54.00
3304	54551	3	4-3/4" & 4-1"	No	10	125	50.00
3305	54551	3	4-3/4" & 4-1"	Yes	10	125	54.00
3402	54561	3 1/2	4-1/2" & 4-3/4"	No	10	130	58.00
3403	54561	3 1/2	4-1/2" & 4-3/4"	Yes	10	130	62.00
3404	54561	3 1/2	4-3/4" & 4-1"	No	10	130	58.00
3405	54561	3 1/2	4-3/4" & 4-1"	Yes	10	130	62.00
3502	54571	4	4-1/2" & 4-3/4"	No	10	140	64.00
3503	54571	4	4-1/2" & 4-3/4"	Yes	10	140	68.00
3504	54571	4	4-3/4" & 4-1"	No	10	140	64.00
3505	54571	4	4-3/4" & 4-1"	Yes	10	140	68.00
3602	54581	5	4-1/2" & 4-3/4"	No	10	170	71.00
3603	54581	5	4-1/2" & 4-3/4"	Yes	10	170	75.00
3604	54581	5	4-3/4" & 4-1"	No	10	170	71.00
3605	54581	5	4-3/4" & 4-1"	Yes	10	170	75.00
3702	54591	6	4-1/2" & 4-3/4"	No	10	200	85.00
3703	54591	6	4-1/2" & 4-3/4"	Yes	10	200	89.00
3704	54591	6	4-3/4" & 4-1"	No	10	200	85.00
3705	54591	6	4-3/4" & 4-1"	Yes	10	200	89.00

## National Shallow Boxes

For Loom and Loomwire



Nos. 2375 and 2385



No. 2385-D



No. 2376



No. 2377



No. 2388-D

Has CL-65 clamps and 4 1/4-inch knockouts. There is ample room for splices. Has double grip clamp for loom. Brass ferrule in addition should be used for armored cable. Extra knockouts for cable or loom and screw hole for extra clamp. Boxes 1/2-inch deep when mounted on box bars or against lath, will be even with the plaster.

Black enameled or sherardized finish. Standard package, 100.

### Nos. 2375 and 2385

With 3/8-inch fixture stud. Also furnished mounted on duplex bar No. 2262.

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Size Inches	No. of Clamps	Wt. Lbs. per 100
2375	\$15.00	\$16.00	3 1/4 x 1 1/2	1	33
2385	.....	20.00	3 1/4 x 3/4	1	44

### No. 2385-D

With 3/8-inch fixture stud. Also furnished mounted on duplex bar No. 2262.

2385-D	\$25.00	\$27.00	3 1/4 x 1 1/2	1	56
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### No. 2376

Has sleeve for 3/8-inch gas pipe.

2376	\$13.00	\$14.50	3 1/4 x 1 1/2	1	33
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### No. 2377

Has 3/8-inch female thread. Also furnished on duplex bar No. 2262.

2377	\$15.00	\$16.50	3 1/4 x 1 1/2	1	33
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### No. 2388-D

Has 1/2-inch conduit knockout in center.

2388-D	\$20.00	\$22.00	3 1/4 x 1 1/2	1	52
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## No. 2708-L2 National Deep Boxes

For Loom and Loomwire



This octagon box has three 1/2-inch knockouts and 6-loom or loomwire in the bottom, and one 1/2-inch knockouts or 8-loom or loomwire.

Furnished with cover lugs.

Has two CL-2 clamps.

It can be used for armored cable with brass ferrules.

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Diam. In.	Depth In.	Std. Pkg.	Wt. Lbs. per 100
2708-L2	\$19.00	\$21.00	4	1 1/2	100	50

## National Shallow Boxes for Armored Cable



No. 2365

Will take loom or both loom and armored cable in same box. Holds from 1 to 4 cables of 2 or 3 wires each or 4 pieces of loom or combination of both. With two CL-65 clamps. Nos. 2365 and 2365-D supplied mounted on Bendit or duplex bar; No. 2367 on duplex bar. Four 4 1/4-inch k.o.'s for 14/2, 14/3 and 12/2 cable. Diameter, 3 1/4 in. Depth, 3/4 in. except Nos. 2365-D and 2368-D which are 1 1/2 inches deep.

Cat. No.	Description	Std. Pkg.	Wt. Lbs. per 100
2365	With 3/8-Inch Fixture Stud.....	100	44 \$20.00
2365-D	With 3/8-Inch Fixture Stud.....	100	60 27.00
2366	With Sleeve for 3/8-Inch Gas Pipe..	100	44 18.50
2367	With 3/8-Inch Female Thread.....	100	44 20.00
2368	With 1/2-Inch Conduit K.O. in Center	100	44 16.00
2368-D	With 1/2-Inch Conduit K.O. in Center	100	60 22.00

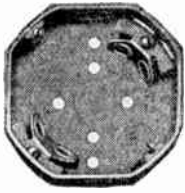


**Deep Octagon and Round Boxes  
For Armored Cable**

Box is equipped with either fixture stud or 1/2-inch center conduit knockout. Box will be supplied mounted on Bendit box bars as complete units. Two CL-55 clamps used with side knockouts. Box has cover lugs and screws for standard covers. Standard package is 100. Sherardized finish.

**Octagon**

With 8-cable and loom and four 1/2-in. conduit knockouts in side; No. 2345 has two 1/2-inch conduit knockouts in bottom, No. 2348 has three 1/2-inch conduit knockouts in bottom.



Cat. No.	Size In.	Black Enamel Per 100	Sherardized Per 100	Fixture Stud, In.	Wt., Lbs. Std. Pkg.
2345	4x1 1/2	\$27.00	\$29.00	3/8 Male	72
2348	4x1 1/2	22.00	24.00	No	73

**Round**

With 4-cable and loom and two 1/2-inch conduit knockouts in side; No. 2355 has 2-cable or loom in bottom, No. 2358 has one 1/2-inch conduit knockout and 2-cable or loom in bottom.



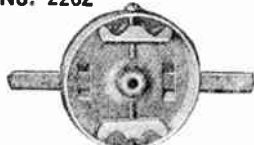
2355	3 1/4 x 1 1/2	\$25.00	\$27.00	3/8 Male	70
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**Economy Box and Bar Sets**

**Cable and Loom Boxes Mounted on National Duplex Bar No. 2262**



No. 2296



No. 2297



No. 2299

Duplex bar No. 2262 is 20 inches long, 1/2 inch wide, 3/16 inch thick; made from 1/16-inch flat rolled steel strip folded on itself in the form of a flat U-shaped channel. A blow with a hammer slides box to any desired position. Has CL-65 clamps.

Sherardized finish only. Standard package, 100.

**With 3/8-Inch Fixture Stud For Armored Cable or Loom**

Cat. No.	Box Used	Per 100	Diameter Inches	Depth Inches	No. of Clamps	Wt., Lbs. Std. Pkg.
2296	2365	\$30.00	3 1/4	3/4	2	84

**For Loom or Loom Wire**

2297	2375	\$26.00	3 1/4	1/2	1	72
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**With 3/8-Inch Female Thread For Loom or Loom Wire**

2299	2377	\$26.00	3 1/4	1/2	1	72
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**National Box and Bar Sets**

**Cable and Loom Boxes Mounted on Bendit Bar No. 2260 No. 2305**



Two 1/2-inch knockouts in bottom; four 1/2-inch insides; 8 loom or Loom-Wire knockouts in sides. Furnished with cover lugs.

Set Cat. No.	Box Used	Sherardized Per 100	Diam. In.	Depth In.	Fixture Stud, In.	Clamps	Wt., Lbs. Std. Pkg.
2305	2325	\$38.00	4	1 1/2	3/8	2CL45	138

**No. 2307**

Two 1/2-inch knockouts in sides, 4 loom or Loom Wire knockouts in sides and two in bottom. Furnished with cover lugs.

2307	2335	\$38.00	3 1/4	1 1/2	3/8	1CL45	122
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**National Interchangeable Sectional Switch Boxes For Loom**

The sides and spacers (or units) of these boxes are interchangeable with similar types of certain other makes. Black enameled or sherardized finish. Standard Package, 50.

**No. 1 and 2**

With two 5/8-inch loom knockouts in bevels; No. 1 has also two 5/8-inch loom in sides and one 1/2-inch conduit in bottom.

Has no clamps.



No. 1

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Depth In.	Wt., Lbs. Std. Pkg.
1	\$12.00		2	55
1 Unit	9.00		2	29
2	14.00	\$16.50	2	58
2 Unit	11.00	13.50	2	32

**No. 3**

With two 5/8-inch loom knockouts in bevels; No. 3 has also two 5/8-inch loom in sides and 1 1/2-inch conduit in bottom. Has no clamps.

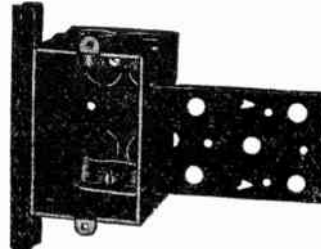


No. 3

3	\$14.00	\$16.00	2 1/4	59
3 Unit	11.00	13.00	2 1/4	32

**No. 3-SB**

With two 5/8-inch loom knockouts in bevels; No. 3-SB has also two 5/8-inch loom in sides and 1 1/2-inch conduit in bottom. Has no clamps.

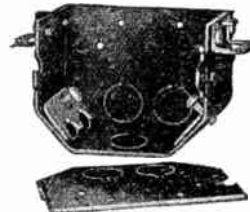


No. 3-SB

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Depth In.	Wt., Lbs. Std. Pkg.
3-SB	\$23.00	\$26.00	2 1/4	80

**No. 4**

With two 5/8-inch loom knockouts in bevels; No. 4 has also two 5/8-inch loom in sides and 1 1/2-inch conduit in bottom. With 2 loom clamps.

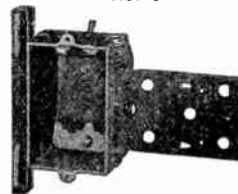


No. 4

Cat. No.	Black Enamel Per 100	Sherardized Per 100	Depth In.	Wt., Lbs. Std. Pkg.
4	\$16.00	\$18.00	2 1/4	63
4 Unit	13.00	15.00	2 1/4	33

**No. 4-SB**

With two 5/8-inch loom knockouts in bevels; No. 4-SB has also two 5/8-inch loom in sides and 1 1/2-inch conduit in bottom. Has 2 loom clamps.

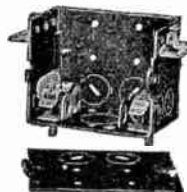


No. 4-SB

4-SB	\$25.00	\$28.00	2 1/4	84
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**National Interchangeable Sectional Switch Boxes**

**For Armored Cable and Loom Wire**



No. 7

Has two 3/8-inch cable knockouts in ends; two in sides; and four in bottom; 1/2-inch knockout in bottom.

Square corners. Two CL-4 flanged clamps. Swivel ears.

Sherardized or black enamel finish.

Standard package, 50.

No. 7		7	12
Black Enamel	per 100	\$16.00	\$17.50
Sherardized	per 100	18.00	19.00
Depth	inches	2	2 1/2
Carton Quantity			1
Weight, per 100	pounds	66	75

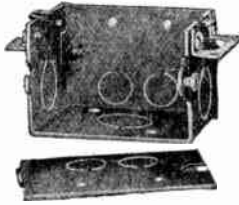


## National Interchangeable Sectional Switch Boxes

### For Conduit

Square corners. No clamps.  
Sherardized or black enamel finish.  
Carton quantity, 1.

No. 8



With one 1/2-inch conduit knockout in ends, one 1/2-inch conduit k.o. in bottom; No. 8 has also two 5/8-inch loom k.o. in sides.

Cat. No.	PER 100		Depth Inches	Std. Pkg.	Wt., Lbs.	
	Sher.	Enam.			Std.	Pkg.
8	\$17.00	\$15.00	2	50	58	
8 Unit	14.00	12.00	2	50	39	

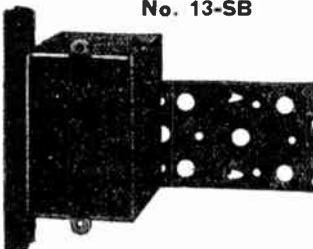
No. 13



With one 1/2-inch conduit knockout in ends, one 1/2-inch conduit k.o. in bottom; No. 13 has also two 1/2-inch conduit k.o. in sides.

Cat. No.	PER 100		Depth Inches	Std. Pkg.	Wt., Lbs.	
	Sher.	Enam.			Std.	Pkg.
13	\$17.00	\$15.00	2 1/2	50	76	
13 Unit	14.00	12.00	2 1/2	50	40	

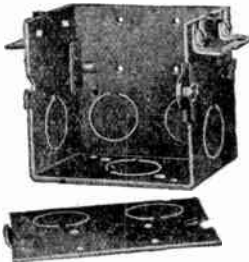
No. 13-SB



With one 1/2-inch conduit knockout in ends, one 1/2-inch conduit k.o. in bottom; No. 13-SB has also two 1/2-inch conduit k.o. in sides.

Cat. No.	PER 100		Depth Inches	Std. Pkg.	Wt., Lbs.	
	Sher.	Enam.			Std.	Pkg.
13-SB	\$27.00	\$24.00	2 1/2	50	86	

No. 14

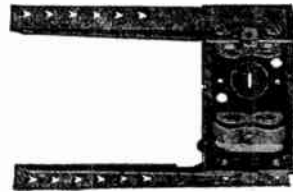


With one 1/2-inch conduit knockout in ends, one 1/2-inch conduit k.o. in bottom; No. 14 has also two 1/2-inch conduit k.o. in sides.

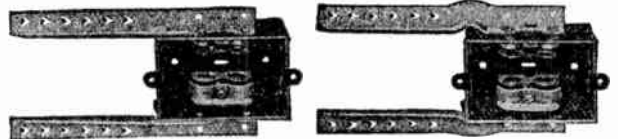
Cat. No.	PER 100		Depth Inches	Std. Pkg.	Wt., Lbs.	
	Sher.	Enam.			Std.	Pkg.
14	\$17.00	\$15.00	2 3/4	50	86	
14 Unit	14.00	12.00	2 3/4	50	47	

## National Interchangeable Sectional Switch Boxes

### For Armored Cable, with Extended Ears



No. 12-X



No. 12-XR

No. 12-XW

These boxes have square corners. Clamps are of the new knockout closing type.

Knockouts for cable are 2 1/2-inch in diameter. Boxes have two 2 1/2-inch cable knockouts in each end; two in each side and four in bottom.

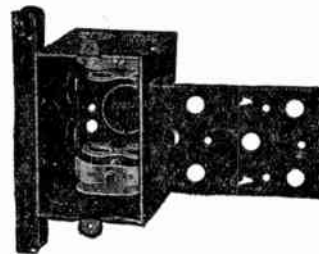
Nos. 7-X and 12-X have two flanged CL-4 clamps, and no lath support.

Nos. 12-XR and 12-XW have two flanged CL-3 clamps. Sherardized or black enameled finish.

Cat. No.	7-X	12-X	12-XR	12-XW
Black Enamel . . . . . per 100	\$23.00	\$24.00	\$28.00	\$32.00
Sherardized . . . . . per 100	26.00	27.00	31.00	35.00
Depth . . . . . inches	2	2 1/2	2 1/2	2 1/2
Standard Package . . . . .	50	50	50	50
Weight, per 100 . . . . . pounds	69	77	77	77

## No. 12-SB National Interchangeable Sectional Switch Boxes

### For Armored Cable and Loom Wire



Made especially for use with A.B.C. armored bushed cable and anti-short bushings, but equally suitable for use with any cable. The special clamps have knockout closing flanges, lookouts which render the anti-shorts visible for inspection, and a baffle plate which holds the anti-short inside A.B.C. cable and

eliminates brass ferrules used with other types of cables.

In this box, slots are provided beside each knockout, into which a screwdriver may be inserted to pry out the knockout disc.

The stud brackets and lath supports welded-on this box are gauged to fit standard spacing of lath and plaster. This assembly is vibration-proof and will not become loose.

Lath support extends at least 3/4 inch beyond top and bottom of switch box allowing lath to pass through extended portions of lath support, and entirely across studding. This additional support makes section of all around switch box the strongest portion. The box is held by stud bracket, by lath above and below, and by shortened lath which terminate in groove of lath support.

The box is easy to install making it a real time and labor saver.

Depth 2 1/2 inches. Has two 2 1/2-inch cable knockouts in ends; two in sides; one 1/2-inch knockout in bottom and fixture stud holes. Welded-on stud bracket and lath support.

Two CL-4 flanged clamps.	
Sherardized or black enameled finish.	
Standard package, 50.	
Weight, 80 pounds per 100.	
No. 12-SB, Sherardized . . . . . per 100	\$30.00
No. 12-SB, Black Enameled . . . . . per 100	27.00

**National Sectional Switch Boxes**

**Square Corners**

**For Armored Cable**

With two  $\frac{3}{8}$ -inch cable knockouts in ends, four  $\frac{3}{8}$ -inch cable in bottom; No. 4168 has also two  $\frac{3}{8}$ -inch cable in sides.

Depth,  $2\frac{1}{2}$  inches.  
Black enameled finish.  
With 2 clamps.

Carton, 1. Standard package, 100.



No. 4168

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
4168	\$16.50	Box, with Clamps	76
4168-SB	26.00	Stud Bracket	93

**For Conduit**

With one  $\frac{1}{8}$ -inch knockout in ends, two  $\frac{1}{8}$ -inch knockouts in bottom; No. 4176 has also two  $\frac{1}{8}$ -inch knockouts in sides.

Depth,  $2\frac{1}{2}$  inches.  
Black enameled finish.  
No clamps.

Carton quantity, 1. Standard package, 100.



No. 4176

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
4176	\$15.00	Box, No Clamps	65
4176-SB	24.00	Stud Bracket	88

**National Sectional Switch Boxes**  
**Boxes for Shallow Type Switches and Devices**  
**Taking Rigid Conduit or Armored Cable and**

**Ovalflex Square Corners**

Without supporting ears. No clamps.

Nos. 4170 and 4171 have one  $\frac{1}{8}$ -inch knockout in sides, ends and bottom for  $\frac{1}{2}$ -inch conduit, one  $\frac{3}{8}$ -inch knockout in sides for armored cable. Nos. 4172 and 4173 have one  $\frac{1}{8}$ -inch knockout in ends and bottom for  $\frac{1}{2}$ -inch conduit. Black enamel or sherardized finish. Standard package, 50.

\*Standard switch and device plates will cover the box, but not the supporting ears.



Cat. No.	Sher. Per 100	Enam. Per 100	Description	Size Inches	Wt., Lbs. Std. Pkg.
4170	\$23.00	\$25.00	Box	$1\frac{1}{2}$	65
4172	20.00	22.00	Spacer for 4170	$1\frac{1}{2}$	33
*4171	25.00	27.00	Box	$1\frac{1}{2}$	65
4173	22.00	24.00	Spacer for 4171	$1\frac{1}{2}$	33

**R & S Fixture Hanger Boxes**



For supporting and lowering fixtures or chandeliers in theatres, lobbies and auditoriums from the floor above or from hung ceilings, thus providing an easy means for relamping and cleaning. Circuits of chandelier are disconnected by means of single-pole plugs, the safety devices removed and fixture then lowered by means of special portable winch previously connected to eye of chandelier by steel cable.

The use of two  $3 \times 3 \times \frac{3}{8}$ -inch thick angle iron supports under box to distribute load over a large area or across eye beams in ceiling is recommended. Cast iron box is fitted with brass floor flange and gasketed brass cover. Dimensions over all,  $10\frac{1}{2} \times 10\frac{1}{2} \times 5$  inches deep.

Maximum conduit,  $1\frac{1}{2}$  inches in center of all sides. Specify size and location of outlets when ordering.

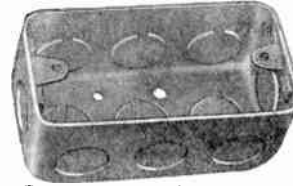
When ordering specify size of fixture stem to be used.

Approximate weight, 51 pounds. Price includes plugs.

Cat. No.	1891	1892	1893	1894	1895	1896
No. Circuits	1	2	3	4	5	6
Each	\$78.00	80.40	82.80	85.20	87.60	90.00

**No. 2020 National Flush Device Boxes**

Rounded Corners— $\frac{1}{2}$ -Inch Knockouts for Conduit



This box is  $4\frac{1}{8}$  inches long,  $2\frac{1}{8}$  inches wide and  $1\frac{1}{8}$  inches deep outside, with 1 knockout in each end, 3 in each side and 3 in bottom for  $\frac{1}{2}$ -inch conduit. There are 2 nail holes in bottom.

Lugs are tapped on  $3\frac{3}{8}$ -inch centers for all standard makes of push-button and rectangular rotary switches and flush convenience outlets. Sherardized or black enamel.

Cat. No.	Per 100	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.
2020	\$22.00	Flush Device Box, Complete....	100	73

**National Steel Covers for No. 2020**

**Solid Device Box**

Covers fit other makes of similar utility type boxes. Slightly countersunk or flanged and rounded on the corners. Sherardized or black enameled finish.



**No. 20-A**

Blank steel cover.

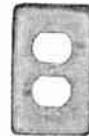
Cat. No.	Per 100	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.
20-A	\$9.50	$3\frac{3}{16} \times 4\frac{3}{16}$	100	15



**No. 20-B**

Steel cover for double push switch.

20-B	\$16.00	$3\frac{3}{16} \times 4\frac{3}{16}$	100	14
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**No. 20-C**

Steel cover for standard duplex receptacle.

20-C	\$16.00	$3\frac{3}{16} \times 4\frac{3}{16}$	100	12
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**No. 20-E**

Steel cover for standard square handled toggle switch.

20-E	\$15.50	$3\frac{3}{16} \times 4\frac{3}{16}$	100	14
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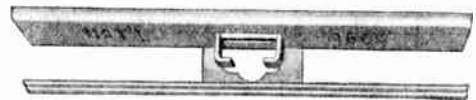


**No. 20-F**

Steel cover for single T slot and Edison base receptacles.

20-F	\$16.00	$3\frac{3}{16} \times 4\frac{3}{16}$	100	13
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**No. 1601 National Economy Bar Lath Supports**



Where outlet boxes mounted on steel bars are installed between joists or studding, the Economy Bar Lath Support holds the loose ends of the lath firmly in place. It fits over the bar through a punched hole in the bottom of the support and will slide back and forth to any position. The lath slides between the top and bottom flanges, making a rigid support and preventing the plaster around the box from breaking away.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. per 100	Price per 100
1601	100	1000	7	\$4.00



## Economy Bar Hangers

Will Fit Any Box Having 1/2-Inch Center  
Knockout  
With 3/8-Inch Stud  
Straight Bar Hanger



For shallow boxes in new work or for holding boxes to concrete forms. With 1/2-inch deep boxes where bar is nailed to joists or studding, edge of box will be flush with ordinary plaster.

Cat. No.	Length Bar, In.	Unit Pkg.	Wt., Lbs. Unit Pkg.	Price per 100
2263	18	100	62	\$13.50
*2263-L	24	100	72	25.00

## Shallow Offset Bar Hangers



Hanger for 1 1/2-inch deep boxes without switch covers or plaster rings; offset brings box edge flush with plaster.

Cat. No.	Length Bar Inches	Depth Offset Inches	Unit Pkg.	Wt., Lbs. Unit Pkg.	Price per 100
2265	19 1/2	1 1/16	50	33	\$16.50

## Deep Offset Bar Hangers



For 1 1/2-inch deep boxes with switch covers or plaster rings; offset brings 5/8-inch deep covers flush with plaster.

Cat. No.	Length Bar Inches	Depth Offset Inches	Unit Pkg.	Wt., Lbs. Unit Pkg.	Price per 100
2266	19 1/2	1 1/16	50	35	\$17.50

## Old Work Bar Hangers



For mounting shallow boxes or plates in buildings already plastered. Make a small hole about 1 1/2-inch in diameter; push bar all the way into hole, long end first as shown in cut; hold stud in one hand and pull wire with the other until bar is centered across hole.

Cat. No.	Length Bar Inches	Unit Pkg.	Wt., Lbs. Unit Pkg.	Price per 100
2267	12	100	35	\$13.50

## Box Cleats



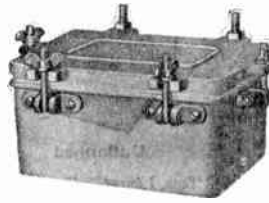
For 1 1/2-inch deep boxes with covers and integral studs, or without studs. Offset has slots for stove bolts to hold box, and is right depth to bring 5/8-inch covers flush with the plaster.

Cat. No.	Length Bar Inches	Depth Offset Inches	Unit Pkg.	Wt., Lbs. Unit Pkg.	Price per 100
2268	21	1 1/16	50	30	\$11.50

\*Special length bars over 24 inches, add 60 cents per 100 to price for each additional inch.

For 1/2-inch studs, \$1.20 per 100 extra.

## T & B Weatherproof Type Cast Iron Junction Boxes



A sturdy box built for rugged service. A hinged cover, supplied with thumb nuts on all four sides, makes a water-tight, weatherproof job when tightened.

Furnished with gasket as standard equipment.

Boxes are listed in black japan finish.

Cat. No.	Complete Each Japanned	SIZE INCHES		WEIGHT, POUNDS	
		W.	L. D.	Box	Cover
10500	\$6.00	4x	6x 1	5	2
10502	7.80	6x	6x 1	10	3
10503	8.00	6x	8x 1	15	4
10505	8.60	6x12x	3	10.2	5.5
10507	7.50	7x	9x 3	8	5
10509	8.00	8x	8x 1	9	5
10510	8.20	8x	8x 5	10.3	5
10511	9.00	8x	8x 6	10.3	4.5
10512	10.00	8x10x	4	16	4
10513	15.00	8x14x	5	21	12
10514	20.00	8x18x	6	27	11
10515	10.50	10x10x	4	13.2	8.2
10516	12.00	10x10x	6	16.2	8
10517	11.20	10x12x	4	14	10
10519	17.00	10x14x	6	24	10
10520	17.50	10x18x	4	23	13
10522	14.00	12x12x	4	16	10
10523	18.00	12x16x	4	27	15
10524	21.00	12x16x	6	40	15
10535	72.00	12x16x	8	160	26
10525	48.00	12x24x	7	70	29
10527	32.00	16x20x	6	64	26
10528	36.00	18x18x	6	73	29
10529	44.00	18x18x10		100	32
10530	40.00	18x24x	6	83	42
10531	72.00	18x36x	8	173	70

## R & S Floor Outlets

### Elbows, Tees and Adjustable Tops

Future requirements for service connections may be anticipated by systematically studding the floor with these outlets, all radiating from one or more pull boxes, from which any changes or additions may subsequently be made by the pulling of wires. The complete outfit consists of a galvanized iron long radius conduit fitting, and brass adjustable top with water-tight cap, which can be raised or lowered to meet the final surfacing of floor.



Elbow

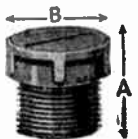


Tee

Size Conduit In.	DIMEN., IN.		Cat. No.	Wt. Lbs.	Price Each	Cat. No.	Wt. Lbs.	Price Each
	A	B						
1/2	25/8	4	1900	3/4	\$1.00	1905	7/8	\$1.60
3/4	3 1/16	4 5/8	1901	1	1.30	1906	1 1/4	1.90
1	3 3/4	4 3/4	1902	1 1/8	1.60	1907	1 1/2	2.40
1 1/4	4 1/2	5 3/8	1903	3	2.80	1908	4 1/4	5.00
1 1/2	5 1/16	6	1904	4 1/4	5.00	1909	5 1/2	7.00
2	7 3/16	10 3/4	1914	8 3/4	8.30	1910	13 3/4	11.00

### Adjustable Tops

Cat. No.	Size Conduit In.	Vertical Adjust-ment In.	DIMEN., IN.		Approx. Wt., Lbs. Each	Price Each
			A	B		
1915	1/2	1/2	1 1/4	1 3/16	1/4	\$ 1.00
1916	3/4	1/2	1 3/4	1 3/16	3/8	1.20
1917	1	1/2	1 5/16	1 3/4	1/2	2.00
1918	1 1/4	3/4	1 9/16	2 1/16	3/4	4.00
1919	1 1/2	3/4	1 3/4	2 1/2	1	5.00
1920	2	3/4	2 3/16	3 3/8	2	8.80





**T & B Cast Iron Junction Boxes and Covers**



Sizes other than those listed can be furnished.  
Add 25% net for hot dip galvanizing.

Cat. No.	JAPANNED, EACH			SIZE, INCHES W. L. D.	Wt., Lbs. Complete
	Box Only	Box and Cover	Gasket Each		
10895	\$1.40	\$2.00	\$.30	4x 4x 3	3.8
10756	2.00	2.60	.30	4x 4x 4	3.8
10914	2.80	3.60	.40	4x 6x 3	7
10899	3.60	4.80	.60	4x 8x 3	12.6
10757	3.80	5.40	.70	4x12x 4	10.8
10897	2.50	3.70	.60	6x 6x 3	9
10898	3.40	4.70	.60	6x 6x 4	8
10915	3.80	5.10	.60	6x 6x 6	14
10900	4.60	6.00	.70	6x 8x 3	14
10902	4.30	5.70	.70	6x 8x 4	15
10916	5.00	6.40	.70	6x 8x 6	15.5
10908	7.20	9.20	1.00	6x12x 4	19
10910	10.80	12.80	1.00	6x12x 6	24
10901	6.00	8.00	.90	8x 8x 3	14
10903	6.20	8.20	.90	8x 8x 4	16
10904	7.30	9.30	.90	8x 8x 6	18
10763	7.80	9.80	.90	8x 8x 8	20
10764	10.00	13.00	1.00	8x12x 6	28
10905	11.10	14.30	1.00	10x10x 8	104
10907	9.00	13.00	1.20	12x12x 3	41
10909	9.00	13.00	1.20	12x12x 4	45
10911	14.00	18.00	1.20	12x12x 6	52
10769	20.00	24.00	1.20	12x12x12	96
10771	32.00	37.50	1.40	12x18x12	130
10785	34.00	42.00	3.00	12x24x12	113
10778	31.00	44.00	3.00	18x18x 8	140
10780	66.00	94.00	4.00	24x30x12	360
10781	110.00	172.00	4.50	30x30x12	455
10782	180.00	290.00	6.00	30x48x12	910

Cat. No.	Unflanged Type			SIZE, INCHES W. L. D.	Wt., Lbs. Complete
	Box Only	Box and Cover	Gasket Each		
10861	\$.90	\$1.20	\$.20	4x 4x 2	2.5
10862	1.00	1.30	.20	4x 4x 3	3.5
10700	1.70	2.00	.20	4x 4x 4	5
10866	1.50	2.00	.30	4x 6x 2	5.5
10703	2.20	2.70	.30	4x 6x 4	7.75
10863	1.60	2.10	.40	5x 5x 3	6
10867	1.60	2.00	.50	5x 6x 3	6
10894	1.70	2.40	.50	6x 6x 2	6.5
10962	1.70	2.40	.50	6x 6x 3	7.5
10868	2.60	3.30	.50	6x 6x 4	8.5
10963	3.50	4.20	.50	6x 6x 5	12.5
10964	3.70	4.40	.50	6x 6x 6	14.5
10871	2.70	3.60	.60	6x 8x 3	10.5
10872	3.10	4.00	.60	6x 8x 4	10.5
10874	4.60	5.50	.60	6x 8x 6	15.5
10878	5.40	6.70	.90	6x10x 4	15
10968	4.70	6.70	1.00	6x12x 4	21
10882	8.00	10.00	1.00	6x12x 6	27
10711	15.00	18.00	2.00	6x18x 6	25
10870	2.80	3.60	.60	7x 7x 3	11
10965	4.00	5.20	.80	8x 8x 3	13.5
10873	4.00	5.20	.80	8x 8x 4	13
10717	9.00	10.20	.80	8x 8x 8	23
10714	5.00	6.80	1.00	8x10x 4	20
10855	6.20	8.00	1.00	8x10x 6	15.5
10715	10.00	11.80	1.00	8x10x 8	32
10718	10.00	12.00	1.20	8x12x 6	37
10853	5.30	6.80	1.10	9x 9x 4	5
10852	5.40	7.00	1.20	10x10x 5	14
10726	7.40	9.00	1.20	10x10x 6	17
10728	7.00	10.00	1.60	12x12x 3	27
10881	7.50	10.50	1.60	12x12x 4	32
10969	9.60	12.60	1.60	12x12x 6	46
10729	12.00	15.00	1.60	12x12x 8	39
10732	19.50	24.00	2.00	12x18x 6	68
10733	22.00	26.50	2.00	12x18x10	97
10883	24.00	31.00	3.00	14x14x10	107
10742	24.00	32.00	2.50	18x18x 5	106
10743	21.00	29.00	2.50	18x18x 6	117
10744	29.00	37.50	3.50	18x24x 6	168
10746	48.00	62.00	4.00	24x24x 8	265

**Typical Square-Duct Installations**

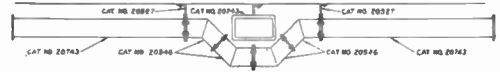


Fig. 1

Fig. 1 is a down-view showing how the use of 4 vertical elbows makes it possible to cross over or to bridge another section of wiring trough. The use of 2 of these fittings makes it possible to drop to a lower level whenever desirable. In this view, the wiring trough sections are mounted to the side wall by means of bracket hangers.

Fig. 2 illustrates the use of the telescope fitting, the drop hanger, the junction box and connecting a wiring trough section to the power panel.

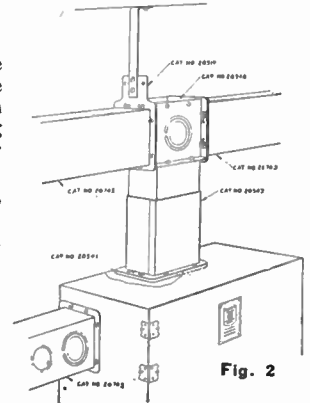


Fig. 2

By looking carefully at the bottom of the telescope fitting, you will notice a cutaway view showing how the use of the panel fitting collar provides a smooth surface over which wires can be drawn without trouble.

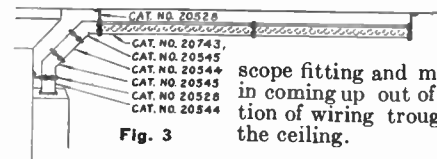


Fig. 3

Fig. 3 illustrates the use of elbows, telescope fitting and mounting brackets, in coming up out of a panel to a section of wiring trough suspended from the ceiling.

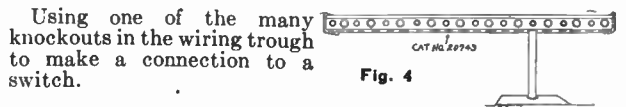


Fig. 4

Using one of the many knockouts in the wiring trough to make a connection to a switch.

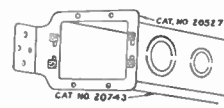


Fig. 5

Illustration shows how a bracket hanger is used to mount a section of trough to the sidewall.

Fig. 6 shows the use of the T fitting in a section of trough. The use of this fitting permits the connection to another section of trough running at right angles, to a junction box, or to make a right angle connection when the joints are not conveniently located.

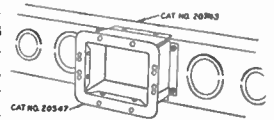


Fig. 6

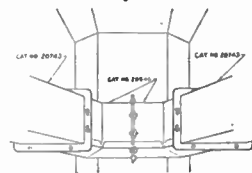


Fig. 7

Illustration shows the use of two 45° elbows, passing a column located in a corner.

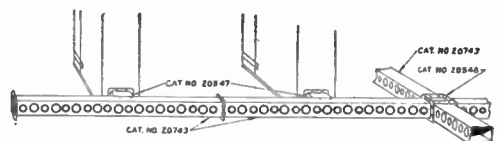


Fig. 8

Fig. 8 shows one method of using Square Duct trough to connect power panels in one common gutter. It also illustrates the use of the junction box as a cross fitting.

## Square-Duct and Fittings



No. 20443

This is a steel enclosed wiring trough for distribution wires. The trough is flanged at both ends and provided with screws so that the trough can be fastened to the power panel cabinet or so that 2 or more sections of trough can be clamped together. The cover is hinged to the trough and is provided with spring latches for fastening in closed position. Knockouts are provided in the sides and back for (1/2, 3/4, 1 and 1 1/4-inch) conduit. Knockouts 3/8-inch diameter are provided in both sides and back of wiring trough so that for surface mounting the small knockout can be knocked out to provide mounting holes for 1/4-inch screws or bolts.

Cat. No.	Each	Size Inches	Length Feet	Cat. No.	Each	Size Inches	Length Feet
20241	\$1.70	2 1/2 x 2 1/2	1	20441	\$2.30	4 x 4	1
20242	2.00	2 1/2 x 2 1/2	2	20442	3.00	4 x 4	2
20243	3.20	2 1/2 x 2 1/2	5	20443	5.00	4 x 4	5

### Universal Drop Hanger



For suspending wiring trough from overhead. Provided with screws and nuts.

Cat. No.	Each	Size Inches
20217	\$ .20	2 1/2 x 2 1/2
20417	.30	4 x 4

### Reducing Fitting

For joining 4x4-inch to 2 1/2 x 2 1/2-inch duct.

20422	\$ .40
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### Telescope Fitting



Slide arrangement for making connections to duct fittings at varying distances. The 2 1/2 x 2 1/2-inch size extends from 7 1/2 to 12 inches; 4x4-inch size from 8 to 12 inches.

20244	\$2.00	2 1/2 x 2 1/2
20444	2.80	4 x 4

### Closing Plate



To close end of section or any side of junction box. With knockouts.

20216	\$ .36	2 1/2 x 2 1/2
20559	.40	4 x 4

### Universal Bracket Hanger



For mounting wiring trough on side wall.

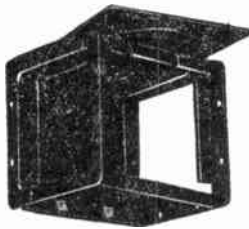
Cat. No.	Each	Size Inches
20227	\$ .20	2 1/2 x 2 1/2
20427	.30	4 x 4

### Panel Fitting Collar

For connecting duct to panels. By cutting hole size of duct in panel box and clamping box wall between panel fitting collar and duct collar, a solid, smooth connection is made.

20221	\$ .36	2 1/2 x 2 1/2
20421	.40	4 x 4

### Junction Box



To form T, L or cross. Price includes two closing plates. Removable cover.

20248	\$1.70	2 1/2 x 2 1/2
20448	2.00	4 x 4

### Trough Collar



Used when necessary to cut standard duct.

20240	\$ .30	2 1/2 x 2 1/2
20440	.40	4 x 4

## Square-Duct Fittings

### Pull Box



For 4x4-inch duct only.

Box price does not include closing plates for unused openings. (See No. 20559.)

Cat. No.	Each	Size Inches
20558	\$12.00	.....

### Box Fitting



For connecting duct to panels, pull boxes, etc. One end fits round hole in box, the other end matching duct collar.

Cat. No.	Each	Size Inches
20249	\$1.80	2 1/2 x 2 1/2
20449	2.60	4 x 4
*20467	2.60	4 x 4

\*For 4x4-inch square hole in box or panel cabinet.

### Elbows



#### 22 1/2° Elbows

20255	\$2.00	2 1/2 x 2 1/2
20455	3.00	4 x 4

#### 45° Elbows

20245	\$2.00	2 1/2 x 2 1/2
20445	3.00	4 x 4

### 90° Elbow and Pull Box



20472	\$6.00	4 x 4
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### T Fitting



For T connection. Cut hole inside of duct and drill holes to match holes in flange on narrow end of fitting.

20247	\$1.70	2 1/2 x 2 1/2
20447	3.00	4 x 4

### T Fitting and Pull Box



20471	\$7.00	4 x 4
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### Enclosed Cut-Outs



Cat. No.	Description	With Cut-Out Each
SK-2191	30 Amp., 600 V., 3-Pole Cut-Out in Box.....	\$6.20
SK-2192	60 Amp., 600 V., 3-Pole Cut-Out in Box.....	7.30

No. SK-2191 Attached to Square-Duct

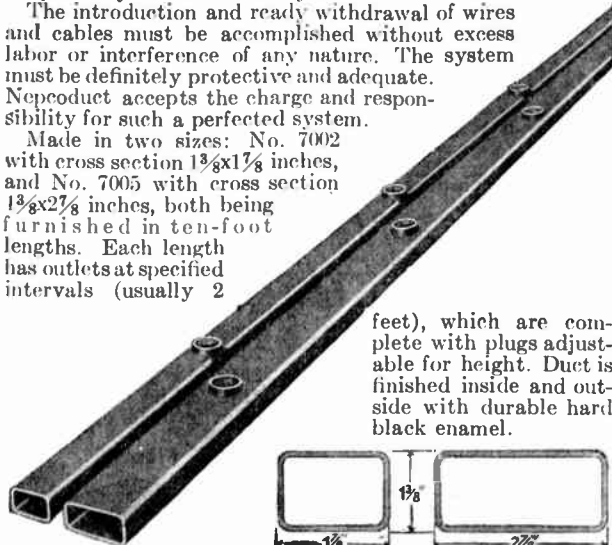


**Nepcoduct Under Floor Wiring System**

Convenience outlets arranged for in circuit wiring systems, under floors, must of necessity be of very definite and rugged design and construction—but the prime importance is adaptability and accessibility at floor surfaces.

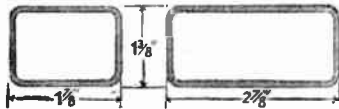
The introduction and ready withdrawal of wires and cables must be accomplished without excess labor or interference of any nature. The system must be definitely protective and adequate. Nepcoduct accepts the charge and responsibility for such a perfected system.

Made in two sizes: No. 7002 with cross section  $1\frac{3}{8} \times 1\frac{1}{8}$  inches, and No. 7005 with cross section  $1\frac{3}{8} \times 2\frac{1}{8}$  inches, both being furnished in ten-foot lengths. Each length has outlets at specified intervals (usually 2



No. 7002

feet), which are complete with plugs adjustable for height. Duct is finished inside and outside with durable hard black enamel.

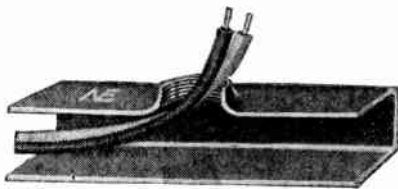


No. 7005

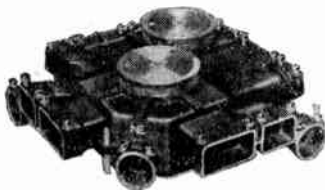


Rounded Bull Nose or filleted corners of Nepcoduct reduce tendency to cracking of concrete and surface floor materials.

Sweeping curve from inside of Nepcoduct up to rim of outlet makes pulling of wires easy, and safeguards insulation against abrasion.



**Floor Junction Boxes**



Nepcoduct 4-way floor junction box No. 7542-45 is in reality, two boxes and two sets of crossovers, in a one-piece casting of gray iron—one box and cross-over to be used for high potential, and the other box and cross-over for low

potential. No communication is to be had between the low and high potential boxes.

Box capacity is unusually large to accommodate splices and terminal blocks, unobstructed by cross-overs. Box is finished inside and out with black enamel.

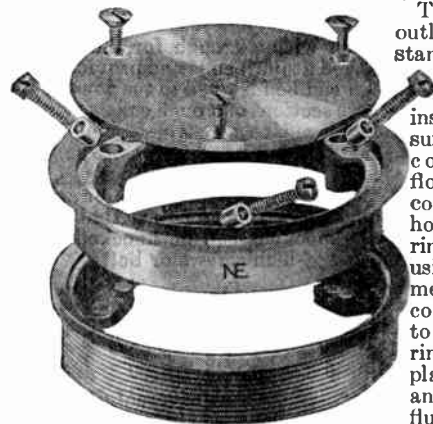
It is levelled, regardless of uneven surfaces, by adjustment of three long set screws located around edge upon which box rests.

Two outlet assemblies installed in box above are the standard outlet and cover. Unused duct openings in box are to be closed with duct opening plug and unused openings for conduit are to be closed with conduit opening plug and adapter.

Single compartment underfloor junction boxes are available; box No. 7542 has six openings for  $1\frac{3}{8}$  inch x  $1\frac{1}{8}$  inch Nepcoduct, and two openings for  $1\frac{1}{4}$  inch conduit; box No. 7545 has four openings for  $1\frac{3}{8}$  inch x  $2\frac{1}{8}$  inch Nepcoduct, and two openings for  $1\frac{1}{4}$  inch conduit. These boxes are for installation in Single Duct Systems, and take the same size and type floor outlets as the large two compartment box.

**Nepcoduct Under Floor Wiring System  
Floor Junction Boxes**

**Standard Outlet and Cover for Linoleum,  
Rubber Tile, Cork Tile, Carpet**



This junction box outlet assembly is the standard for all floor junction boxes.

The assembly is installed flush with surface of finished concrete or wood floors. When floor coverings are used, however, the brass ring is forced up, using novel arrangement of screws. Floor covering is then cut to fit around brass ring, and it is replaced in position and drawn down flush with newly installed floor covering. Rim of brass ring holds floor covering down securely, and renders the box waterproof.

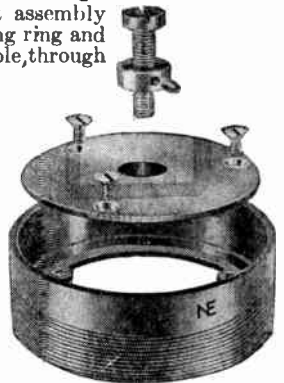
stalled floor covering. Rim of brass ring holds floor covering down securely, and renders the box waterproof.

**Special Outlet and Cover for Marble  
and Wood Flooring**

When this junction box outlet assembly is installed, only rim of adjusting ring and head of elevating screw are visible through marble or wood floor.

Adjustment is made for thickness of marble or wood, by turning adjusting ring down into floor junction box, so that top rim is set level with finished surface. Brass cover fastens inside adjusting ring with small screws shown, and there is ample depth above it for filling in with floor material.

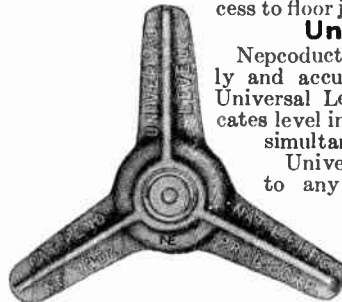
A circular section of marble or wood is placed inside adjusting ring and is secured in position by turning down elevating screw. Threaded collar on elevating screw provides means for lifting out circular section of marble or wood to gain access to floor junction box.



**Universal Levels**

Nepcoduct floor junction box is quickly and accurately levelled by use of Universal Level, No. 7952, which indicates level in every horizontal direction simultaneously.

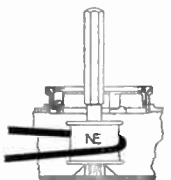
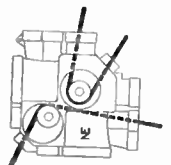
Universal Level may be applied to any article which is to be brought to a level position on more than one horizontal line.



**Wire Pulling  
Sheeves**

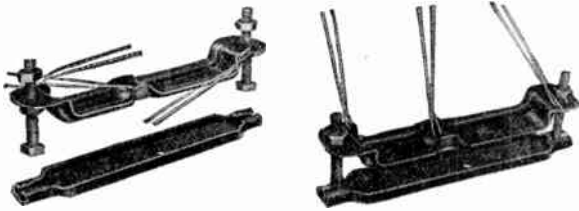
Wires and cables can be pulled through Nepcoduct floor junction box at any angle, from any direction with use of the Cable Pulling Sheeve No. 7970, as indicated in the mechanical drawings.

Shaft of sheeve engages a tapped boss in bottom of the junction box. A spider fits upper part of box, and a jam nut locks the whole assembly into position to insure rigidity when sheeve is in use. Wires can be pulled from lower entrance of ducts to upper entrance (in high potential compartment), and around any required bend without adjustment. In low potential compartment, there is no difference of elevation in duct entrances.





## Nepcoduct Under Floor Wiring System Adjustable Duct Saddle Supports



Double duct saddle support is a valuable labor saving device, it eliminates errors of position, a costly labor item. Every part of Nepcoduct system is laid out when base members of saddle support are installed, all other parts of system having definite relation to them. Slight projection of base members from floor arch, and their rugged construction make them stand up under abuse of wheelbarrows and mud buggies, and conditions of normal construction operations. Saddle support holds Nepcoduct down as well as up and keeps it from floating in wet concrete fill.

No. 7425, for large and small Nepcoduct.

No. 7422, for two lines of small Nepcoduct.

Adjustment is made for height of Nepcoduct by spinning adjustment nuts up or down on bolts. Both lateral and longitudinal adjustments of duct are easily made.

Saddle slips into place when adjusting nuts are loose. Saddle is rigid with base member when adjusting nuts are locked above and below it.

Base members of saddle support are installed on floor as early as possible, to indicate lines of Nepcoduct, thus avoiding interference of other trades' work.

Seats in saddle for duct are stamped accurately, and hold ducts in proper relation to each other, as well as to the finished floor.

Tie wires, when twisted over top of ducts, hold them firmly in saddle.

### Elbows and Offsets

#### 90° Flat Floor Elbows Long Radius



No. 7215 for large Nepcoduct.  
No. 7212 for small Nepcoduct.

#### 90° Vertical Wall Elbows Long Radius

Can be used as shipped, or sawed in sections as indicated by 2 illustrations on the right, to meet requirements of situation.

No. 7225, for large.  
No. 7222, for small.



#### 90° Vertical Wall Elbows Short Radius



No. 7235, for large Nepcoduct.  
No. 7232, for small Nepcoduct.

### Duct End Outlets

With Height Adjusting Screw

Fits on end of Nepcoduct and receives standard duct outlet plug.

No. 7725, for large Nepcoduct.  
No. 7722, for small Nepcoduct.



### Cross-Under Offsets



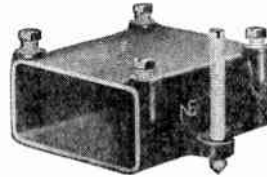
Designed to offset lines of Nepcoduct so that conduit, pipe, or other lines of duct can cross within floor thickness.

No. 7325, for large.  
No. 7322, for small.

## Nepcoduct Under Floor Wiring System Miscellaneous Fittings

### Couplings

With Height Adjusting Screw



No. 7165 for large Nepcoduct.

No. 7162 for small Nepcoduct.

### Duct End Blanks

With Height Adjusting Screw

No. 7715 for large Nepcoduct.

No. 7712 for small Nepcoduct.



### Duct Opening Plugs

No. 7745 for large Nepcoduct.

No. 7742 for small Nepcoduct.



Closes unused duct openings in floor junction box. Easily removed by gripping middle vertical partition with pliers.

### Connectors—Duct to Cabinet

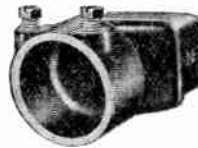
No. 7755 for large Nepcoduct.

No. 7752 for small Nepcoduct.

Takes Nepcoduct runs into wall cabinet.



### Adapters—Duct to Conduit



No. 7732 and No. 7762



No. 7762-F

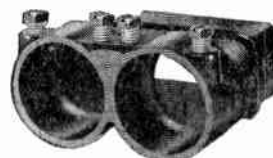
No. 7732 with male end to fit coupling for small Nepcoduct, and female opening for 1¼-inch conduit.

No. 7762 with male end to fit coupling for small Nepcoduct, and female opening for 1-inch conduit.

No. 7762-F with female end to fit small Nepcoduct, and female opening for 1-inch conduit.

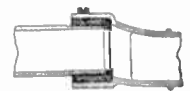
No. 7735 with male end to fit coupling for large Nepcoduct, and 2 female openings for 1¼-inch conduit.

Two openings for 1¼-inch conduit permit branching from duct to conduit with wiring up to full duct capacity.



No. 7735

### Conduit Opening Plugs and Reducers



Closes unused conduit openings in floor junction box. Threaded inside for 1-inch conduit. With tin cap removed, it can be reversed end to end, screwed on end of conduit, serving thus as reducer in 1¼-inch opening of floor junction box. (See line drawing above.)

No. 7780 Conduit Opening Plug and 1¼ to 1-inch size reducer.

No. 7781 Conduit Opening Plug and 1¼ to ¾-inch size reducer.

**Nepcoduct Under Floor Wiring System**  
The Evolution of an Outlet



No. 7950, Plug Removal Wrench  
End Fits Depressions in Top of Outlet Plug



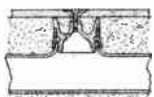
No. 7140, Floor Covering Escutcheon of Red Bronze  
No. 7141, Floor Covering Escutcheon of Monel



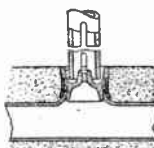
No. 7143, Abandoned Outlet Plate

**Type A Plug**

Lines of Nepcoduct are embedded in concrete fill with plugs screwed down into duct outlets. Plugs may or may not be concealed by floor construction, and marker screw can be elevated to show at floor when required.

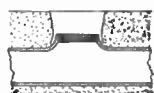


Rubber collar locks plug in adjusted position, protects plug threads from concrete, and seals the joint between plug and rim of duct outlet against entrance of moisture. When marker screw is to show through floor coverings of linoleum, rubber, cork tile or carpet, the escutcheon shown above is used to protect such floor coverings from fraying.

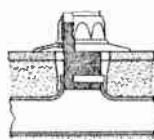


When duct outlet is to be used for service, it is necessary to remove small amount of concrete from top depression of plug in order to use the plug removal wrench. Plug can be readily screwed from the duct and concrete with plug removal wrench of which the socket end is shown.

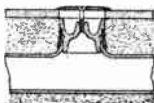
Removal of plug leaves neat pre-formed passage through the concrete to duct outlet. Void in concrete around rim of duct outlet is a catch-all for dirt and small particles.



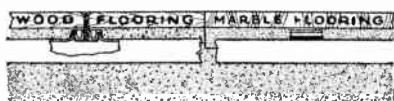
Service Extension Assembly No. 7910 directly engages the duct outlet without use of any forms of adapters, insuring positive protective grounding, as required in National Electrical Code. Stopping collar is sweated in place in manufacture, and serves as a gauge so that service extension pipe will always be turned into duct outlet to proper depth.



When outlet is abandoned, the plug is screwed again into duct outlet, and an abandoned outlet plate is pulled tight over opening in floor material, by tightening marker screw into plug.

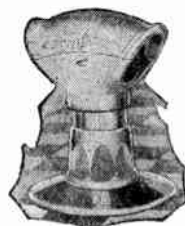


**Type B Plug**



Type B plug, when adjusted, protrudes very slightly above top rim of duct outlet. This shallow plug is intended for use where duct is installed under wood or marble, as it is impracticable to cut a number of holes in the underside or through these materials to fit over a Type A plug protruding above level of concrete fill; when the Type B plug is used, holes need be cut only where duct outlet is to be used for service. Other outlets are located by marker screws, or by measurement.

**Nepcoduct Under Floor Wiring System**  
No. 7921 Service Fittings



This fitting is used for either high or low potential service from the duct. It is entirely brass with the exception of required insulating bushings or terminal block which are completely housed within it. The service assembly presents a neat symmetrical appearance entirely consistent with the most pretentious office furnishings, and is very sturdy in construction.

Since the fittings will frequently occupy positions under desks or in foot space, they are purposely designed to be kick proof. They will stand any reasonable abuse in connection with exposed position. Ribs at two ends of opening prevent desk occupant's feet from injuring connection, attachment plug is sufficiently protected so that the feet will not strike the plug itself, thereby eliminating interruptions to service.

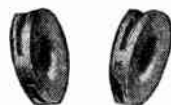
**No. 7911 Service Heads**

Service Head No. 7911 is a housing for duplex T-slot receptacle No. 7912 for high potential service, such as for lighting, or various electric driven office appliances; or housing for bushings for low potential service to telephones and various office signal systems. Can be assembled with double T-slot receptacle shown, for high potential service, in which standard attachment plugs are used, or with two bushings illustrated below, for low potential service.



**Service Head Bushings**

Fibre bushings which are clamped securely just inside outlets of service head when it is assembled. Designed to prevent contact and abrasion between edges of head outlets, and low potential wires.



No. 7913, 1/2-inch low potential service bushing.  
No. 7914, 1-inch low potential service bushing.

**No. 7910 Service Extension Assembly**

Delivered fully assembled, as shown, is adjustable to accommodate floor thicknesses approximately 1 to 2 inches above the duct. The stopping collar is sweated in place to insure proper depth engagement with duct outlet. When service pipe is screwed into outlet to shoulder engagement, a very tight joint is effected. The floor flange is screwed down to a bearing on finished floor surface, further stabilizing extension assembly.



It is provided with holes for spanner wrench, so that by use of the wrench considerable pressure can be applied between floor flange and finished floor, giving an extraordinary strength to whole installation. Locking collar is jammed against floor flange by turning it down with other end of spanner wrench. Besides acting as a locknut for floor flange, it hides spanner wrench holes, and the unused threads on service extension pipe.

Service extension pipe itself has an unobstructed cross sectional area of 1 square inch through which to pull service wires. The whole service extension assembly is delivered fully assembled which saves field labor, and is adjusted easily for various floor thicknesses.

**No. 7951 Service Extension Wrenches**



Lugs on one end fit into holes in floor flange, for tightening it down against finished floor. Half octagon socket on other end fits around locking collar, for tightening it down against floor flange.



## T & B Watertight Floor Boxes



Box is furnished with polarized receptacle plug.

Three outlets in sides and 2 in bottom for 1/2-inch rigid conduit or any connector with 1/2-inch threads.

Has 5 tapped holes for 1/2-inch conduit, 4 of these are plugged with watertight steel plugs.

Box is Tabolite finish, bronze cover.

Outside diameter: Box body (under flange), 2 3/4"; overall (face of plate), 3 3/4". Outside height: Box body (under flange), 2 5/8"; overall, including plate but not nozzle, 3". Height of nozzle, 1 1/4"

Standard package, 25. Weight, 70 pounds.

- No. 1700, Box with 2-Wire Recp. .... each \$4.00
- No. 1701, Box with 3-Wire Recp. .... each 5.00
- No. 1702, Box with 3-Wire Grnd. Recp. .... each 5.00
- No. 1703, Phone or Signal Floor Box, No Recp. .... each 3.00

## No. 8000 T & B Utility Outlets

10 Amperes, 250 Volts—15 Amperes, 125 Volts



An ideal convenience outlet for baseboards, plaster walls, mantles, etc.

Screws slip through keyhole slots in bottom of box. When tightened, box body, connector and convenience outlet become a rigid, compact unit.

Total height, 2 1/4 inches. Diameter body, 1 3/8 inches; diameter plate, 2 1/2 inches.

Tabolite finish.

Standard package, 50.

Price, No. 8000 ..... each \$1.00

## T & B Adjustable Watertight Floor Boxes



No. 1730, with Bell Nozzle

The bell nozzle is not standard equipment.

Adjustment range is 5/8-inch vertical and 10 degrees angular.

Minimum height of deep series boxes is 3 1/2 inches; of shallow series, 3 inches. Cover plate is 4 inches in diameter.

Unit package, 1; standard package, 10.

Description	CAT. No.		Each
	Deep Series	Shallow Series	
Box with 2-Wire Receptacle.....	1730	1760	\$5.00
Box with 3-Wire Receptacle.....	1731	1761	5.50
Box with 3-Wire Grounded Receptacle..	1732	1762	5.50
Tel. or Signal Box, No Receptacle.....	1733	1763	4.00

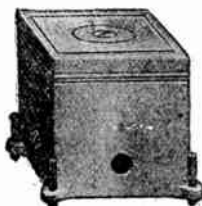
## T & B Rectangular Gang Floor Boxes

### Adjustable—Watertight

Combination 1/2 and 2-inch bronze disc with each gang is standard equipment. Receptacles and other accessories must be ordered separately. Two 1/2-inch drilled and tapped holes straight through each gang and one at each end of box is standard, with all but one hole in each gang plugged. Boxes drilled and tapped to specification, no extra charge.

Adjustment, 5/8-inch vertical, 10 degrees angular.

Unit package is 1. Standard package is \$60.00 net value.



No. 1810

Cat. No.	Each	No. of Gangs	DIMENSIONS, IN.		
			Min. Ht.	Width	Lgth.
1810	\$5.00	1	4 7/8	4 5/16	4 5/16
1820	10.00	2	4 7/8	4 5/16	8 3/8
1830	15.00	3	4 7/8	4 5/16	12 7/16
1840	20.00	4	4 7/8	4 5/16	16 1/2
1850	25.00	5	4 7/8	4 5/16	20 9/16

## T & B Floor Box Accessories

For 1700, 1720, 1730, 1750 and 1760 Series

No. 1707



No. 1707 Disc

Bronze disc; standard equipment on entire 1700 series of boxes except 1703, 23, 33, 53 and 63.

No. 1707 ..... each \$ .25

No. 1708



No. 1708 Nozzle

Bronze bushed outlet nozzle; standard equipment on 1700-1-2; 1720-1-2; 1750-1-2.

No. 1708 ..... each \$ .80

No. 1709



No. 1709 Disc

Bronze disc with 1/2-inch hole, for telephone or signal work; standard equipment on 1703, 23, 33, 53 and 63.

No. 1709 ..... each \$ .80

No. 1710



No. 1710 Reversible Disc

Bronze reversible disc with fiber bushing.

No. 1710 ..... each \$1.00

No. 1739

Bronze bushed triple nozzle.

No. 1739 ..... each \$1.50

\*No. 1742

Bushed extension piece, 1/2" pipe size, 6" long.

No. 1742 ..... each \$1.70

\*No. 1745

Two 2-wire receptacles (15 amperes 125 volts each) on extension 1/2" pipe size, 6" long.

No. 1745 ..... each \$3.50



No. 1739 Triple Nozzle



No. 1742 Extension Piece



No. 1745 Duplex Receptacle Extension

\*Bushed extension piece can be furnished in any length. Extensions furnished in 3/4 and 1-inch stock, any length. Standard package, \$60.00 net value. Accessories may be assorted with complete boxes to obtain standard package.

## No. 499 Steel City Midget Floor Receptacles and Boxes

Provides smallest possible convenience outlet for work which does not have to be watertight.

A 10-ampere receptacle insulates wires from contact with box body.

Flange around top of box, 2 5/8 inches in diameter; 3/8 inch thick with beveled edge. Height of box, 3 3/4 inches overall.

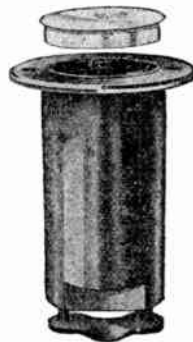
Box Body furnished with 1/2 inch drilled and tapped hole in bottom complete with loom clamp held in place by two screws.

By removing loom clamp either a BX connector or rigid conduit can be used.

Standard package 25.

Weight, 11 ounces.

Price, No. 499 ..... each \$2.40



## Fullman Non-Adjustable Type Floor Outlets

Designed to take a 25-ampere receptacle.

Inside dimensions of box body, 4x4x3 1/2 inches deep. Standard bronze cover plate is 3/8 inch thick and 4 3/8 inches square extending 1/4 inch beyond edge of box body on all 4 sides; has

2-inch tapped hole in center for bell nozzle.

Cat. No.	Description	Wt. Lbs.	Price Each
495	Outlet with Bell Nozzle, without Receptacle.....	6 1/2	\$4.40
496	Outlet with Bell Nozzle, Complete with 10-Ampere Receptacle Mounted on Flat Steel Ring.....	6 3/4	5.50
497	Outlet with Extra Large Bell Nozzle, 25-Ampere Receptacle, Mounted on Flat Steel Ring.....	7 1/4	9.00



**Fullman Non-Adjustable Floor Outlets**

**No. 477**

PATENTED AND PATENTS PENDING



No. 477



Sectional View of No. 477 Showing Receptacle Mounted on Steel Ring

Design and construction of the No. 477 is simple with few parts, small outside dimensions and plenty of room inside for wiring. Fitted complete with receptacle and bell nozzle. The receptacle is mounted on a flat steel ring which also serves as a seat for the bell nozzle or flush bronze plug. This construction permits use of only one rubber gasket.

Cover plate is 3½ inches in diameter with 2-inch opening for bell nozzle or flush bronze plug. Height is 3⅞ inches to top of cover plate.

Conduit holes: 1 in each side and 2 in bottom tapped for ½-inch conduit. Three of the holes are plugged with bronze plugs.

All bronze parts are brushed bronze finish. All iron and steel parts are sherardized to prevent rust.

Standard package, 25 complete outlets.

Complete outlet as described, consists of No. 481 box body, No. 478 porcelain plug, receptacle and flat steel ring, No. 484 rubber gasket, No. 483 bronze cover plate, No. 480 flush bronze plug and No. 479 bell nozzle.

Weight, 2½ pounds.

Price, No. 477.....each \$4.00

**No. 490**

Complete outlet similar to No. 477, consisting of Nos. 481, 482, 484 and 487 parts listed below. Nos. 465 and 467 nozzles can be used in cover plate.

Weight, 1¾ pounds.

Price, No. 490.....each \$2.60

**No. 491**

Complete outlet same as No. 477, except furnished complete with 20-ampere polarized receptacle and plug and No. 466 bell nozzle.

Weight, 2¾ pounds.

Price, No. 491.....each \$5.60

**Parts for Nos. 477, 490 and 491 Outlets**

Cat. No.	Description	Wt. Oz.	Each
478	Porcelain Plug, Receptacle and Flat Steel Ring.....	7	\$1.10
479	Bronze Bell Nozzle.....	2	1.10
480	2-Inch Flush Bronze Plug for No. 483 Cover.....	2	.70
481	Box Body Only.....	20	1.60
482	Bronze Cover Plate with Plug.....	6	1.20
483	Bronze Cover Plate with Plug.....	4	1.60
484	Rubber Gasket.....	1	.24
487	½-Inch Flush Bronze Plug for No. 482 Cover.....	1	.60
492	20-Ampere Polarized Receptacle and Plug, Steel Ring, Bronze Cover Plate and Rubber Gasket for No. 491 Box.....	16	4.40

**Fullman Adjustable Floor Outlets**

PATENTED AND PATENTS PENDING

Cover plates are 4 inches in diameter, ¼ inch thick sheet bronze. The flange ring is ⅛ inch thick, making the total diameter of the top of box 4¼ inches.

The height of standard box is 3¾ inches over all. Other heights may be had by the following combinations:

No. 402 body with No. 406 adjusting ring, minimum over all, 4¼ inches; with No. 407, 4⅞ inches; with No. 408, 5½ inches.

No. 404 body with No. 405 adjusting ring, minimum over all, 4⅞ inches; with No. 406, 4⅞ inches; with No. 407, 5½ inches; with No. 408, 6⅞ inches.

An adjustment of ½ inch higher may be had on each of these measurements in setting adjusting rings in the No. 476 cement. These boxes can be furnished special with shallow box body making minimum height 3¼ inches over all.

Conduit holes: Standard is 4 holes tapped for ½-inch conduit, 3 of which are plugged with brass plugs, making them water tight. Can be tapped for larger conduit without extra cost to meet requirements when sketches are furnished showing size and location of conduit holes. Only 1 conduit hole can be tapped in each of 4 sides of box bodies. Plugs larger than ½-inch charged for extra.

Receptacles are not furnished unless ordered.



No. 400, Complete



No. 400 No. 401, Complete

Complete standard outlet consisting of No. 402 box body tapped for ½-inch conduit, No. 405 combination adjusting ring and bronze flange ring, No. 409 bronze cover plate with No. 471 ½-inch bronze plug, No. 411 rubber gasket, and No. 476 sealing cement. Weight, 5 pounds. Price, No. 400.....each \$5.20

**No. 401**

Complete standard outlet consisting of No. 402 box body tapped for ½-inch conduit, No. 405 combination adjusting ring and bronze flange ring, No. 410 bronze cover plate with No. 472 2-inch bronze plug, No. 414 steel plate, forming seat for No. 411 rubber gasket, and No. 476 sealing cement. Weight, 5 pounds.

Price, No. 401.....each \$5.20

At an extra cost, both Nos. 400 and 401 outlets may be had with the special No. 404 deep body box tapped for standard ½-inch conduit or tapped special to meet specified requirements. Special depth adjusting rings, Nos. 406, 407 and 408, can be furnished at extra cost.

**Parts for Nos. 400 and 401 Outlets**



No. 402 Body



No. 404 Body

**No. 402 Standard Box Body**

Standard tapping is 4 holes tapped for ½-inch conduit, 3 of which are closed with ½-inch bronze plugs. Can be tapped for ¾ or 1-inch conduit, when specified. Height over all, 3⅞ inches; depth of groove, 1 inch; opening in top, 3¼ inches in diameter. Weight, 3½ pounds. Price, No. 402.....each \$3.30

**No. 404 Special Deep Box Body**

Can be tapped for conduit up to 1½ inches with room for bushing inside or for 2-inch conduit without room for bushing. Height over all, 3¾ inches; depth of groove, 1 inch; opening in top, 3 inches in diameter. Weight, 6¼ pounds. Price, No. 404.....each \$4.40

## Fullman Adjustable Floor Outlets

### Separate Parts Adjusting Rings



No. 405

The No. 405 adjusting ring is 1½ inches deep over all (standard). Deeper rings also furnished as per Nos. 406, 407 and 408. These rings give a range of adjustment of about 2½ inches. All are interchangeable.

Cat. No.	Description	Net Wt. Lbs., Ea.	Each
405	Standard Combination Adjusting Ring and Bronze Flange Ring, 1½ Inches Deep Over All	1	\$1.40
406	Combination Adjusting and Bronze Flange Ring, 2⅛ Inches Deep	1¼	1.50
407	Combination Adjusting and Bronze Flange Ring, 2¾ Inches Deep	1½	1.60
408	Combination Adjusting and Bronze Flange Ring, 3⅛ Inches Deep	1¾	1.70

### No. 409 Bronze Cover Plates



No. 409

No. 409 bronze cover plate has a diameter of 4 inches with ½-inch plug in center for Nos. 465 and 467 nozzles, No. 471 flush bronze plug or ½-inch pipe extension. Net weight, 9 ounces.

No. 409..... each \$1.80

### No. 410 Bronze Cover Plates

No. 410 bronze cover plate has a diameter of 4 inches with 2-inch plug in center for No. 466 nozzle or No. 472 flush bronze plug. Net weight, 8 ounces.

No. 410..... each \$1.80



No. 410

### No. 465 Nozzles



No. 465

No. 465 nozzle is threaded to fit a ½-inch conduit hole in No. 409 cover plate. The two openings are for wire extensions.

Net weight, 4 ounces.

No. 465..... each \$1.50

### No. 466 Nozzles

No. 466 nozzle is threaded to fit a 2-inch opening in No. 410 cover plate. This nozzle protects the porcelain plug from injury when inserted in receptacle.

Net weight, 3 ounces.

No. 466..... each \$1.00



No. 466

### No. 467 Nozzles

No. 467 nozzle is threaded to fit a ½-inch conduit hole in No. 409 cover plate. Net weight, 3 ounces.



No. 467

No. 467..... each \$1.00

### No. 468 Duplex Nozzles

Cast bronze combination duplex nozzle for use with No. 409 cover plate when duplex receptacle is used.

Can be furnished with 2 duplex receptacles allowing 4 connections at extra cost.

No. 468..... each \$5.00

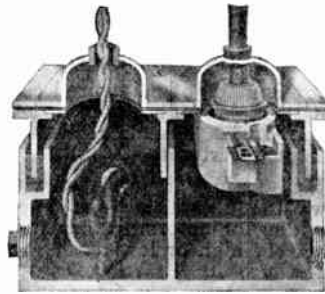


No. 468

### Miscellaneous Parts

Cat. No.	Description	Net Wt. Oz., Each	Each
411	Rubber Gasket	¼	\$ .20
471	½-Inch Flush Bronze Plug	½	.50
472	2 Inch Flush Bronze Plug	1	.60
476	Sealing Cement for One Outlet	4	.20

## Fullman Gang Floor Outlets



This rectangular gang floor outlet is for supplying a variety of service, such as electric lights, fans, telephones, etc., from one point.

It makes a neater appearance than several single outlets grouped near a desk or table.

Lugs are provided in each section for flush type receptacles.

No. 459 cover plates are furnished standard for use with No. 466 bell nozzle. No. 458 cover plate may be substituted for one or more sections if desired for use with No. 465 or No. 467 nozzles or ½-in. pipe extension. Bronze edge frame extends around all cover plates.

Minimum height to top of cover plate is four inches. Box body only is 3¼ inches high. The cover of No. 441 outlet is 5½ inches by 4 inches over all. The cover of No. 442 outlet is 5½ inches by 7 inches over all. Each additional section adds three inches.

End sections are provided with three holes tapped for ½-inch conduit. Intermediate sections have two ½-inch tapped holes. Can be tapped for ¾-inch and 1-inch conduit with room for bushings or for 1¼-inch conduit without room for bushings. Sketches must be furnished showing size and location of conduit holes if special tapping is required.

All bronze parts furnished brushed bronze finish. All iron and steel parts sherardized to prevent rust.

### Complete Outlets

Complete rectangular outlets are regularly furnished with No. 459 cover plates. Can be provided with No. 458 cover plates when specified.

Cat. No.	Each	No. of Gangs	Net Wt. Lbs., Each	Cat. No.	Each	No. of Gangs	Net Wt. Lbs., Each
441	\$5.70	1	6¼	444	\$22.80	4	21½
442	11.40	2	12	445	28.50	5	28
443	17.00	3	17¾	446	34.20	6	32

### Bodies Only

447	\$3.50	1	4	450	\$14.00	4	14
448	7.00	2	7½	451	17.50	5	16½
449	10.50	3	11½	452	21.00	6	19

### Adjusting Frames with Rubber Gasket and Bronze Edge Frame

488	\$2.50	1	1½	455	\$10.00	4	6
453	5.00	2	2¾	456	12.50	5	7½
454	7.50	3	4	457	15.00	6	8½

### Bronze Cover Plates

Cat. No.	Description	Net Wt. Oz., Ea.	Each
458	For One Section of Gang Outlet with ½-Inch Flush Bronze Plug. Takes Nos. 465 and 467 Nozzles.	7	\$1.80
459	For One Section of Gang Outlet with 2-inch Flush Bronze Plug. Takes No. 466 Nozzle	7	1.80

### Nozzles

465	Bronze Drip, for No. 458 Cover Plate	4	\$1.50
466	Bronze Bell, for No. 459 Cover Plate	3	1.00
467	Bronze Stem, for No. 458 Cover Plate	3	1.00

### Brass Plugs

471	½-Inch Flush Bronze Plug	½	\$ .50
472	2-Inch Flush Bronze Plug	1	.60

### Sealing Cement

476	For One Outlet or One Section of Gang Outlet	4	\$ .20
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**R & S Non-Adjustable Floor Boxes**



A high grade floor box intended for use in wood flooring, easy to install and can be firmly secured.

Box is made of galvanized cast iron, floor plate of heavy brass and provided with suitable gaskets to make it watertight.

These fittings are furnished with or without receptacles and plugs, providing for uniformity when used for either high or low tension installations.

Height, 3¼ inches; diameter of floor plate, 3½ inches. Two ½-inch outlets on sides; two ½-inch outlets on bottom; three outlets plugged. Cannot be tapped for larger conduit. Receptacle and plug, 10 amperes 250 volts, furnished with No. 2580. All parts of these floor boxes are interchangeable and various available combinations of boxes and accessories can be furnished. Each box is packed in a strong carton.

**No. 2580**

Furnished complete with receptacle, cone nozzle and 2½-inch diameter flush cap. Weight, about 2½ pounds.

Price, No. 2580.....each \$4.00

**No. 2590**

Plain box and cover with ½-inch pipe flush cap. Weight, about 1¾ pounds.

Price, No. 2590.....each \$3.00

**No. 2581**

Furnished complete with 3-wire receptacle, plug, cone nozzle and 2½-inch diameter flush cap.

Weight, about 2½ pounds.

Price, No. 2581.....each \$5.00

**R & S Shallow Type Adjustable Floor Boxes**



No. 2504

This floor outlet can be used with a 3-inch floor fill. It is designed and constructed along the same lines as the larger type box. All cast iron parts are galvanized and the adjustable flange and cap are of brass with a machined finish across the top.

The No. 2504 box is furnished complete with a tee slot receptacle, which will accommodate the standard type plug cap and will take the standard No. 2558 cone nozzle same as used in conjunction with the larger type floor boxes. Gaskets are provided to make this box watertight.

**ADJUSTMENTS.**—Ample angular and ¾-inch vertical.

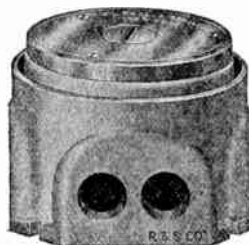
**OUTLETS.**—Maximum size, ¾ inch. When ordering specify outlets required.

Height, 2½ inches minimum. Diameter box, 3¼ inches. Diameter flange ring, 3⅜ inches.

Cat. No.	Description	Weight Pounds	Price Each
2504	Complete with Tee Slot Receptacle and 2½-Inch Diameter Flush Cap.....	2¾	\$5.50
2505	Complete with ½-Inch Flush Cap but without Receptacle.....	2¾	5.00
2509	Special Tee Slot Receptacle for Use with No. 2504.....	2 oz.	.50
2558	Cone Nozzle with Composition Bushing..	¼	1.00

**R & S Adjustable Floor Boxes**

**Round Type**



No. 2502

This box is of simple design, making it easy to install. Special adjustment and grounding feature eliminate the use of special cement. The box is ruggedly designed and equipped with a flange ring to prevent chipping of the finished floor.

Maximum size of outlets, 1 inch. When ordering, specify outlets required.

Cat. No.	Each	Description	Wt. Lbs.
2502	\$4.00	With ½-In. Pipe Size Cap in Cover Plate	4
2503	4.50	With 2½-In. Pipe Size Cap in Cover Plate	4

**Rectangular Gang Type**



No. 2537 ½-Inch Cover Plate



No. 2512 with One No. 2537 and One No. 2538 Cover Plate



No. 2538 2¼-Inch Cover Plate

Maximum size of outlets, 1½ inches. When ordering, specify outlets required.

2511	\$5.00	Single Gang with No. 2537 Cover Plate..	7
2512	10.00	2-Gang with 2 No. 2537 Cover Plates...	12
2513	15.00	3-Gang with 3 No. 2537 Cover Plates...	15½
2514	20.00	4-Gang with 4 No. 2537 Cover Plates...	19½
2515	25.00	5-Gang with 5 No. 2537 Cover Plates...	31½

For No. 2538, 2½-inch cover plates, add 50 cents each.

**R & S Combination Floor Extensions**

10 Amperes, 250 Volts and Low Tension



No. 3000 Duplex Receptacle Outlet

These extensions are suitable for floor boxes and all underfloor-duct systems. Used in banks, offices, libraries, etc. for connection of desk lamps, dictaphones, adding machines, desk pads, telephones, etc.

Heavy bakelite interiors mounted in forged brass casing tapped for ½ or ¾-inch extension stem as desired. The stem is inserted in above mentioned systems.



No. 3008 Low Tension Outlet

Height, 6 inches over all. Furnished complete or in part. Standard finish is brush brass.

Cat. No.	Description	Wt. Lbs.	Price Each
3000	Complete 10-Ampere 250-Volt Duplex Combination Set.....	1¼	\$5.00
3008	Complete Low Tension Combination Set..	1¼	4.00
2696	10-Amp. 250-V. Duplex Head Only for ½-inch Stem.....	¾	3.00
2697	10-Amp. 250-V. Duplex Head Only for ¾-inch Stem.....	¾	3.00
2686	Low Tension Head Only for ½-inch Stem..	¾	2.00
2687	Low Tension Head Only for ¾-inch Stem..	¾	2.00
1921	3½-inch Extension Nipple, ½-inch Standard Pipe Size Threaded for Flange....	¼	.80
1956	3½-inch Extension Nipple, ¾-inch Standard Pipe Size Threaded for Flange....	¼	.80
2619	Lock Flange for 1921 Extension Nipple, ½-inch.....	⅜	1.20
2620	Lock Flange for 1956 Extension Nipple, ¾-inch.....	½	1.20

Extension nipples can be furnished any length desired. Prices upon application.



## Obround Condulets

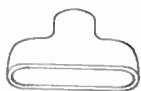
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### Form 7

Take Form 7 covers or Form 7 wiring devices.

Cadmium-galvanized finish.

#### Type A



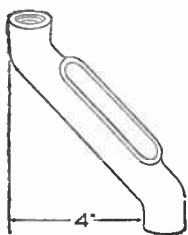
Cat. No.	Each	Size In.	Std. Pkg.
A17	\$ .24	1/2	100
A27	.31	3/4	50
A37	.43	1	20
A47	.62	1 1/4	20
A57	.80	1 1/2	10
A67	1.66	2	5
A77	4.20	2 1/2	5
A87	5.00	3	5
A97	8.15	3 1/2	5
A107	9.00	4	5
A0117	11.50	4 1/2	1
A0127	14.00	5	1
A0147	20.25	6	1

#### Type C



Cat. No.	Each	Size In.	Std. Pkg.
C187	\$ .25	1/2	50
C287	.25	3/4	50
C387	.30	3/8	50
C17	.36	1/2	100
C27	.41	3/4	50
C37	.59	1	20
C47	.94	1 1/4	20
C57	1.22	1 1/2	10
C67	2.43	2	5
C77	4.80	2 1/2	5
C87	6.20	3	5
C97	9.00	3 1/2	5
C107	11.00	4	5

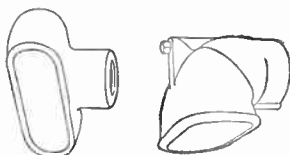
#### Type CO



Type CO Condulet provides an offset of 4 inches in a conduit system.

Cat. No.	Each	Size In.	Std. Pkg.
CO17	\$ .50	1/2	50
CO27	.65	3/4	50
CO37	.75	1	20
CO47	1.25	1 1/4	10
CO57	1.60	1 1/2	10
CO67	3.25	2	5
CO777	5.20	2 1/2	5
CO87	7.90	3	5
CO97	12.60	3 1/2	5
CO107	13.80	4	5

#### Type B



One-Piece			
Cat. No.	Each	Size In.	Std. Pkg.
B17	\$ .29	1/2	100
B27	.36	3/4	50
B37	.50	1	20
Two-Piece			
Cat. No.	Each	Size In.	Std. Pkg.
B47	\$1.25	1 1/4	20
B57	1.50	1 1/2	10
B67	2.60	2	5
B77	4.20	2 1/2	5
B87	5.60	3	5
B97	7.00	3 1/2	5
B107	12.80	4	5
B0117	17.40	4 1/2	1
B0127	18.20	5	1
B0147	22.80	6	1

#### Type COV



Type COV Condulets connected by a nipple of suitable length form a convenient cross-over for two or more pipes or conduits.

Cat. No.	Each	Size In.	Pipe Crossed In.	Std. Pkg.
COV147	\$ .50	1/2	1 1/4	50
COV247	.65	3/4	1 1/4	50
COV347	.75	1	1 1/4	20
COV457	1.25	1 1/4	1 1/2	10
COV567	1.60	1 1/2	2	10
COV677	3.25	2	2 1/2	5
Use C0777	....	2 1/2	3 1/2	..
Use C087	....	3	3 1/2	..
Use C097	....	3 1/2	3 1/2	..
Use C0107	....	4	3 1/2	..

#### Type CUB



Type CUB Condulet provides a cross-over wherever it is necessary to bridge a single pipe or conduit.

Cat. No.	Each	Size In.	Pipe Crossed In.	Std. Pkg.
CUB127	\$ .75	1/2	3/4	25
CUB147	.85	1/2	1 1/4	25
CUB247	.95	3/4	1 1/4	10
CUB347	1.40	1	1 1/4	10
CUB457	1.90	1 1/4	1 1/2	10
CUB567	2.40	1 1/2	2	10
CUB677	4.80	2	2 1/2	5

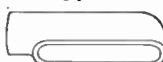
## Obround Condulets

Schedule CR

### Form 7

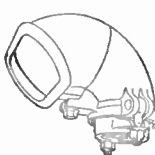
Take Form 7 covers or Form 7 wiring devices. Cadmium-galvanized finish.

#### Type E



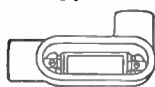
Cat. No.	Each	Size In.	Std. Pkg.
E17	\$ .29	1/2	100
E27	.35	3/4	50
E37	.50	1	20
E47	.80	1 1/4	20
E57	1.04	1 1/2	10
E67	2.14	2	5
E77	4.20	2 1/2	5
E87	5.00	3	5
E97	8.15	3 1/2	5
E107	9.00	4	5

#### Type F



Cat. No.	Each	Size In.	Std. Pkg.
F17	\$ .50	1/2	100
F27	.80	3/4	50
F37	1.25	1	20
F47	2.20	1 1/4	20
F57	3.25	1 1/2	10
F67	5.00	2	5
F77	8.20	2 1/2	5
F87	10.20	3	5
F97	18.10	3 1/2	5
F107	25.00	4	5
F0117	32.00	4 1/2	1
F0127	40.00	5	1
F0147	50.00	6	1

#### Type L



Double-faced condulet which may be used as an LL or LR condulet. Has two openings one furnished with a blank sheet steel cover.

Cat. No.	Each	Size In.	Std. Pkg.
L17	\$ .40	1/2	100
L27	.45	3/4	50
L37	.65	1	20
L47	1.05	1 1/4	20
L57	1.40	1 1/2	10
L67	2.50	2	5

#### Type LBD



Furnished with Blank Cast Feraloy Cover

Type LBD Condulet is intended for use when it is necessary to make a 90-degree bend in the conduit system.

The Condulet is split, thus permitting a straight pull on the wires.

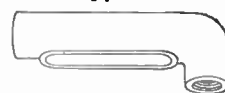
Cat. No.	Each	Size In.	Std. Pkg.
LBD1100	\$ .65	1/2	50
LBD2200	.80	3/4	25
LBD3300	1.20	1	25
LBD011	35.00	4 1/2	1
LBD012	40.00	5	1

#### Type LB



Cat. No.	Each	Size In.	Std. Pkg.
LB187	\$ .30	1/8	50
LB287	.30	1/4	50
LB387	.35	3/8	50
LB17	.40	1/2	100
LB27	.45	3/4	50
LB37	.65	1	20
LB47	1.05	1 1/4	20
LB57	1.40	1 1/2	10
LB67	2.50	2	5
LB777	5.00	2 1/2	5
LB87	6.50	3	5
LB97	10.50	3 1/2	5
LB107	12.00	4	5
Use LBD011	4 1/2	..	..
Use LBD012	5	..	..

#### Type LF



Cat. No.	Each	Size In.	Std. Pkg.
LF17	\$ .40	1/2	100
LF27	.45	3/4	50
LF37	.65	1	20
LF47	1.05	1 1/4	20
LF57	1.40	1 1/2	10
LF67	2.50	2	5
LF777	5.00	2 1/2	5
LF87	6.50	3	5
LF97	10.50	3 1/2	5
LF107	12.00	4	5

#### Type LL



Cat. No.	Each	Size In.	Std. Pkg.
LL187	\$ .30	1/8	50
LL287	.30	1/4	50
LL387	.35	3/8	50
LL17	.40	1/2	100
LL27	.45	3/4	50
LL37	.65	1	20
LL47	1.05	1 1/4	20
LL57	1.40	1 1/2	10
LL67	2.50	2	5
LL777	5.00	2 1/2	5
LL87	6.50	3	5
LL97	10.50	3 1/2	5
LL107	12.00	4	5

#### Type LR



Cat. No.	Each	Size In.	Std. Pkg.
LR187	\$ .30	1/8	50
LR287	.30	1/4	50
LR387	.35	3/8	50
LR17	.40	1/2	100
LR27	.45	3/4	50
LR37	.65	1	20
LR47	1.05	1 1/4	20
LR57	1.40	1 1/2	10
LR67	2.50	2	5
LR777	5.00	2 1/2	5
LR87	6.50	3	5
LR97	10.50	3 1/2	5
LR107	12.00	4	5


**Oround Condulets**

Schedule CR

Form 7

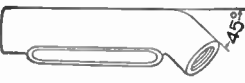
Take Form 7 covers or Form 7 wiring devices.  
Cadmium-galvanized finish.

**Type LBB**



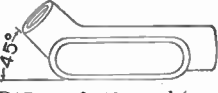
Cat. No.	Each	Size In.	Std. Pkg.
LBB17	\$.40	1/2	100
LBB27	.45	3/4	50
LBB37	.65	1	20
LBB47	1.05	1 1/4	20
LBB57	1.40	1 1/2	10
LBB67	2.50	2	5
LBB777	5.00	2 1/2	5
LBB87	6.50	3	5
LBB97	10.50	3 1/2	5
LBB107	12.00	4	5

**Type LFB**




Cat. No.	Each	Size In.	Std. Pkg.
LFB17	\$.40	1/2	100
LFB27	.45	3/4	50
LFB37	.65	1	20
LFB47	1.05	1 1/4	20
LFB57	1.40	1 1/2	10
LFB67	2.50	2	5
LFB777	5.00	2 1/2	5
LFB87	6.50	3	5
LFB97	10.50	3 1/2	5
LFB107	12.00	4	5

**Type LLB**



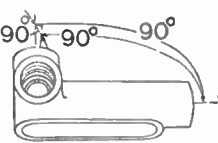
Cat. No.	Each	Size In.	Std. Pkg.
LLB17	\$.40	1/2	100
LLB27	.45	3/4	50
LLB37	.65	1	20
LLB47	1.05	1 1/4	20
LLB57	1.40	1 1/2	10
LLB67	2.50	2	5
LLB777	5.00	2 1/2	5
LLB87	6.50	3	5
LLB97	10.50	3 1/2	5
LLB107	12.00	4	5

**Type LRB**



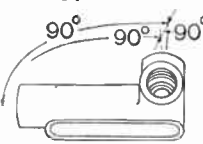
Cat. No.	Each	Size In.	Std. Pkg.
LRB17	\$.40	1/2	100
LRB27	.45	3/4	50
LRB37	.65	1	20
LRB47	1.05	1 1/4	20
LRB57	1.40	1 1/2	10
LRB67	2.50	2	5
LRB777	5.00	2 1/2	5
LRB87	6.50	3	5
LRB97	10.50	3 1/2	5

**Type LBL**



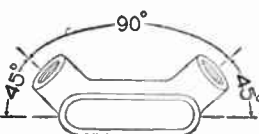
Cat. No.	Each	Size In.	Std. Pkg.
LBL17	\$.65	1/2	50
LBL27	.80	3/4	25
LBL37	.95	1	25
LBL47	1.25	1 1/4	10
LBL57	2.00	1 1/2	10
LBL67	2.65	2	5
LBL77	6.55	2 1/2	5

**Type LBR**



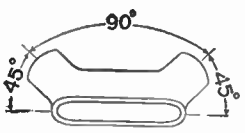
Cat. No.	Each	Size In.	Std. Pkg.
LBR17	\$.65	1/2	50
LBR27	.80	3/4	25
LBR37	.95	1	25
LBR47	1.25	1 1/4	10
LBR57	2.00	1 1/2	10
LBR67	2.65	2	5
LBR77	6.55	2 1/2	5

**Type U**



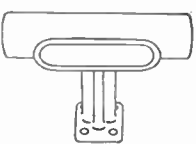
Cat. No.	Each	Size In.	Std. Pkg.
U187	\$.33	1/8	50
U287	.33	1/4	50
U387	.40	3/8	50
U17	.48	1/2	100
U27	.54	3/4	50
U37	.78	1	20
U47	1.26	1 1/4	20
U57	1.68	1 1/2	10
U67	3.00	2	5
U777	6.00	2 1/2	5
U87	7.80	3	5
U97	12.60	3 1/2	5

**Type UB**



Cat. No.	Each	Size In.	Std. Pkg.
UB187	\$.33	1/8	50
UB287	.33	1/4	50
UB387	.40	3/8	50
UB17	.48	1/2	100
UB27	.54	3/4	50
UB37	.78	1	20
UB47	1.26	1 1/4	20
UB57	1.68	1 1/2	10
UB67	3.00	2	5
UB777	6.00	2 1/2	5
UB87	7.80	3	5
UB97	12.60	3 1/2	5
UB107	14.40	4	5

**Type CMB**



Type CMB Condulet is intended for use in show windows where it is desirable to support the conduit line and condulets at a sufficient distance from the window to enable the use of angle type reflectors.

Cat. No.	Each	Size In.	Std. Pkg.
CMB17	\$1.25	1/2	25
CMB27	1.40	3/4	25

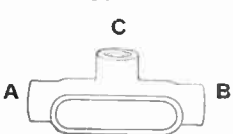
**Oround Condulets**

Schedule CR

Form 7

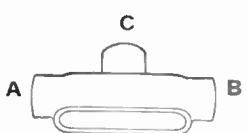
Take Form 7 covers or Form 7 wiring devices.  
Cadmium-galvanized finish.

**Type T**



Cat. No.	Each	SIZE, INCHES			Std. Pkg.
		A	B	C	
T187	\$.33	1/8	1/8	1/8	50
T287	.33	1/4	1/4	1/4	50
T387	.40	3/8	3/8	3/8	50
T17	.48	1/2	1/2	1/2	100
T127	.56	1/2	1/2	3/4	100
T137	.63	1/2	1/2	1	100
T217	.57	3/4	3/4	1 1/2	50
T27	.57	3/4	3/4	3/4	50
T237	.65	3/4	3/4	1	50
T257	.90	3/4	3/4	1 1/2	50
T317	.80	1	1	1 1/2	20
T327	.80	1	1	3/4	20
T37	.80	1	1	1	20
T367	1.45	1	1	2	20
T417	1.22	1 1/4	1 1/4	1/2	20
T427	1.22	1 1/4	1 1/4	3/4	20
T437	1.22	1 1/4	1 1/4	1	20
T47	1.22	1 1/4	1 1/4	1 1/4	20
T457	1.50	1 1/4	1 1/4	1 1/2	20
T467	1.96	1 1/4	1 1/4	2	20
T517	1.69	1 1/2	1 1/2	1/2	10
T527	1.69	1 1/2	1 1/2	3/4	10
T537	1.69	1 1/2	1 1/2	1	10
T547	1.69	1 1/2	1 1/2	1 1/4	10
T57	1.69	1 1/2	1 1/2	1 1/2	10
T567	2.52	1 1/2	1 1/2	2	10
T617	2.55	2	2	1/2	5
T627	2.55	2	2	3/4	5
T637	2.55	2	2	1	5
T647	2.55	2	2	1 1/4	5
T657	2.55	2	2	1 1/2	5
T67	2.55	2	2	2	5
T7577	5.00	2 1/2	2 1/2	1 1/2	5
T7677	5.00	2 1/2	2 1/2	2	5
T77	5.00	2 1/2	2 1/2	2 1/2	5
T867	7.50	3	3	2	5
T87	7.50	3	3	3	5
T977	11.00	3 1/2	3 1/2	2 1/2	5
T97	11.00	3 1/2	3 1/2	3 1/2	5
T107	13.00	4	4	4	5

**Type TB**



Cat. No.	Each	A	B	C	Std. Pkg.
TB187	\$.33	1/8	1/8	1/8	50
TB287	.33	1/4	1/4	1/4	50
TB387	.40	3/8	3/8	3/8	50
TB17	.48	1/2	1/2	1/2	100
TB27	.57	3/4	3/4	3/4	50
TB237	.65	3/4	3/4	1	50
TB317	.80	1	1	1 1/2	20
TB327	.80	1	1	3/4	20
TB37	.80	1	1	1	20
TB47	1.22	1 1/4	1 1/4	1 1/4	10
TB57	1.69	1 1/2	1 1/2	1 1/2	10
TB67	2.55	2	2	2	5
TB77	5.00	2 1/2	2 1/2	2 1/2	5
TB87	7.50	3	3	3	5
TB97	11.00	3 1/2	3 1/2	3 1/2	5
TB107	13.00	4	4	4	5

Size of cover or wiring device is same as size of hubs at ends of cover opening.

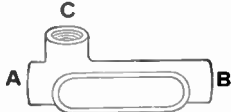
## Obround Condulets

Schedule CR

Form 7

Take Form 7 covers or Form 7 wiring devices. Cadmium-galvanized finish.

### Type TL



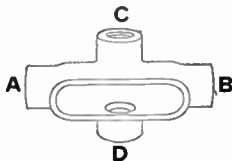
Cat. No.	Each	SIZE, INCHES			Std. Pkg.
		A	B	C	
TL17	\$.48	1/2	1/2	1/2	100
TL127	.56	1/2	1/2	3/4	100
TL137	.63	1/2	1/2	1	100
TL217	.57	3/4	3/4	1/2	50
TL27	.57	3/4	3/4	3/4	50
TL237	.65	3/4	3/4	1	50
TL317	.80	1	1	1/2	20
TL327	.80	1	1	3/4	20
TL37	.80	1	1	1	20
TL47	1.22	1 1/4	1 1/4	1 1/4	10
TL57	1.69	1 1/2	1 1/2	1 1/2	10

### Type TR



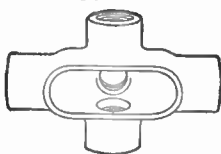
TR17	\$.48	1/2	1/2	1/2	100
TR127	.56	1/2	1/2	3/4	100
TR137	.63	1/2	1/2	1	100
TR217	.57	3/4	3/4	1/2	50
TR27	.57	3/4	3/4	3/4	50
TR317	.80	1	1	1/2	20
TR327	.80	1	1	3/4	20
TR37	.80	1	1	1	20
TR47	1.22	1 1/4	1 1/4	1 1/4	10
TR57	1.69	1 1/2	1 1/2	1 1/2	10

### Type X



Cat. No.	Each	SIZE, INCHES				Std. Pkg.
		A	B	C	D	
X17	\$.60	1/2	1/2	1/2	1/2	75
X21117	.77	3/4	1/2	1/2	1/2	50
X217	.77	3/4	3/4	1/2	1/2	50
X27	.77	3/4	3/4	3/4	3/4	50
X317	1.05	1	1	1/2	1/2	20
X327	1.05	1	1	3/4	3/4	20
X37	1.05	1	1	1	1	20
X417	1.40	1 1/4	1 1/4	1/2	1/2	20
X47	1.40	1 1/4	1 1/4	1 1/4	1 1/4	20
X527	1.78	1 1/2	1 1/2	3/4	3/4	10
X57	1.78	1 1/2	1 1/2	1 1/2	1 1/2	10
X67	3.50	2	2	2	2	5
X77	6.00	2 1/2	2 1/2	2 1/2	2 1/2	5
X87	10.00	3	3	3	3	5

### Type XA



Cat. No.	Each	Size Inches				Std. Pkg.
		1/2	1/2	1/2	1/2	
XA17	\$1.00	1/2	1/2	1/2	1/2	50
XA27	1.15	3/4	3/4	3/4	3/4	50
XA37	1.45	1	1	1	1	25

Size of cover or wiring devices is same as size of hubs at ends of cover opening.

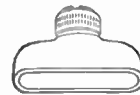
## Obround Threadless Condulets

Schedule CR

Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

Cadmium-galvanized is the standard finish.

### Type A

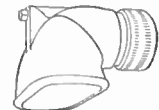


Size In.	Std. Pkg.	For Thick Wall Conduit		For Thin Wall Conduit	
		Cat. No.	Each	Cat. No.	Each
1/2	100	A197	\$.29	A147	\$.29
3/4	50	A297	.40	A247	.40
1	20	A397	.56	A347	.56
1 1/4	20	A497	.85	A447	.85
1 1/2	10	A597	1.14	A547	1.14
2	5	A697	2.26	A647	2.26
2 1/2	5	A797	5.20	.....	.....
3	5	A897	6.30	.....	.....
3 1/2	5	A997	9.90	.....	.....
4	5	A1097	11.25	.....	.....

### Type B



1-Piece Body (1/2 to 1-Inch)



2-Piece Body (1 1/4 to 4-Inch)

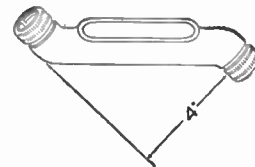
1/2	100	B197	\$.34	B147	\$.34
3/4	50	B297	.45	B247	.45
1	20	B397	.63	B347	.63
1 1/4	20	B497	1.48	B447	1.48
1 1/2	10	B597	1.84	B547	1.84
2	5	B697	3.20	B647	3.20
2 1/2	5	B797	5.20	.....	.....
3	5	B897	6.90	.....	.....
3 1/2	5	B997	8.75	.....	.....
4	5	B1097	15.05	.....	.....

### Type C



1/2	100	C197	\$.46	C147	\$.46
3/4	50	C297	.59	C247	.59
1	20	C397	.85	C347	.85
1 1/4	20	C497	1.40	C447	1.40
1 1/2	10	C597	1.90	C547	1.90
2	5	C697	3.63	C647	3.63
2 1/2	5	C797	6.80	.....	.....
3	5	C897	8.80	.....	.....
3 1/2	5	C997	12.50	.....	.....
4	5	C1097	15.50	.....	.....

### Type CO



Type CO Condulet provides an offset of 4 inches in a conduit system.

1/2	50	CO197	\$.60	CO147	\$.60
3/4	50	CO297	.83	CO247	.83
1	20	CO397	1.01	CO347	1.01
1 1/4	10	CO497	1.71	CO447	1.71
1 1/2	10	CO597	2.28	CO547	2.28
2	5	CO697	4.45	CO647	4.45



**Obround Threadless Condulets**

Schedule CR

Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

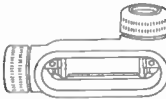
Cadmium-galvanized is the standard finish.

**Type E**



Size In.	Std. Pkg.	For Thick Wall Conduit		For Thin Wall Conduit	
		Cat. No.	Each	Cat. No.	Each
1/2	100	E197	\$ .34	E147	\$ .34
3/4	50	E297	.44	E247	.44
1	20	E397	.63	E347	.63
1 1/4	20	E497	1.03	E447	1.03
1 1/2	10	E597	1.38	E547	1.38
2	5	E697	2.74	E647	2.74
2 1/2	5	E797	5.20	.....	.....
3	5	E897	6.30	.....	.....
3 1/2	5	E997	9.90	.....	.....
4	5	E1097	11.25	.....	.....

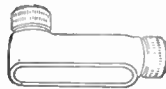
**Type L**



Double-faced Condulet used either as an LL or LR Condulet. One of two openings furnished with a blank sheet steel cover.

Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2	100	L197	\$ .50	L147	\$ .50
3/4	50	L297	.63	L247	.63
1	20	L397	.91	L347	.91
1 1/4	20	L497	1.51	L447	1.51
1 1/2	10	L597	2.08	L547	2.08
2	5	L697	3.70	L647	3.70

**Type LB**



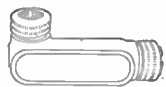
Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2	100	LB197	\$ .50	LB147	\$ .50
3/4	50	LB297	.63	LB247	.63
1	20	LB397	.91	LB347	.91
1 1/4	20	LB497	1.51	LB447	1.51
1 1/2	10	LB597	2.08	LB547	2.08
2	5	LB697	3.70	LB647	3.70
2 1/2	5	LB797	7.00	.....	.....
3	5	LB897	9.10	.....	.....
3 1/2	5	LB997	14.00	.....	.....
4	5	LB1097	16.50	.....	.....

**Type LF**



Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2	100	LF197	\$ .50	LF147	\$ .50
3/4	50	LF297	.63	LF247	.63
1	20	LF397	.91	LF347	.91
1 1/4	20	LF497	1.51	LF447	1.51
1 1/2	10	LF597	2.08	LF547	2.08
2	5	LF697	3.70	LF647	3.70

**Type LL**



Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2	100	LL197	\$ .50	LL147	\$ .50
3/4	50	LL297	.63	LL247	.63
1	20	LL397	.91	LL347	.91
1 1/4	20	LL497	1.51	LL447	1.51
1 1/2	10	LL597	2.08	LL547	2.08
2	5	LL697	3.70	LL647	3.70
2 1/2	5	LL797	7.00	.....	.....
3	5	LL897	9.10	.....	.....
3 1/2	5	LL997	14.00	.....	.....
4	5	LL1097	16.50	.....	.....

**Obround Threadless Condulets**

Schedule CR

Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

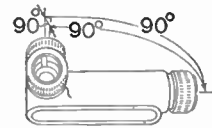
Cadmium-galvanized is the standard finish.

**Type LR**



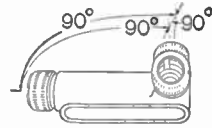
Size In.	Std. Pkg.	For Thick Wall Conduit		For Thin Wall Conduit	
		Cat. No.	Each	Cat. No.	Each
1/2	100	LR197	\$ .50	LR147	\$ .50
3/4	50	LR297	.63	LR247	.63
1	20	LR397	.91	LR347	.91
1 1/4	20	LR497	1.51	LR447	1.51
1 1/2	10	LR597	2.08	LR547	2.08
2	5	LR697	3.70	LR647	3.70
2 1/2	5	LR797	7.00	.....	.....
3	5	LR897	9.10	.....	.....
3 1/2	5	LR997	14.00	.....	.....
4	5	LR1097	16.50	.....	.....

**Type LBL**



Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2	50	LBL197	\$ .80	LBL147	\$ .80
3/4	25	LBL297	1.07	LBL247	1.07
1	25	LBL397	1.34	LBL347	1.34

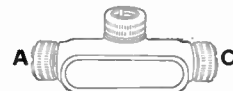
**Type LBR**



Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2	50	LBR197	\$ .80	LBR147	\$ .80
3/4	25	LBR297	1.07	LBR247	1.07
1	25	LBR397	1.34	LBR347	1.34

**Type T**

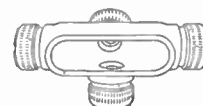
B



Size of hubs are indicated by sequence of letters. The size of the cover or wiring device is same as size of the hubs at the ends of the cover opening.

Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2 - 1/2 - 1/2	100	T197	\$ .63	T11147	\$ .63
3/4 - 1/2 - 3/4	50	T2197	.84	T21247	.84
3/4 - 3/4 - 3/4	50	T297	.84	T22247	.84
1 - 1/2 - 1	20	T3197	1.19	T31347	1.19
1 - 3/4 - 1	20	T3297	1.19	T32347	1.19
1 - 1 - 1	20	T397	1.19	T33347	1.19
1 1/4 - 1/2 - 1 1/4	20	T4197	1.91	T41447	1.91
1 1/4 - 3/4 - 1 1/4	20	T4297	1.91	T42447	1.91
1 1/4 - 1 - 1 1/4	20	T4397	1.91	T43447	1.91
1 1/4 - 1 1/4 - 1 1/4	20	T497	1.91	T44447	1.91
1 1/2 - 1/2 - 1 1/2	10	T597	2.71	T55547	2.71
2 - 2 - 2	5	T697	4.35	T66647	4.35
2 1/2 - 2 1/2 - 2 1/2	5	T797	8.00	.....	.....
3 - 3 - 3	5	T897	11.40	.....	.....
3 1/2 - 3 1/2 - 3 1/2	5	T997	16.25	.....	.....
4 - 4 - 4	5	T1097	19.75	.....	.....

**Type TA**



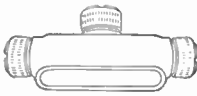
Size In.	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2	50	TA197	\$ .90	TA147	\$ .90
3/4	50	TA297	1.11	TA247	1.11
1	20	TA397	1.52	TA347	1.52

## Obround Threadless Condulets

Schedule CR

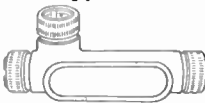
Threadless and Threaded Condulets Take the Same Covers and Wiring Devices  
Cadmium-galvanized is the standard finish.

### Type TB



Size In.	Std. Pkg.	For Thick Wall Conduit		For Thin Wall Conduit	
		Cat. No.	Each	Cat. No.	Each
1/2	100	TB197	\$ .63	TB147	\$ .63
3/4	50	TB297	.84	TB247	.84
1	20	TB397	1.19	TB347	1.19
1 1/4	10	TB497	1.91	TB447	1.91
1 1/2	10	TB597	2.71	TB547	2.71
2	5	TB697	4.35	TB647	4.35
2 1/2	5	TB797	8.00	.....	....
3	5	TB897	11.40	.....	....
3 1/2	5	TB997	16.25	.....	....
4	5	TB10097	19.75	.....	....

### Type TL



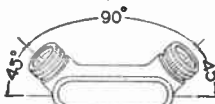
Size In.	Std. Pkg.	Type TL		Type TR	
		Cat. No.	Each	Cat. No.	Each
1/2	100	TL197	\$ .63	TR197	\$ .63
3/4	50	TL297	.84	TR297	.84
1	20	TL397	1.19	TR397	1.19

### Type TR



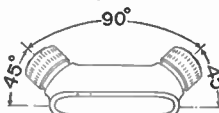
Size In.	Std. Pkg.	Type TR		Type U	
		Cat. No.	Each	Cat. No.	Each
1/2	100	TR197	\$ .63	U197	\$ .58
3/4	50	TR297	.84	U297	.72
1	20	TR397	1.19	U397	1.04

### Type U



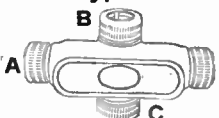
Size In.	Std. Pkg.	Type U		Type UB	
		Cat. No.	Each	Cat. No.	Each
1/2	100	U197	\$ .58	UB197	\$ .58
3/4	50	U297	.72	UB297	.72
1	20	U397	1.04	UB397	1.04
1 1/4	20	U497	1.72	UB497	1.72
1 1/2	10	U597	2.36	UB597	2.36
2	5	U697	4.20	UB697	4.20

### Type UB



Size In.	Std. Pkg.	Type UB		Type X	
		Cat. No.	Each	Cat. No.	Each
1/2	100	UB197	\$ .58	X197	\$ .80
3/4	50	UB297	.72	X297	1.13
1	20	UB397	1.04	X397	1.57
1 1/4	20	UB497	1.72	X497	2.32
1 1/2	10	UB597	2.36	X597	3.14
2	5	UB697	4.20	X697	5.90

### Type X



Sizes of hubs are indicated by sequence of letters.  
Size of cover or wiring device is same size as largest hub.

Size	Std. Pkg.	Cat. No.	Each	Cat. No.	Each
1/2-1/2-1/2-1/2	75	X197	\$ .80	X111147	\$ .80
3/4-3/4-3/4-3/4	50	X297	1.13	X222247	1.13
1-1/2-1/2-1	20	X3197	1.57	X311347	1.57
1-1-1-1	20	X397	1.57	X333347	1.57
1 1/4-1 1/4-1 1/4-1 1/4	20	X497	2.32	X444447	2.32
1 1/2-1 1/2-1 1/2-1 1/2	10	X597	3.14	X555547	3.14
2-2-2-2	5	X697	5.90	X666647	5.90

## Obround Condulet Covers with Wire Holes

Schedule CR

Form 7  
For Condulets of the Obround Series—Form 7  
1-Wire Standard



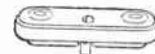
Size In.	Diam. Holes In.	Std. Pkg.	Porcelain		Composition	
			Cat. No.	Each	Cat. No.	Each
1/2	7/16	200	171	\$ .10	1771	\$ .20
3/4	7/16	100	271	.15	2771	.30
1	7/16	50	371	.25	3771	.50
1 1/4	7/16	25	471	.36	4771	1.00
1 1/2	1 3/8	10	571	.48	5771	1.10
2	1 3/4	5	671	.60	6771	1.20
2 1/2 or 3	2 5/16	5	871	.80	8771	1.60
3 1/2 or 4	3 3/4	5	971	.90	9771	2.50
4 1/2, 5 or 6	3 3/4	1	...	...	14771	4.00

### 1-Wire Special



Size In.	Diam. Holes In.	Std. Pkg.	1-Wire Special		2-Wire	
			Cat. No.	Each	Cat. No.	Each
1/2	5/8	200	171S	\$ .10	...	...
3/4	5/8	100	271S	.15	...	...
1	1	50	371S	.25	...	...
1 1/4	1 1/8	25	471S	.36	...	...

### 2-Wire



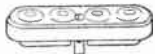
Size In.	Diam. Holes In.	Std. Pkg.	2-Wire		3-Wire	
			Cat. No.	Each	Cat. No.	Each
1/2	3/8	200	172	\$ .10	1772	\$ .20
3/4	15/32	100	272	.15	2772	.30
1	1/2	50	372	.25	3772	.50
1 1/4	11/16	25	472	.36	4772	1.00
1 1/2	13/16	10	572	.48	5772	1.10
2	1	5	672	.60	6772	1.20
2 1/2 or 3	1 1/16	5	872	.80	8772	1.60
3 1/2 or 4	1 15/16	5	972	.90	9772	2.50
4 1/2, 5 or 6	2 1/4	1	...	...	14772	4.00

### 3-Wire



Size In.	Diam. Holes In.	Std. Pkg.	3-Wire		4-Wire	
			Cat. No.	Each	Cat. No.	Each
1/2	5/16	200	173	\$ .10	...	...
3/4	3/8	200	...	...	1773	\$ .20
1	15/32	100	273	.15	2773	.30
1 1/4	1/2	50	373	.25	3773	.50
1 1/2	11/16	25	473	.36	4773	1.00
2	13/16	10	573	.48	5773	1.10
2 1/2 or 3	1	5	673	.60	6773	1.20
3 1/2 or 4	1 1/16	5	873	.80	8773	1.60
4 1/2, 5 or 6	1 15/16	5	973	.90	9773	2.50
...	2 1/4	1	...	...	14773	4.00

### 4-Wire



Size In.	Diam. Holes In.	Std. Pkg.	4-Wire		5-Wire	
			Cat. No.	Each	Cat. No.	Each
1/2	5/16	200	174	\$ .10	1774	\$ .20
3/4	5/16	100	274	.15	2774	.30
1	15/32	50	374	.25	3774	.50
1 1/4	17/32	25	474	.36	4774	1.00
1 1/2	5/8	10	574	.48	5774	1.10
2	1	5	674	.60	6774	1.20
2 1/2 or 3	1 1/16	5	874	.80	8774	1.60
3 1/2 or 4	1 15/16	5	974	.90	9774	2.50
4 1/2, 5 or 6	1 7/8	1	...	...	14774	4.00

### 5-Wire



Size In.	Diam. Holes In.	Std. Pkg.	5-Wire		6-Wire	
			Cat. No.	Each	Cat. No.	Each
1/2	5/16	100	275	\$ .15	2775	\$ .30
3/4	15/32	50	375	.25	3775	.50
1	17/32	25	475	.36	4775	1.00
1 1/4	5/8	10	575	.48	5775	1.10
1 1/2	15/16	5	675	.60	6775	1.20
2	1 1/16	5	875	.80	8775	1.60
2 1/2 or 3	1 1/2	5	...	...	9775	2.50
3 1/2 or 4	1 1/2	5	...	...	...	...
4 1/2, 5 or 6	1 1/8	1	...	...	14775	4.00

**Obround Condulet Covers with Wire Holes**

Schedule CR

Form 7

For Condulets of the Obround Series—Form 7

**6-Wire**



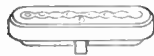
Size In.	Diam. Holes In.	Porcelain		Composition	
		Std. Pkg.	Cat. No. Each	Cat. No.	Each
3/4	5/16	100	276 \$ .15	2776	\$ .30
1	3/8	50	376 .25	3776	.50
1 1/4	1/2	25	476 .36	4776	1.00
1 1/2	17/32	10	576 .48	5776	1.10
2	5/8	5	676 .60	6776	1.20
2 1/2 or 3	7/8	5	876 .80	8776	1.60
3 1/2 or 4	1 1/16	5	...	9776	2.50
4 1/2, 5 or 6	1 5/16	1	...	14776	4.00

**7-Wire**



Size In.	Diam. Holes In.	Porcelain		Composition	
		Std. Pkg.	Cat. No. Each	Cat. No.	Each
1	1 1/32	50	377 \$ .25	3777	\$ .50
1 1/4	7/16	25	477 .36	4777	1.00
1 1/2	15/32	10	...	5777	1.10
2	19/32	5	...	6777	1.20
2 1/2 or 3	25/32	5	...	8777	1.60
3 1/2 or 4	1	5	...	9777	2.50
4 1/2, 5 or 6	1 1/8	1	...	14777	4.00

**8-Wire**



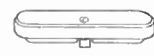
Size In.	Diam. Holes In.	Porcelain		Composition	
		Std. Pkg.	Cat. No. Each	Cat. No.	Each
1	5/16	50	378 \$ .25	3778	\$ .50
1 1/4	3/8	25	478 .36	4778	1.00
1 1/2	13/32	10	...	5778	1.10
2	1/2	5	...	6778	1.20
2 1/2 or 3	21/32	5	...	8778	1.60
3 1/2 or 4	27/32	5	...	9778	2.50
4 1/2, 5 or 6	1	1	...	14778	4.00

**9-Wire**



Size In.	Diam. Holes In.	Porcelain		Composition	
		Std. Pkg.	Cat. No. Each	Cat. No.	Each
1	19/64	50	379 \$ .25	3779	\$ .50
1 1/4	21/64	25	...	4779	1.00
1 1/2	23/64	10	...	5779	1.10
2	29/64	5	...	6779	1.20
2 1/2 or 3	19/32	5	...	8779	1.60
3 1/2 or 4	25/32	5	...	9779	2.50
4 1/2, 5 or 6	7/8	1	...	14779	4.00

**Blank**



Size In.	Diam. Holes In.	Porcelain		Composition	
		Std. Pkg.	Cat. No. Each	Cat. No.	Each
1/8	...	200	...	18770	\$ .20
1/4	...	200	...	28770	.25
3/8	...	200	...	38770	.30
1/2	...	200	...	1770	.30
3/4	...	100	...	2770	.40
1	...	50	...	3770	.60
1 1/4	...	25	...	4770	1.10
1 1/2	...	10	...	5770	1.20
2	...	5	...	6770	1.40
2 1/2 or 3	...	5	...	8770	3.25
3 1/2 or 4	...	5	...	9770	4.50
4 1/2, 5 or 6	...	1	...	14770	5.75

If specified on order, blank composition cover will be furnished with special drilling at an advance in list price as follows:

- Up to 1/2 inch diameter, 10 cents list per hole;
- Over 1/2 inch but less than 1-inch, 20 cents list per hole;
- 1 inch and over, 30 cents list per hole.

**Obround Condulet Covers**

Schedule CR

Form 7

For Condulets of the Obround Series—Form 7  
Blank Metal Covers



Sheet Steel



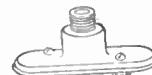
Cast Fer Alloy

Cadmium-galvanized is the standard finish.

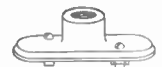
Size Inches	Sheet Steel			Cast Fer Alloy		
	Std. Pkg.	Cat. No.	Each	Cat. No.	Each	
1/8	100	1870	\$.06	...	...	
1/4	100	2870	.06	...	...	
3/8	100	3870	.06	...	...	
1/2	200	170	.08	170f	\$ .16	
3/4	100	270	.11	270f	.22	
1	50	370	.23	370f	.35	
1 1/4	25	470	.32	470f	.50	
1 1/2	10	570	.45	570f	.70	
2	5	670	.56	670f	.90	
2 1/2 or 3	5	870*	.75	...	...	
3 1/2 or 4	5	970*	.80	...	...	

\*These covers are made of cast aluminum.

**Covers with Nipple**



With Male Nipple



With Female Nipple

Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	MALE		FEMALE	
		Cat. No.	Each	Cat. No.	Each
1/2	200	1721	\$.20	1731	\$.20
3/4	100	2721	.25	2731	.25
1	50	3721	.35	3731	.35
<b>With 1/4-Inch Nipple</b>					
1/2	200	1722	\$.23	1732	\$.23
3/4	100	2722	.28	2732	.28
1	50	3722	.38	3732	.38
<b>With 3/8-Inch Nipple</b>					
1/2	200	1723	\$.25	1733	\$.25
3/4	100	2723	.30	2733	.30
1	50	3723	.40	3733	.40
<b>With 1/2-Inch Nipple</b>					
1/2	200	1724	\$.30	1734	\$.30
3/4	100	2724	.35	2734	.35
1	50	3724	.45	3734	.45
1 1/4	25	4724	.60	4734	.60
1 1/2	10	5724	.75	5734	.75

**Covers with Cord Clamps**



Acts as a safeguard for the upper end of drop cords, and prevents any strain on the soldered connections of the conductors.

The hole through the cover is provided with a bushing. When the lamp socket is provided with a similar cord clamp, the drop cord is effectually protected against hard usage.

Cadmium-galvanized finish.

Cat. No.	Each	Description	Size Inches	Std. Pkg.
1972	\$.30	Sheet Steel	1/2	200
2972	.35	Sheet Steel	3/4	100

**Porcelain Covers with Wire Holes**  
1-Wire and 1/8-Inch Male Nipple



For drop cord and fixture pull switch.

Cat. No.	Each	Size Inches	Diam. Hole Inches	Std. Pkg.
1782	\$.35	1/2	13/32	200
2782	.40	3/4	13/32	100



2-Wire

For weatherproof socket.

Cat. No.	Each	Size Inches	Diam. Holes Inches	Std. Pkg.
1781	\$.16	1/2	3/16	200
2781	.25	3/4	5/16	100



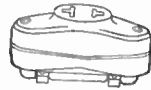
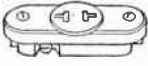
## Condulet Wiring Devices

Schedule CR

For Condulets of the Obround Series  
Attachment Plug Receptacles  
2-Pole

### Composition

### Porcelain



Single, with Double T Slots  
15 Amperes, 125 Volts; 10 Amperes, 250 Volts

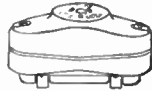
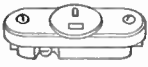
Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
1715	\$.40	1/2	100	1705	\$.40	1/2	100
2715	.45	3/4	100	2705	.45	3/4	100
3715	.70	1	50	3705	.50	1	50



Duplex, with Double T Slots

1725	\$.60	1/2	100	.....	.....	.....	.....
2725	.70	3/4	50	.....	.....	.....	.....
3725	.90	1	50	.....	.....	.....	.....

Polarity Plug Receptacles  
2-Pole



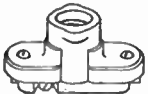
15 Amperes, 125 Volts; 10 Amperes, 250 Volts

†1728	\$.40	1/2	100	†1708	\$.40	1/2	100
†2728	.45	3/4	100	†2708	.45	3/4	100
†3728	.70	1	50	†3708	.50	1	50

20 Amperes, 250 Volts

1738	\$.55	1/2	100	1718	\$.55	1/2	100
2738	.60	3/4	100	2718	.60	3/4	100
3738	.85	1	50	3718	.65	1	50

Lamp Receptacles  
660 Watts, 600 Volts



With Shadeholder Groove

1726	\$.35	1/2	100	1706	\$.30	1/2	100
2726	.40	3/4	100	2706	.35	3/4	100
3726	.60	1	50	3706	.40	1	50

Without Shadeholder Groove

1727	\$.35	1/2	100	1707	\$.25	1/2	100
2727	.40	3/4	100	2707	.30	3/4	100
3727	.60	1	50	.....	.....	.....	.....

Attachment Plug Receptacles



3-Wire, 3-Pole  
15 Amperes, 125 Volts; 10 Amperes, 250 Volts

.....	.....	.....	.....	1709	\$.60	1/2	100
.....	.....	.....	.....	2709	.65	3/4	100

20 Amperes, 250 Volts

.....	.....	.....	.....	1719	\$.75	1/2	100
.....	.....	.....	.....	2719	.80	3/4	100

2-Wire, 3-Pole, Extra Pole Grounded

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

.....	.....	.....	.....	1729	\$.85	1/2	100
.....	.....	.....	.....	2729	.90	3/4	100

20 Amperes, 250 Volts

.....	.....	.....	.....	1739	\$.90	1/2	100
.....	.....	.....	.....	2739	.95	3/4	100

†Take Hubbell No. 5567 Polarized plug. For use with parallel blade polarity plugs, use Catalogue Nos. 1705, 1715, 1725, 2705, 2715, 2725, 3705, 3715, and 3725 receptacles.

Prices for receptacles listed above do not include attachment plugs.

If specified on the order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents in the list price.

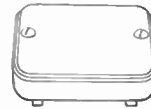
## Type OCB Obround Branch Extensions

Schedule CR

Form 7

For bridging from one Obround Condulet to another. Cadmium-galvanized is the standard finish.

With Blank Cover



Cat. No.	Each	For Connecting Condulets Size, Inches	Take Covers Inches	Std. Pkg.
OCB1	\$.65	1/2 to 1/2	.....	50
OCB6	.90	3/4 to 1/2	.....	50
OCB2	1.00	3/4 to 3/4	.....	50
OCB8	1.25	1 to 1/2	.....	25
OCB9	1.35	1 to 3/4	.....	25
OCB3	1.45	1 to 1	.....	25
OCB4	1.70	1 1/4 to 1 1/4	.....	25

With Cover with Obround Opening



OCB10	\$.70	1/2 to 1/2	1/2	50
OCB16	.95	3/4 to 1/2	3/4	50
OCB12	1.05	3/4 to 3/4	3/4	50
OCB18	1.35	1 to 1/2	1	25
OCB19	1.45	1 to 3/4	1	25
OCB13	1.55	1 to 1	1	25
OCB14	1.90	1 1/4 to 1 1/4	1 1/4	25

## Covers for Obround Condulets

Schedule CR

Cadmium-galvanized is the standard finish.

Takes P & S-Despard wiring devices, which include single-pole, double-pole, 3-way and 4-way switches; convenience and radio outlets; and pilot or night lights.

Mounting bridge is required to install the P & S-Despard wiring devices and is furnished with each 1755 cover listed below.

Complete with Mounting Bridge Aluminum Alloy

Cat. No.	Each	Size, In.
1755	\$.20	1/2



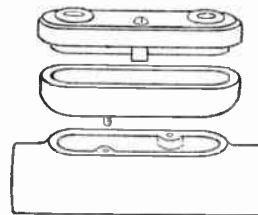
Mounting Bridge Only

717	\$.05	..
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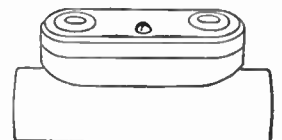
## Type OHN Obround Adapters

Schedule CR

Form 7



Type C with Adapter and 2-Wire, Form 7 Cover Exploded View



Type C with Adapter and 2-Wire, Form 7 Cover

For adapting Form 7 covers or Form 7 wiring devices to Obround Condulets, old style (except Types BE, DF, F and FE).

Cat. No.	Each	Size Inches	Std. Pkg.
OHN1	\$.15	1/2	100
OHN2	.20	3/4	50
OHN3	.25	1	20
OHN4	.35	1 1/4	20
OHN5	.50	1 1/2	10

**Mogul Series Condulets**

Schedule CR

**Take Mogul Covers**

Cadmium-galvanized is the standard finish.

**Type BC**



Cat. No.	Each	Size In.	Std. Pkg.
BC3	\$1.90	1	25
BC4	2.15	1 1/4	10
BC5	4.15	1 1/2	10
BC6	5.00	2	5
BC7	7.40	2 1/2	5
BC8	9.90	3	5
BC9	14.85	3 1/2	5
BC10	18.00	4	5

**Type BEE**



Cat. No.	Each	Size In.	Std. Pkg.
BEE3	\$1.70	1	25
BEE4	1.90	1 1/4	10
BEE5	3.70	1 1/2	10
BEE6	4.50	2	5
BEE7	6.80	2 1/2	5
BEE8	8.70	3	5
BEE9	14.00	3 1/2	5
BEE10	16.00	4	5

**Type BLB**



BLB	Each	Size In.	Std. Pkg.
BLB3	\$1.90	1	25
BLB4	2.15	1 1/4	10
BLB5	4.15	1 1/2	10
BLB6	5.00	2	5
BLB7	7.60	2 1/2	5
BLB8	10.20	3	5
BLB9	16.35	3 1/2	5
BLB10	19.00	4	5

**Type BT**



BT	Each	Size In.	Std. Pkg.
BT3	\$2.25	1	25
BT4	2.50	1 1/4	10
BT5	4.65	1 1/2	10
BT6	5.60	2	5
BT7	7.80	2 1/2	5
BT8	11.20	3	5
BT9	16.85	3 1/2	5
BT10	20.00	4	5

**Type BTB**



BTB	Each	Size In.	Std. Pkg.
BTB3	\$2.25	1	25
BTB4	2.50	1 1/4	10
BTB5	4.65	1 1/2	10
BTB6	5.60	2	5
BTB7	7.80	2 1/2	5
BTB8	11.20	3	5
BTB9	16.85	3 1/2	5
BTB10	20.00	4	5

**Type BU**



BU	Each	Size In.	Std. Pkg.
BU3	\$1.90	1	25
BU4	2.15	1 1/4	10
BU5	4.15	1 1/2	10
BU6	5.00	2	5
BU7	7.60	2 1/2	5
BU8	10.20	3	5
BU9	16.35	3 1/2	5
BU10	19.00	4	5

**Type BUB**



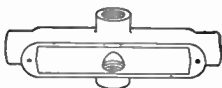
BUB	Each	Size In.	Std. Pkg.
BUB3	\$1.90	1	25
BUB4	2.15	1 1/4	10
BUB5	4.15	1 1/2	10
BUB6	5.00	2	5
BUB7	7.60	2 1/2	5
BUB8	10.20	3	5
BUB9	16.35	3 1/2	5
BUB10	19.00	4	5

**Type BUF**



BUF	Each	Size In.	Std. Pkg.
BUF3	\$1.90	1	25
BUF4	2.15	1 1/4	10
BUF5	4.15	1 1/2	10
BUF6	5.00	2	5
BUF7	7.60	2 1/2	5
BUF8	10.20	3	5
BUF9	16.35	3 1/2	5
BUF10	19.00	4	5

**Type BX**



BX	Each	Size In.	Std. Pkg.
BX3	\$2.50	1	25
BX4	2.75	1 1/4	10
BX5	5.15	1 1/2	10
BX6	6.25	2	5
BX7	\$8.50	2 1/2	5
BX8	12.50	3	5
BX9	21.00	3 1/2	5
BX10	26.00	4	5

**Mogul Covers**

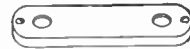
Schedule CR

**For Condulets of the Mogul Series**

Bakelite



1-Wire



2-Wire

Size Inches	Std. Pkg.	1-Wire		Diam. Holes In.	2-Wire		Diam. Holes In.
		Cat. No.	Each		Cat. No.	Each	
1 or 1 1/4	10	CF241	\$1.90	1 5/16	CF242	\$1.90	1 1/16
1 1/2 or 2	5	CF261	3.50	2	CF262	3.50	1 1/16
2 1/2 or 3	5	CF281	5.50	2 5/16	CF282	5.50	1 1/2
3 1/2 or 4	5	CF291	8.25	2 5/16	CF292	8.25	2



3-Wire



4-Wire

Size Inches	Std. Pkg.	3-Wire		Diam. Holes In.	4-Wire		Diam. Holes In.
		Cat. No.	Each		Cat. No.	Each	
1 or 1 1/4	10	CF243	\$1.90	2 1/32	CF244	\$1.90	1 9/32
1 1/2 or 2	5	CF263	3.50	1	CF264	3.50	7/8
2 1/2 or 3	5	CF283	5.50	1 3/8	CF284	5.50	1 1/4
3 1/2 or 4	5	CF293	8.25	1 3/8	CF294	8.25	1 5/8



5-Wire



6-Wire

Size Inches	Std. Pkg.	5-Wire		Diam. Holes In.	6-Wire		Diam. Holes In.
		Cat. No.	Each		Cat. No.	Each	
1 or 1 1/4	10	CF245	\$1.90	1 7/32	CF246	\$1.90	1 1/2
1 1/2 or 2	5	CF265	3.50	3/4	CF266	3.50	7/8
2 1/2 or 3	5	CF285	5.50	1 1/8	CF286	5.50	1
3 1/2 or 4	5	CF295	8.25	1 1/8	CF296	8.25	1 3/8

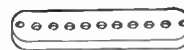


7-Wire

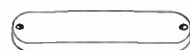


8-Wire

Size Inches	Std. Pkg.	7-Wire		Diam. Holes In.	8-Wire		Diam. Holes In.
		Cat. No.	Each		Cat. No.	Each	
1 or 1 1/4	10	CF247	\$1.90	1 1/2	CF248	\$1.90	7/16
1 1/2 or 2	5	CF267	3.50	1 1/16	CF268	3.50	5/8
2 1/2 or 3	5	CF287	5.50	1	CF288	5.50	7/8
3 1/2 or 4	5	CF297	8.25	1 3/8	CF298	8.25	1 3/8



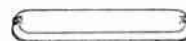
9-Wire



Blank

Size Inches	Std. Pkg.	9-Wire		Diam. Holes In.	Blank		Each
		Cat. No.	Each		Cat. No.	Each	
1 or 1 1/4	10	CF249	\$1.90	3/8	CF534	\$1.25	...
1 1/2 or 2	5	CF269	3.50	9/16	CF536	3.00	...
2 1/2 or 3	5	CF289	5.50	1 1/16	CF538	4.50	...
3 1/2 or 4	5	CF299	8.25	1 1/16	CF539	7.30	...

**Cast Feraloy Covers—Blank**



Size Inches	Std. Pkg.	Without Gasket		With Gasket	
		Cat. No.	Each	Cat. No.	Each
1 or 1 1/4	10	BG47	\$1.10	BG48	\$1.50
1 1/2 or 2	5	BG67	1.75	BG68	2.40
2 1/2 or 3	5	BG87	4.00	BG88	5.40
3 1/2 or 4	5	BG97	6.00	BG98	7.50

Cadmium-galvanized is the standard finish for the cast feraloy covers.

## FD Series Deep Type Condulets

Schedule CR

Take covers and deep or shallow flush rectangular wiring devices, or plug receptacle housings.

Cadmium-galvanized is the standard finish.

### Type FD



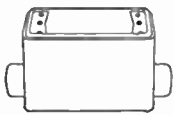
Cat. No.	Each	Size In.	Std. Pkg.
FD1	\$ .75	1/2	50
FD2	.85	3/4	50
FD3	1.00	1	25

### Type FDA



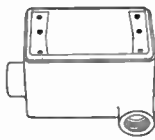
Cat. No.	Each	Size In.	Std. Pkg.
FDA1	\$ .75	1/2	50
FDA2	.85	3/4	50
FDA3	1.00	1	25

### Type FDC



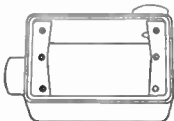
FDC1	\$ .85	1/2	50
FDC2	1.05	3/4	50
FDC3	1.25	1	25

### Type FDL



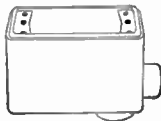
FDL1	\$ .85	1/2	50
FDL2	1.05	3/4	50
FDL3	1.25	1	25

### Type FDR



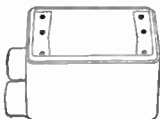
FDR1	\$ .85	1/2	50
FDR2	1.05	3/4	50
FDR3	1.25	1	25

### Type FDLA



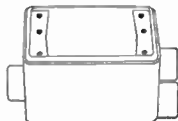
FDLA1	\$ .85	1/2	50
FDLA2	1.05	3/4	50
FDLA3	1.25	1	25

### Type FDD



FDD1	\$ .85	1/2	50
FDD2	1.05	3/4	50
FDD3	1.25	1	25

### Type FDCC



FDCC1	\$1.10	1/2	50
†FDCC21	1.35	3/4	50
†FDCC31	1.55	1	25

### Type FDCA



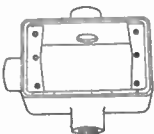
FDCA1	\$1.10	1/2	50
FDCA2	1.35	3/4	50
FDCA3	1.55	1	25

### Type FDCT



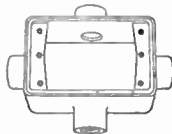
FDCT1	\$1.10	1/2	50
FDCT2	1.35	3/4	50
FDCT3	1.55	1	25

### Type FDT



FDT1	\$1.10	1/2	50
FDT2	1.35	3/4	50
FDT3	1.55	1	25

### Type FDX



FDX1	\$1.30	1/2	50
FDX2	1.60	3/4	50
FDX3	1.80	1	25

†The hubs at the right in the illustration are 1/2 inch.

## FS Series Shallow Type Condulets

Schedule CR

Take covers and shallow flush rectangular wiring devices or plug receptacle housings.

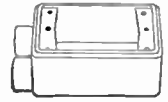
Cadmium-galvanized is the standard finish.

### Type FS



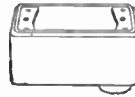
Cat. No.	Each	Size In.	Std. Pkg.
FS1	\$ .65	1/2	50
FS2	.75	3/4	50
FS3	.85	1	25

### Type FSS



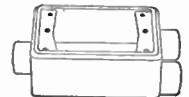
Cat. No.	Each	Size In.	Std. Pkg.
FSS1	\$ .75	1/2	50
FSS2	.90	3/4	50
FSS3	1.10	1	25

### Type FSA



FSA1	\$ .65	1/2	50
FSA2	.75	3/4	50
FSA3	.85	1	25

### Type FSCC



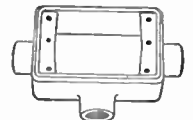
FSCC1	\$1.00	1/2	50
FSCC21†	1.25	3/4	50
FSCC31†	1.45	1	25

### Type FSC



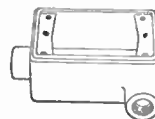
FSC1	\$ .75	1/2	50
FSC2	.90	3/4	50
FSC3	1.10	1	25

### Type FSCT



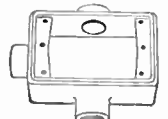
FSCT1	\$1.00	1/2	50
FSCT2	1.25	3/4	50
FSCT3	1.45	1	25

### Type FSL



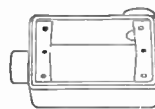
FSL1	\$ .75	1/2	50
FSL2	.90	3/4	50
FSL3	1.10	1	25

### Type FST



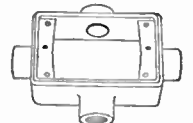
FST1	\$1.00	1/2	50
FST2	1.25	3/4	50
FST3	1.45	1	25

### Type FSR



FSR1	\$ .75	1/2	50
FSR2	.90	3/4	50
FSR3	1.10	1	25

### Type FSX



FSX1	\$1.20	1/2	50
FSX2	1.50	3/4	50
FSX3	1.70	1	25

†The hubs at the right in the illustration are 1/2 inch.

### 2-Gang Tandem

Takes covers and shallow flush rectangular wiring devices, or plug receptacle housings (same as the FS Series).

Cadmium-galvanized is the standard finish.

### Type FS



Cat. No.	Each	Size In.	Std. Pkg.
FS17	\$1.65	1/2	25
FS27	1.75	3/4	25
FS37	1.85	1	10

### Type FSC



Cat. No.	Each	Size In.	Std. Pkg.
FSC17	\$1.75	1/2	25
FSC27	1.85	3/4	25
FSC37	1.95	1	10

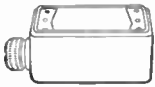


**FS Series Threadless Condulets**

Schedule CR

Threadless and threaded condulets take covers and shallow flush rectangular wiring devices, or plug receptacle housing. Cadmium-galvanized is the standard finish.

**Type FS**



Thick Wall

Cat. No.	Each	Size In.	Std. Pkg.
FS191	\$ .70	1/2	50
FS291	.85	3/4	50
<b>Thin Wall</b>			
FS141	\$ .70	1/2	50
FS241	.85	3/4	50

**Type FSA**



Thick Wall

FSA191	\$ .70	1/2	50
FSA141	\$ .70	1/2	50

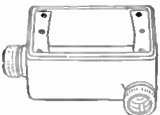
**Type FSC**



Thick Wall

FSC191	\$ .85	1/2	50
FSC291	1.10	3/4	50
FSC391	1.40	1	25
<b>Thin Wall</b>			
FSC141	\$ .85	1/2	50
FSC241	1.10	3/4	50
FSC341	1.40	1	25

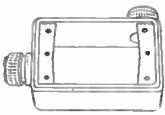
**Type FSL**



Thick Wall

FSL191	\$ .85	1/2	50
FSL291	1.10	3/4	50
<b>Thin Wall</b>			
FSL141	\$ .85	1/2	50
FSL241	1.10	3/4	50

**Type FSR**



Thick Wall

FSR191	\$ .85	1/2	50
FSR291	1.10	3/4	50
<b>Thin Wall</b>			
FSR141	\$ .85	1/2	50
FSR241	1.10	3/4	50

**2-Gang Tandem**

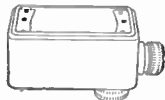
**Type FS**



Thick Wall

FS197	\$ 1.70	1/2	25
FS297	1.85	3/4	25
<b>Thin Wall</b>			
FS147	\$ 1.70	1/2	25
FS247	1.85	3/4	25

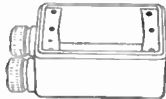
**Type FSLA**



Thick Wall

Cat. No.	Each	Size In.	Std. Pkg.
FSLA191	\$ .85	1/2	50
FSLA141	\$ .85	1/2	50

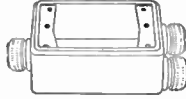
**Type FSS**



Thick Wall

FSS191	\$ .85	1/2	50
FSS141	\$ .85	1/2	50

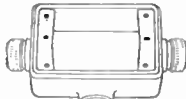
**Type FSCC**



Thick Wall

FSCC191	\$ 1.15	1/2	50
FSCC291	1.45	3/4	50
<b>Thin Wall</b>			
FSCC141	\$ 1.15	1/2	50
FSCC241	1.45	3/4	50

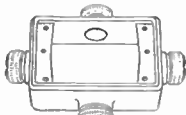
**Type FSCT**



Thick Wall

FSCT191	\$ 1.15	1/2	50
FSCT291	1.55	3/4	50
FSCT391	1.90	1	25
<b>Thin Wall</b>			
FSCT141	\$ 1.15	1/2	50
FSCT241	1.55	3/4	50
FSCT341	1.90	1	25

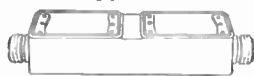
**Type FSX**



Thick Wall

FSX191	\$ 1.40	1/2	50
FSX291	1.90	3/4	50
FSX391	2.30	1	25
<b>Thin Wall</b>			
FSX141	\$ 1.40	1/2	50
FSX241	1.90	3/4	50
FSX341	2.30	1	25

**Type FSC**



Thick Wall

FSC197	\$ 1.85	1/2	25
FSC297	2.05	3/4	25
<b>Thin Wall</b>			
FSC147	\$ 1.85	1/2	25
FSC247	2.05	3/4	25

**Conduit Covers**

Schedule CR

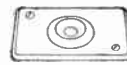
**For Condulets of the FS and FD Series; FS Series 2-Gang Tandem**

Cadmium-galvanized is the standard finish.

Standard package quantity for all covers listed below is 50.

**For Single Push Button Switches**

Sheet Steel



Cat. No.	Each	Style
DS7	\$ .15	Surface
DSS7	.15	Flush

**For Rotary Flush Switches**

Sheet Steel



Cat. No.	Each	Style
DS9	\$ .15	Surface
DSS9	.15	Flush

**For Hart & Hegeman Tumbler Flush Switches with Round Handles**

Sheet Steel



DS27	\$ .15	Surface
DSS27	.15	Flush

**For Hubbell and Arrow E Toggle Flush Switches**

Sheet Steel



DS29	\$ .15	Surface
DSS29	.15	Flush

**For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches**

Sheet Steel



DS8	\$ .15	Surface
DSS8	.15	Flush

Cast Feraloy—Guarded



DS8g	\$ .35	Surface
DS8g	.35	Flush

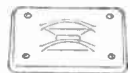
**For G-E, Arrow E, Bryant, Hart & Hegeman, and Hubbell Tumbler Flush Switches with Square Handles**

Sheet Steel



DS32	\$ .15	Surface
DSS32	.15	Flush

Cast Feraloy—Guarded



DS32g	\$ .35	Surface
DS32g	.35	Flush

**For Round Flush Receptacles**

Sheet Steel



Cat. No.	Each	Style
DS21	\$ .25	Surface
DSS21	.25	Flush

Sheet Steel—Pivoted Lid



Cat. No.	Each	Style
DS28	\$ .40	Surface
DS28	.40	Flush

Sheet Steel—Spring Hinge Lid



Cat. No.	Each	Style
DS10	\$ .60	Surface
DSS10	.60	Flush

Cast Feraloy—with Spring Door



Cat. No.	Each	Style
DS10g	\$ 1.25	Surface
DS10g	1.25	Flush

## Condulet Covers

Schedule CR

For Condulets of the FS and FD Series; FS Series 2-Gang Tandem

Cadmium-galvanized is the standard finish. Standard package quantity for covers listed below is 50.

### For Standard Duplex Flush Receptacles

Sheet Steel



### For G-E 30-Amp. Flush Plug Receptacles

Sheet Steel



Opening, 1 5/8 inches.

Cat. No.	Each	Style	Cat. No.	Each	Style
DS23	\$ .30	Surface	DS35	\$.25	Surface
DSS23	.30	Flush	DSS35	.25	Flush

### For Pilot Lamp Flush Receptacles

Sheet Steel



Furnished with clear or colored jewels

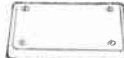
Style	Surface		Flush	
	Cat. No.	Each	Cat. No.	Each
Ruby	DS24	\$1.00	DSS24	\$1.00
Olive green	DS34	1.00	DSS34	1.00
Emerald	DS41	1.00	DSS41	1.00
Canary	DS42	1.00	DSS42	1.00
Amethyst	DS43	1.00	DSS43	1.00
Amber	DS44	1.00	DSS44	1.00
Topaz	DS45	1.00	DSS45	1.00
Opal	DS46	1.00	DSS46	1.00
Frosted	DS47	1.00	DSS47	1.00
Clear	DS48	1.00	DSS48	1.00
Blue	DS49	1.00	DSS49	1.00

### Blank Covers

Sheet Steel



Cast Feraloy; with Gasket



Cat. No.	Each	Style	Cat. No.	Each	Style
DS100	\$.10	Surface	DS100g	\$.25	Surface
DSS100	.10	Flush	DS100g	.25	Flush

### Vaporproof Covers with Switch Operating Mechanism

For Condulets of the FS and FD series and FS series, two-gang tandem.

Surface or flush. Furnished with gasket.



#### For External Operation of Double Push Button Switches

Cat. No.	With Handle Each	Material	Std. Pkg.
DS108	\$1.75	Cast Feraloy	25
DS1008	2.50	Cast Brass	25



#### For Momentary Contact Switches

Cat. No.	Each	Material	Std. Pkg.
DS107	\$1.75	Cast Feraloy	25
DS1007	2.50	Cast Brass	25

#### For External Operation of Square Handle Tumbler Switches For Standard Operation On or Off



Cat. No.	Each	Material	Std. Pkg.
DS128	\$1.75	Cast Feraloy	25
DS1028	2.50	Cast Brass	25



#### For Momentary Contact Operation A, Normally On—B, Normally Off

CAT. No.		Each	Material	Std. Pkg.
A	B			
DS126	DS127	\$1.75	Cast Feraloy	25
DS1026	DS1027	2.50	Cast Brass	25

## Type BRD Plug Receptacle Housings

Schedule CR

For Condulets of the FS and FD Series; FS Series 2-Gang Tandem

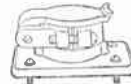
\*30 Amperes, 250 Volts A.C.

Type BRD Housings can be used on Condulets mounted either on the surface of or flush with the wall.

They take Type BP plugs; 2-pole housings are furnished with 30-ampere, 250-volt receptacle BR302; 3-pole housings with 30-ampere, 250-volt receptacle BR303.

Cadmium-galvanized is the standard finish.

### With Spring Door



2-Pole

Cat. No.	Each	Std. Pkg.
BRD6302	\$4.20	10

3-Pole

Cat. No.	Each	Std. Pkg.
BRD6303	\$4.90	10

Threaded



Furnished with gasket.

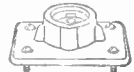
2-Pole

Cat. No.	Each	Std. Pkg.
BRD7302	\$2.80	10

3-Pole

Cat. No.	Each	Std. Pkg.
BRD7303	\$3.35	10

### Plain



2-Pole

Cat. No.	Each	Std. Pkg.
BRD302	\$2.60	10

3-Pole

Cat. No.	Each	Std. Pkg.
BRD303	\$3.10	10

With Aluminum Cap



Furnished with gasket.

2-Pole

Cat. No.	Each	Std. Pkg.
BRD8302	\$3.75	10

3-Pole

Cat. No.	Each	Std. Pkg.
BRD8303	\$4.70	10

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

## FS Series 2-Gang Shallow Type Condulets

Schedule CR

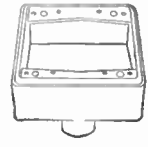
Take covers and flush rectangular wiring devices. Cadmium-galvanized is the standard finish.

### Type FS



Cat. No.	Each	Size In.	Std. Pkg.
FS12	\$1.20	1/2	25
FS22	1.30	3/4	25
FS32	1.40	1	10

### Type FSA



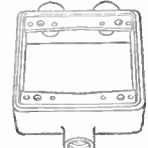
Cat. No.	Each	Size In.	Std. Pkg.
FSA12	\$1.20	1/2	25
FSA22	1.30	3/4	25
FSA32	1.40	1	10

### Type FSC



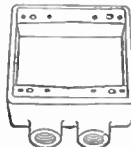
Cat. No.	Each	Size In.	Std. Pkg.
FSC12	\$1.30	1/2	25
FSC222	1.40	3/4	25
FSC32	1.55	1	10

### Type FSD



Cat. No.	Each	Size In.	Std. Pkg.
FSD12	\$1.45	1/2	25
FSD212	1.55	3/4	25
FSD312	1.65	1	10

### Type FSS



Cat. No.	Each	Size In.	Std. Pkg.
FSS222	\$1.40	3/4	25

†The hubs at the top in illustration are 1/2 inch.

If specified, FS Series 2-gang Condulets will be drilled and tapped without extra charge for mounting Types FSTB or YA connection blocks.

**FS Series 2-Gang Threadless Condulets**

*Schedule CR*

Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

Take covers and flush rectangular wiring devices. Cadmium-galvanized is the standard finish.

The FS Series Condulets with their variety of covers permit flush rectangular wiring devices to be mounted either on the surface of or flush with the wall. There is ample room around the wiring device for the passage of extra wires.

Two styles of sheet steel covers for these condulets are available: for surface mounting and for flush mounting. Those for flush mounting are extended to cover the rough plaster line. Cast feraloy covers for these condulets are suitable for either surface or flush mounting.

**Type FS**



Size In.	Std. Pkg.	Thick Wall		Thin Wall	
		Cat. No.	Each	Cat. No.	Each
1/2	25	FS192	\$1.25	FS142	\$1.25
3/4	25	FS292	1.40	FS242	1.40

**Type FSC**



1/2	25	FSC192	\$1.40	FSC142	\$1.40
3/4	25	FSC292	1.60	FSC242	1.60

**Type FSD**



1/2	25	FSD192	\$1.60	FSD142	\$1.60
3/4	25	FSD292	1.75	FSD2142	1.75

†The hubs at the top in the illustration are 1/2 inch.

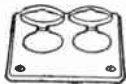
**2-Gang Condulet Covers for Condulets of the FS Series**

For Round Flush Receptacles



Cat. No.	Each	Style	Std. Pkg.
S212	\$.50	Surface	25
SS212	.50	Flush	25

Sheet Steel with Spring Hinge Lids



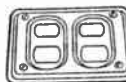
S102	\$1.20	Surface	25
SS102	1.20	Flush	25

For Double Push Button Switches and Standard Duplex Flush Receptacles, Sheet Steel



S8232	\$.50	Surface	25
SS8232	.50	Flush	25

For Standard Duplex Flush Receptacles, Sheet Steel



S232	\$.60	Surface	25
SS232	.60	Flush	25

**2-Gang Condulet Covers**

*Schedule CR*

For Condulets of the FS Series, 2-Gang

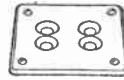
Cadmium-galvanized is the standard finish.

Standard package quantity on all covers is 25.

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches

Sheet Steel

Cast Feraloy—Guarded

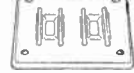
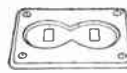


Cat. No.	Each	Style	Cat. No.	Each	Style
S82	\$.30	Surface	S82g	\$.65	Surface
SS82	.30	Flush	S82g	.65	Flush

For G-E, Arrow E, Bryant, Hart & Hegeman, and Hubbell Square Handle Tumbler Flush Switches

Sheet Steel

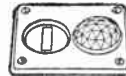
Cast Feraloy—Guarded



S322	\$.30	Surface	S322g	\$.65	Surface
SS322	.30	Flush	S322g	.65	Flush

For G-E, Arrow E, Bryant, H & H, and Hubbell Tumbler Flush Switches with Square Handles and for Pilot Lamp Flush Receptacles

Sheet Steel, with Ruby Jewel



Cat. No.

Each

Style

S32242	\$1.25	Surface
SS32242	1.25	Flush

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches and H & H No. 8996 Combination Receptacle and Toggle Switch

Sheet Steel



Cat. No.

Each

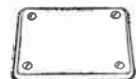
Style

S8392	\$.30	Surface
SS8392	.30	Flush

**Blank Metal Covers**

Sheet Steel

Cast Feraloy, with Gasket



Cat. No.	Each	Style	Cat. No.	Each	Style
S1002	\$.20	Surface	S1002g	\$.50	Surface
SS1002	.20	Flush	S1002g	.50	Flush

**Vaporproof Covers with Switch Operating Mechanism**

Surface or flush. Furnished with gasket.

For External Operation of Double Push Button Switches



Cat. No.

With Handle Each

Material

DS1082	\$3.00	Cast Feraloy
DS10082	5.75	Cast Brass

For Momentary Contact Switches



Cat. No.

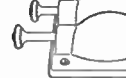
With Handle Each

Material

DS1072	\$3.00	Cast Feraloy
DS10072	5.75	Cast Brass

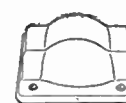
For External Operation of Square Handle Tumbler Switches

For Standard Operation, On or Off



DS1282	\$3.00	Cast Feraloy
DS10282	5.75	Cast Brass

For Momentary Contact Operation  
A, Normally On—B, Normally Off



CAT. No.	Each	Material
DS1262	\$3.00	Cast Feraloy
DS10262	5.75	Cast Brass

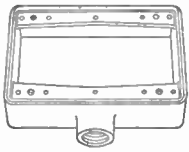


## FS Series 3-Gang Shallow Type Condulets

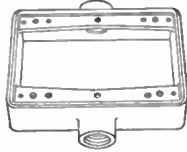
Schedule CR

Take covers and flush rectangular wiring devices.  
Cadmium-galvanized is the standard finish.

Type FS



Type FSC



Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
FS23	\$1.80	3/4	25	FSC23	\$1.90	3/4	25
FS33	1.95	1	10	FSC333	2.05	1	10
.....	.....	.....	.....	FSC43	2.20	1 1/4	10

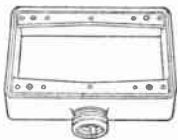
## FS Series 3-Gang Threadless Condulets

Schedule CR

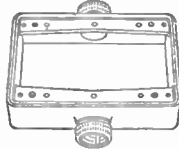
Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

Take covers and flush rectangular wiring devices.  
Cadmium-galvanized is the standard finish.

Type FS



Type FSC



Type	Size In.	Std. Pkg.	Thick Wall		Thin Wall	
			Cat. No.	Each	Cat. No.	Each
FS	3/4	25	FS293	\$1.90	FS243	\$1.90
FSC	3/4	25	FSC293	2.10	FSC243	2.10

### 3-Gang Condulet Covers

For Condulets of the FS Series, 3-Gang

Cadmium-galvanized is the standard finish.

Standard package quantity on all covers is 25.

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches

Sheet Steel



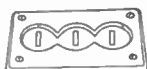
Cast Feraloy—Guarded



Cat. No.	Each	Style	Cat. No.	Each	Style
S83	\$.45	Surface	S83g	\$1.00	Surface
SS83	.45	Flush	S83g	1.00	Flush

For G-E, Arrow E, Bryant, H & H, and Hubbell Tumbler Flush Switches with Square Handles

Sheet Steel



Cast Feraloy—Guarded



Cat. No.	Each	Style	Cat. No.	Each	Style
S323	\$.45	Surface	S323g	\$1.00	Surface
SS323	.45	Flush	S323g	1.00	Flush

### Blank Metal Covers

Sheet Steel



Cast Feraloy, with Gasket



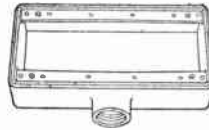
Cat. No.	Each	Style	Cat. No.	Each	Style
S1003	\$.40	Surface	S1003g	\$.75	Surface
SS1003	.40	Flush	S1003g	.75	Flush

## FS Series 4-Gang Shallow Type Condulets

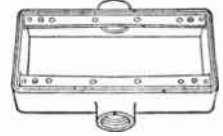
Schedule CR

Take covers and flush rectangular wiring devices.  
Cadmium-galvanized is the standard finish.

Type FS



Type FSC



Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
FS24	\$2.20	3/4	10	FSC24	\$2.35	3/4	10
FS34	2.40	1	10	FSC34	2.50	1	10

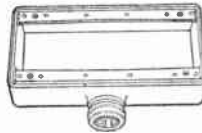
## FS Series 4-Gang Threadless Condulets

Schedule CR

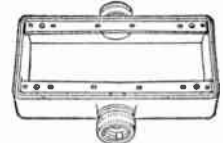
Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

Take covers and flush rectangular wiring devices.  
Cadmium-galvanized is the standard finish.

Type FS



Type FSC



Type	Size In.	Std. Pkg.	Thick Wall		Thin Wall	
			Cat. No.	Each	Cat. No.	Each
FS	3/4	10	FS294	\$2.30	FS244	\$2.30
FSC	3/4	10	FSC294	2.55	FSC244	2.55

### 4-Gang Condulet Covers

For Condulets of the FS Series, 4-Gang

Cadmium-galvanized is the standard finish.

Standard package quantity on all covers is 10.

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches

Sheet Steel



Cast Feraloy—Guarded



Cat. No.	Each	Style	Cat. No.	Each	Style
S84	\$.60	Surface	S84g	\$1.40	Surface
SS84	.60	Flush	S84g	1.40	Flush

For G-E, Arrow E, Bryant, H & H, and Hubbell Tumbler Flush Switches with Square Handles

Sheet Steel



Cast Feraloy—Guarded



Cat. No.	Each	Style	Cat. No.	Each	Style
S324	\$.60	Surface	S324g	\$1.40	Surface
SS324	.60	Flush	S324g	1.40	Flush

### Blank Metal Covers

Sheet Steel



Cast Feraloy—Guarded



Cat. No.	Each	Style	Cat. No.	Each	Style
S1004	\$.60	Surface	S1004g	\$1.00	Surface
SS1004	.60	Flush	S1004g	1.00	Flush

**G-H Series Condulets**

Schedule CR

**With Adjustable Bar**

Condulets of the G-H Series with adjustable bar are compact, shallow, and the same diameter as the base of the largest device for which each form is designed.

The hubs are cast solid with the body and have an integral bushing and tapered thread.

The adjustable bar is removable and should be attached to and centered on the wiring device. The wiring device is then centered on the body. The adjustable bar clamps it to the flange and securely holds it in position.

A gasket can be used between the cover or wiring device and the Condulet. Gaskets are not regularly furnished with these Condulets and, if desired, must be specifically ordered.

The fastening screws are furnished with and so retained in the covers that they cannot fall out.

These Condulets take covers or round base wiring devices. Cadmium-galvanized is the standard finish.

**Limiting Dimensions of Round Base Wiring Devices for Use with Condulets of the G-H Series with Adjustable Bar**

	Form 5	Form 10	Form 20
Diameter of Base . . . in.	2 to 2 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub> to 3	3 to 3 <sup>1</sup> / <sub>16</sub>
Fastening Screw Spacing			
Center to Center . . . in.	5 <sup>8</sup> to 1 <sup>1</sup> / <sub>16</sub>	5 <sup>8</sup> to 1 <sup>7</sup> / <sub>8</sub>	5 <sup>8</sup> to 2 <sup>1</sup> / <sub>16</sub>

Forms 5, 10, and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

**Type G**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
G151	\$.55	1/2	100
G252	.65	3/4	50
G353	.90	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
G1101	\$.65	1/2	50
G2102	.80	3/4	25
G3103	1.00	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
G1201	\$.90	1/2	50
G2202	.95	3/4	25
G3203	1.20	1	25

**Type GA**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
GA151	\$.75	1/2	100
GA252	.85	3/4	50
GA353	1.10	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
GA1101	\$.85	1/2	50
GA2102	1.00	3/4	25
GA3103	1.20	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
GA1201	\$1.10	1/2	50
GA2202	1.20	3/4	25
GA3203	1.50	1	25

**Type GL**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
GL151	\$.60	1/2	100
GL252	.70	3/4	50
GL353	.95	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
GL1101	\$.70	1/2	50
GL2102	.85	3/4	25
GL3103	1.05	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
GL1201	\$.95	1/2	50
GL2202	1.05	3/4	25
GL3203	1.35	1	25

**Type GLA**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
GLA151	\$.75	1/2	100
GLA252	.85	3/4	50
GLA353	1.10	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
GLA1101	\$.85	1/2	50
GLA2102	1.00	3/4	25
GLA3103	1.20	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
GLA1201	\$1.10	1/2	50
GLA2202	1.20	3/4	25
GLA3203	1.50	1	25

**G-H Series Condulets**

Schedule CR

**With Adjustable Bar**

Take covers or round base wiring devices. Cadmium-galvanized is the standard finish.

**Type GT**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
GT151	\$.75	1/2	100
GT252	.85	3/4	50
GT353	1.10	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
GT1101	\$.85	1/2	50
GT2102	1.00	3/4	25
GT3103	1.20	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
GT1201	\$1.10	1/2	50
GT2202	1.20	3/4	25
GT3203	1.50	1	25

**Type GTA**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
GTA151	\$.90	1/2	100
GTA252	1.00	3/4	50
GTA353	1.35	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
GTA1101	\$1.00	1/2	50
GTA2102	1.15	3/4	25
GTA3103	1.45	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
GTA1201	\$1.25	1/2	50
GTA2202	1.40	3/4	25
GTA3203	1.80	1	25

**Type GX**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
GX151	\$.90	1/2	100
GX252	1.00	3/4	50
GX353	1.35	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
GX1101	\$1.00	1/2	50
GX2102	1.15	3/4	25
GX3103	1.45	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
GX1201	\$1.25	1/2	50
GX2202	1.40	3/4	25
GX3203	1.80	1	25

**Type H**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
H15	\$.45	1/2	100
H25	.55	3/4	50
H35	.80	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
H110	\$.55	1/2	50
H210	.70	3/4	25
H310	.90	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
H120	\$.80	1/2	50
H220	.85	3/4	25
H320	1.10	1	25

**Type HA**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
HA15	\$.50	1/2	100
HA25	.60	3/4	50
HA35	.85	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
HA110	\$.60	1/2	50
HA210	.75	3/4	25
HA310	.95	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
HA120	\$.85	1/2	50
HA220	.90	3/4	25
HA320	1.20	1	25

**Type HH**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
HH151	\$.55	1/2	100
HH252	.65	3/4	50
HH353	.90	1	25

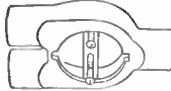
  

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
HH1101	\$.65	1/2	50
HH2102	.80	3/4	25
HH3103	1.00	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
HH1201	\$.90	1/2	50
HH2202	.95	3/4	25
HH3203	1.20	1	25

**Type HHC**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
HHC151	\$.75	1/2	100
HHC252	.85	3/4	50
HHC353	1.10	1	25

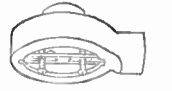
  

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
HHC1101	\$.85	1/2	50
HHC2102	1.00	3/4	25
HHC3103	1.20	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
HHC1201	\$1.10	1/2	50
HHC2202	1.20	3/4	25
HHC3203	1.50	1	25

**Type HLA**



Form 5

Cat. No.	Each	Size In.	Std. Pkg.
HLA15	\$.60	1/2	100
HLA25	.70	3/4	50
HLA35	.95	1	25

Form 10			
Cat. No.	Each	Size In.	Std. Pkg.
HLA110	\$.70	1/2	50
HLA210	.85	3/4	25
HLA310	1.05	1	25

Form 20			
Cat. No.	Each	Size In.	Std. Pkg.
HLA120	\$.95	1/2	50
HLA220	1.05	3/4	25
HLA320	1.35	1	25

## G-H Series Threadless Condulets

Schedule CR

### With Adjustable Bar

Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

Take covers or round base wiring devices. Furnished with adjustable bar.

Cadmium-galvanized is the standard finish.

Condulets of the G-H series with adjustable bar are compact, shallow, and the same diameter as the base of the largest wiring device for which each form is designed.

The adjustable bar is removable and should be attached to and centered on the wiring device. The wiring device is then centered on the body. The adjustable bar clamps it to the flange and securely holds it in position.

A gasket can be used between the cover or wiring device and the Condulet. Gaskets are not regularly furnished with these Condulets and, if desired, must be specifically ordered.

Fastening screws are furnished with and so retained in the covers that they cannot fall out.

### Limiting Dimensions of Round Base Wiring Devices for Use with Condulets of the G-H Series with Adjustable Bar

Diameter of Base.....in.	Form 5	Form 10
Fastening Screw Spacing, Center to Center.....in.	2 to 2 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub> to 3
	5/8 to 1 <sup>1</sup> / <sub>16</sub>	5/8 to 1 <sup>1</sup> / <sub>8</sub>

Forms 5 and 10 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

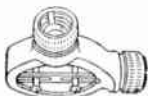
### Type G



#### Form 5

Size In.	Std. Pkg.	Thick Wall		Thin Wall	
		Cat. No.	Each	Cat. No.	Each
1/2	100	G159	\$.65	G154	\$.65
3/4	50	G259	.85	G254	.85
<b>Form 10</b>					
1/2	50	G119	\$.75	G114	\$.75
3/4	25	G219	1.00	G214	1.00

### Type GL



#### Form 5

1/2	100	GL159	\$.70	GL154	\$.70
<b>Form 10</b>					
1/2	50	GL119	\$.80	GL114	\$.80

### Type GT



#### Form 5

1/2	100	GT159	\$.90	GT154	\$.90
3/4	50	GT259	1.15	GT254	1.15

### Type H



#### Form 5

1/2	100	H159	\$.50	H154	\$.50
3/4	50	H259	.65	.....	.....
<b>Form 10</b>					
1/2	50	H119	\$.60	H114	\$.60

## Condulet Covers

Schedule CR

### For Condulets of the G-H Series with Adjustable Bar

Cadmium-galvanized is the standard finish on metal covers.

Standard package: Forms 5 and 10 assorted, 100; Form 20 assorted, 50.

### Porcelain with Wire Holes



1-Wire



4-Wire

#### Forms 5 and 10

Cat. No.	Each	Style	Diameter Holes Inches
5101	\$.15	1-Wire	13/32
5102	.15	2-Wire	5/16
5103	.15	3-Wire	5/16
510400	.15	4-Wire	5/16

#### Form 20

201	\$.35	1-Wire	19/32
202	.35	2-Wire	5/16
203	.35	3-Wire	5/16
20400	.35	4-Wire	5/16

### Sheet Steel with Brass Nipple



Male Nipple



Female Nipple

#### Forms 5 and 10

Size Nipple Inches	MALE		FEMALE	
	Cat. No.	Each	Cat. No.	Each
1/8	5105	\$.20	5106	\$.20
1/4	51013	.25	51014	.25
3/8	5107	.30	5108	.30
1/2	51015	.35	51016	.35

#### Form 20

1/8	205	\$.30	206	\$.30
1/4	2013	.35	2014	.35
3/8	207	.40	208	.40
1/2	2015	.45	2016	.45

### Blank Metal



#### Forms 5 and 10

SHEET STEEL		CAST FERALLOY	
Cat. No.	Each	Cat. No.	Each
51000	\$.10	51000g	\$.20

#### Form 20

2000	\$.25	2000g	\$.35
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Forms 5, 10, and 20 indicate the sizes of condulets which take the covers and wiring devices correspondingly classified.



**G-H Series Condulets**

Schedule CR

Without Adjustable Bar

Take covers or wiring devices.  
Cadmium-galvanized is the standard finish.

**Type G**



Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
G157	\$ .40	1/2	100
G257	.50	3/4	50
G357	.75	1	25
Form 10			
G117	\$ .50	1/2	50
G217	.65	3/4	25
G317	.85	1	25
Form 20			
G127	\$ .70	1/2	50
G227	.75	3/4	25
G327	1.00	1	25

**Type GA**



Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
GA157	\$ .60	1/2	100
GA257	.70	3/4	50
GA357	.95	1	25
Form 10			
GA117	\$ .70	1/2	50
GA217	.85	3/4	25
GA317	1.05	1	25
Form 20			
GA127	\$ .90	1/2	50
GA227	1.00	3/4	25
GA327	1.30	1	25

**Type GL**



Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
GL157	\$ .45	1/2	100
GL257	.55	3/4	50
GL357	.80	1	25
Form 10			
GL117	\$ .55	1/2	50
GL217	.70	3/4	25
GL317	.90	1	25
Form 20			
GL127	\$ .75	1/2	50
GL227	.85	3/4	25
GL327	1.15	1	25

**Type GLA**



Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
GLA157	\$ .60	1/2	100
GLA257	.70	3/4	50
GLA357	.95	1	25
Form 10			
GLA117	\$ .70	1/2	50
GLA217	.85	3/4	25
GLA317	1.05	1	25
Form 20			
GLA127	\$ .90	1/2	50
GLA227	1.00	3/4	25
GLA327	1.30	1	25

**Type GT**



Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
GT157	\$ .60	1/2	100
GT257	.70	3/4	50
GT357	.95	1	25
Form 10			
GT117	\$ .70	1/2	50
GT217	.85	3/4	25
GT317	1.05	1	25
Form 20			
GT127	\$ .90	1/2	50
GT227	1.00	3/4	25
GT327	1.30	1	25

**Type GX**



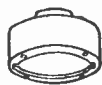
Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
GX157	\$ .75	1/2	100
GX257	.85	3/4	50
GX357	1.20	1	25
Form 10			
GX117	\$ .85	1/2	50
GX217	1.00	3/4	25
GX317	1.30	1	25
Form 20			
GX127	\$ 1.05	1/2	50
GX227	1.20	3/4	25
GX327	1.60	1	25

**Type H**



Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
H157	\$ .30	1/2	100
H257	.40	3/4	50
H357	.65	1	25
Form 10			
H117	\$ .40	1/2	50
H217	.55	3/4	25
H317	.75	1	25
Form 20			
H127	\$ .60	1/2	50
H227	.65	3/4	25
H327	.90	1	25

**Type HA**



Cat. No.	Form 5		Std. Pkg.
	Each	Size In.	
HA157	\$ .35	1/2	100
HA257	.45	3/4	50
HA357	.70	1	25
Form 10			
HA117	\$ .45	1/2	50
HA217	.60	3/4	25
HA317	.80	1	25
Form 20			
HA127	\$ .65	1/2	50
HA227	.70	3/4	25
HA327	1.00	1	25

**G-H Series Threadless Condulets**

Schedule CR

Without Adjustable Bar

Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

Cadmium-galvanized is the standard finish.

**Type G**



Size, In.	Std. Pkg.	Form 5		Thin Wall	
		Cat. No.	Each	Cat. No.	Each
1/2	100	G1597	\$.50	G1547	\$.50
	50	G2597	.70	G2547	.70
3/4	50	G1197	\$.60	G1147	\$.60
	25	G2197	.85	G2147	.85

**Type GL**



Size, In.	Std. Pkg.	Form 5		Form 10	
		Cat. No.	Each	Cat. No.	Each
1/2	100	GL1597	\$.55	GL1547	\$.55
	50	GL1197	\$.65	GL1147	\$.65

**Type GT**



Size, In.	Std. Pkg.	Form 5		Form 10	
		Cat. No.	Each	Cat. No.	Each
1/2	100	GT1597	\$.75	GT1547	\$.75
	50	GT2597	1.00	GT2547	1.00

**Type H**



Size, In.	Std. Pkg.	Form 5		Form 10	
		Cat. No.	Each	Cat. No.	Each
1/2	100	H1597	\$.35	H1547	\$.35
	50	H2597	.50	.....	....
3/4	50	H1197	\$.45	H1147	\$.45

**GH Midget Guard Fixtures**

For Forms 5 and 20 Condulets of the G-H Series without Adjustable Bar

Cadmium-galvanized is the standard finish.

**Non-Weatherproof**

Non-Weatherproof complete consists of holder No. GH 10, guard, receptacle No. H557 and gaskets.



GH 14

Length Guard In.	Size Lamps	Std. Pkg.	Cat. No.	Each
3 3/4	15-Watt (A17)	25	GH13	\$2.45
	25-Watt (A19)			
4 5/8	40 and 50-Watt (A21)	25	GH14	2.75
	60-Watt (A21)	25	GH15	2.80
5 1/4	100-Watt (A23)	25	GH16	3.35

**Weatherproof**

Weatherproof complete consists of holder No. GH 20, guard, receptacle No. C337 and gaskets.



GH 23

Length Guard In.	Size Lamps	Std. Pkg.	Cat. No.	Each
3 3/4	15-Watt (A17)	25	GH23	\$2.90
	25-Watt (A19)			
4 5/8	40 and 50-Watt (A21)	25	GH24	3.20
	60-Watt (A21)	25	GH25	3.25
5 1/4	100-Watt (A23)	25	GH26	3.80

## Conduit Wiring Devices

Schedule CR

For Form 5 Condulets of the G-H Series  
without Adjustable Bar



With Groove

**Lamp Receptacles  
With Connection Block**

660 Watts, 600 Volts

Made of porcelain.



Without Groove

Cat. No.	Each	Style	Std. Pkg.
H546	\$.50	With Shadeholder Groove	50
H547	.45	Without Shadeholder Groove	50



Porcelain

**Cord Rosettes  
With Connection Block**

660 Watts, 250 Volts



Composition

H553	\$.40	Complete (Porcelain)	50
H554	.50	Complete (Composition)	50
H544	.20	Cap Only (Composition)	50



With Groove

**Lamp Receptacles  
Without Connection Block**

660 Watts, 600 Volts

These receptacles are one-piece, and are made of porcelain.



Without Groove

H556	\$.25	With Shadeholder Groove	100
H557	.25	Without Shadeholder Groove	100

Gasket can be used between conduit and H556 or H557 lamp receptacle, making the installation weatherproof.

If specified on the order, lamp receptacle with lamp grip will be furnished at 10 cents advance in list price.

### Covers

Schedule CR

For Condulets of the G-H Series  
without Adjustable Bar

Cadmium-galvanized is the standard finish for metal covers.



Without Holder

**Receptacle Covers  
Cast Feraloy**

Take Lamp Receptacle H557



With Holder

Cat. No.	Each	Size	Style	Std. Pkg.
H558	\$.50	Form 5	Without Shadeholder	50
H559	.80	Form 5	With Shadeholder (for 2 1/4-Inch Shades)	50

### Takes Sign Receptacles

Takes sign receptacles with supporting screw spacing of 1 1/16 inches. Diameter of hole in cover is 1 3/8 inches.



Cat. No.	Each	Size	Std. Pkg.
H1032	\$.50	Form 10	50

### Porcelain Covers with Wire Holes

Standard package: Forms 5 and 10 assorted, 100; Form 20 assorted, 50.

Diameter of holes: 1-wire, 1 3/32 inch; 2, 3 and 4-wire, 5/16 inch.

FORM 5			FORM 10			FORM 20		
Style	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
1-Wire	H51	\$.20	H101	\$.25	H201	\$.40		
2-Wire	H52	.20	H102	.25	H202	.40		
3-Wire	H53	.20	H103	.25	H203	.40		
4-Wire	H54	.20	H104	.25	H204	.40		

## Service Entrance Condulets

Schedule CM

Form 6

Threaded for heavy wall conduit.  
Cadmium-galvanized is the standard finish.

### Type F Caps

With Cover for 2 and 3-Wire Service

Size In.	Cat. No.	PER 100			Std. Car. Pkg. ton
		Std. Pkg.	Less Car. ton	Less Car. ton	
1/2	F163	\$19.38	\$24.25	\$31.00	50 5
3/4	F263	25.00	31.25	40.00	50 5
*1	F363	31.25	39.05	50.00	20 2
1 1/4	F463	46.88	58.60	58.60	10 1
1 1/2	F563	65.00	81.25	81.25	5 1
2	F663	157.50	196.90	196.90	5 1
2 1/2	F763	325.00	325.00	325.00	1 1
3	F863	540.00	540.00	540.00	1 1
3 1/2	F963	665.00	665.00	665.00	1 1
4	F1063	1090.00	1090.00	1090.00	1 1



Type F, Form 6 service entrance caps can also be furnished with 4 or 5-wire covers in sizes up to and including 2 inches, at same price.

\*Can be furnished with a smaller body for No. 8 wire, at same price by specifying No. F363-M1.

### Type LB Elbows

With Blank Cast Cover

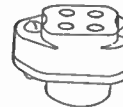
1/2	LB16	\$21.88	\$27.35	\$35.00	50 5
3/4	LB26	25.00	31.25	40.00	50 5
1	LB36	33.75	42.20	54.00	25 5
1 1/4	LB46	56.88	71.10	91.00	10 5
1 1/2	LB56	103.75	129.70	129.70	3 1
2	LB666	152.50	152.50	152.50	1 1
2 1/2	LB76	332.50	332.50	332.50	1 1



### Type FBA End Fittings

For 2, 3 and 4-Wire Service

1/2	FBA1	\$6.88	\$8.60	\$11.00	100 20
3/4	FBA2	8.75	10.95	14.00	100 20
1	FBA3	11.56	14.45	18.50	50 10
1 1/4	FBA4	50.00	62.50	80.00	25 5



### Type FBB End Fittings

For 2, 3 and 4-Wire Service

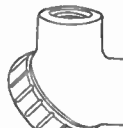
1/2	FBB1	\$16.25	\$20.30	\$26.00	50 10
3/4	FBB2	20.63	25.80	33.00	50 10
1	FBB3	35.63	44.55	57.00	30 5
1 1/4	FBB4	51.25	64.05	69.45	25 5



### Type LBY Elbows

With Screw Cover

1/2	LBY1	\$18.75	\$23.45	\$30.00	50 10
3/4	LBY2	21.88	27.35	35.00	50 5
1	LBY3	36.88	46.10	59.00	25 5
1 1/4	LBY4	71.25	89.05	114.00	10 5
1 1/2	LBY5	95.00	95.00	118.75	5 5

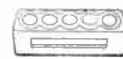
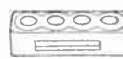


### Covers with Wire Holes for Type F Condulets

Composition Form 6

2 and 3-Wire

Size In.	Cat. No.	PER 100			Diam. Holes In.	Std. Car. Pkg. ton
		Std. Pkg.	Less Std.	Less Car. ton		
1/2, 3/4	2673	\$4.85	\$5.35	\$6.70	1 3/32	50 10
1	3673	9.40	10.35	12.95	1 1/2	50 5
1 1/4	4673	13.80	15.20	19.00	1 1/16	25 5
1 1/2	5673	24.60	27.10	27.10	1 3/16	10 1
2	6673	28.20	31.00	31.00	1	5 1
2 1/2, 3	8673	39.40	39.40	39.40	1 1/16	1 1
3 1/2, 4	9673	50.65	50.65	50.65	1 1/16	1 1
<b>4-Wire</b>						
1/2, 3/4	2674	\$4.85	\$5.35	\$6.70	5/16	50 10
1	3674	9.40	10.35	12.95	1 3/32	50 5
1 1/4	4674	13.80	15.20	19.00	1 7/32	25 5
1 1/2	5674	24.60	27.10	27.10	5/8	10 1
2	6674	28.20	31.00	31.00	1	5 1
<b>5-Wire</b>						
1/2, 3/4	2675	\$4.85	\$5.35	\$6.70	5/16	50 10
1	3675	9.40	10.35	12.95	1 3/32	50 5
1 1/4	4675	13.80	15.20	19.00	1 7/32	25 5
1 1/2	5675	24.60	27.10	27.10	5/8	10 1
2	6675	28.20	31.00	31.00	1 1/16	5 1



**J-K Series Condulets**

*Schedule CR*

Rigid conduit installations exposed to the weather require wiring devices that will prevent rain, ice, sleet, and snow from coming in contact with the current carrying parts. Condulets of the J-K Series meet all such requirements.

They take wiring devices or blank cover.

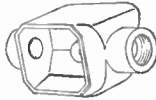
Cadmium-galvanized is the standard finish.

**Type J**



Cat. No.	Each	Size In.	Std. Pkg.
J1	\$ .60	1/2	100
J2	.75	3/4	50
J3	1.05	1	25

**Type JA**



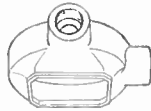
Cat. No.	Each	Size In.	Std. Pkg.
JA1	\$ .70	1/2	100
JA2	.85	3/4	50
JA3	1.15	1	25

**Type JB**



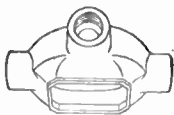
Cat. No.	Each	Size In.	Std. Pkg.
JB1	\$ .70	1/2	100
JB2	.85	3/4	50
JB3	1.15	1	25

**Type JL**



Cat. No.	Each	Size In.	Std. Pkg.
JL1	\$ .85	1/2	100
JL2	.95	3/4	50
JL3	1.05	1	25

**Type JT**



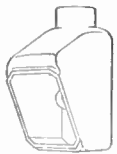
Cat. No.	Each	Size In.	Std. Pkg.
JT1	\$ .95	1/2	100
JT2	1.05	3/4	50
JT3	1.15	1	25

**Type JU**



Cat. No.	Each	Size In.	Std. Pkg.
JU1	\$ .70	1/2	100
JU2	.85	3/4	50
JU3	1.15	1	25

**Type KC**



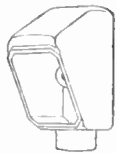
Cat. No.	Each	Size In.	Std. Pkg.
KC1	\$ .60	1/2	100
KC2	.75	3/4	50
KC3	1.05	1	25

**Type K**



Cat. No.	Each	Size In.	Std. Pkg.
K1	\$ .50	1/2	100
K2	.65	3/4	50
K3	.95	1	25

**Type KD**



Cat. No.	Each	Size In.	Std. Pkg.
KD1	\$ .60	1/2	100
KD2	.75	3/4	50
KD3	1.05	1	25

**J-K Series Threadless Condulets**

*Schedule CR*

Threadless and Threaded Condulets Take the Same Covers and Wiring Devices

Take wiring devices or blank cover.

Cadmium-galvanized is the standard finish.

**Type J**



Type	Size In.	Std. Pkg.
J	1/2	100
J	3/4	50
K	1/2	100

**Type K**



Thick Wall		Thin Wall	
Cat. No.	Each	Cat. No.	Each
J19	\$ .78	J14	\$ .78
J29	1.01	J24	1.01
K19	.59	K14	.59

**Condulet Wiring Devices and Blank Covers**

*Schedule CR*

For Condulets of the J-K Series

These wiring devices are weatherproof; therefore they can be installed either in or out of doors.

They are made in two parts, base and cap. The base is secured to the conduit by a single center screw. Direct connection to the circuit wires is made by two binding screws (entirely enclosed) on the base, eliminating soldered and taped joints. The cap of the lamp receptacle or rosette is secured to the base by two screws, which also complete the electrical connection. Lamp receptacles and rosettes have a common base. This construction permits changing from lamp receptacles to rosettes, or vice-versa, without disconnecting circuit wires.

The 2-pole attachment plug receptacles with double T slots take standard 15-ampere attachment plugs with parallel or tandem contact blades, or the parallel blade 15-ampere polarity plugs. The 2-pole attachment plug receptacles with IT slots take 15-ampere attachment plugs with tandem contact blades, or Hubbell 15-ampere polarity plug 6918.

The fastening screws are furnished with and so retained in the wiring devices that they cannot fall out.

Made of porcelain and furnished with gasket.

**Attachment Plug Receptacles**

**2-Pole**

10 Amperes, 250 Volts  
15 Amperes, 125 Volts



No. CC5 with Double T Slots

Cat. No.	Each	Std. Pkg.
CC5	\$ .50	100
CC35	.50	100

**3-Pole**

10 Amperes, 250 Volts  
15 Amperes, 125 Volts



3-Wire, 3-Pole

Cat. No.	Each	Std. Pkg.
CC13	\$ .70	100

2-Wire, 3-Pole  
Extra pole grounded.

Cat. No.	Each	Std. Pkg.
CC17	\$ .75	100

**Polarity Plug Receptacle**

**2-Pole**

20 Amperes, 250 Volts



Cat. No.	Each	Std. Pkg.
CC20	\$ .65	100

**Lamp Receptacle**

660 Watts, 600 Volts



No. CC227g with Shadeholder Groove

Cat. No.	Each	Std. Pkg.
CC227g	\$ .45	100
CC227	.40	100



No. CC227 without Shadeholder Groove

**Twist Lock Plug Receptacle**

**2-Pole**

20 Amperes, 250 Volts



Cat. No.	Each	Std. Pkg.
CC16	\$ .75	100

**Cord Rosette**

660 Watts, 250 Volts



Cat. No.	Each	Std. Pkg.
CC332	\$ .50	100

**Blank Cover Cast Feraloy**



Cat. No.	Each	Std. Pkg.
J100	\$ .30	100

If specified on the order, lamp receptacle with lamp grip will be furnished at an advance of 10 cents list.

Prices do not include attachment plugs for receptacles listed above.



## GS Series Condulets

Schedule CR

Take covers, fixtures, round base snap switches, vapor-proof fixtures, plug receptacle housings, or connection blocks. Furnished with fastening strap for wiring devices.

Forms 5, 10 and 20 indicate sizes of condulets which take covers and wiring devices correspondingly classified.

Cadmium-galvanized is the standard finish.

### Type GS



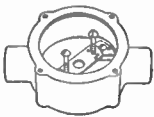
Cat. No.	Each	Size Inches	Form	Std. Pkg.
GS15	\$ .90	1/2	5	25
GS25	1.05	3/4	5	25
GS35	1.25	1	5	10
GS110	1.00	1/2	10	25
GS210	1.15	3/4	10	25
GS310	1.35	1	10	10
GS120	1.50	1/2	20	25
GS220	1.65	3/4	20	25
GS320	1.85	1	20	10

### Type GSA



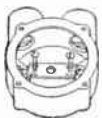
GSA15	\$ .90	1/2	5	25
GSA25	1.05	3/4	5	25
GSA35	1.25	1	5	10
GSA110	1.00	1/2	10	25
GSA210	1.15	3/4	10	25
GSA310	1.35	1	10	10
GSA120	1.50	1/2	20	25
GSA220	1.65	3/4	20	25
GSA320	1.85	1	20	10

### Type GSC



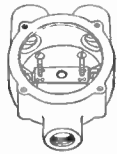
GSC15	\$1.00	1/2	5	25
GSC25	1.15	3/4	5	25
GSC35	1.35	1	5	10
GSC110	1.10	1/2	10	25
GSC210	1.25	3/4	10	25
GSC310	1.45	1	10	10
GSC120	1.60	1/2	20	25
GSC220	1.75	3/4	20	25
GSC320	1.95	1	20	10

### Type GSS



GSS15	\$1.00	1/2	5	25
GSS25	1.15	3/4	5	25
GSS35	1.35	1	5	10
GSS110	1.10	1/2	10	25
GSS210	1.25	3/4	10	25
GSS310	1.45	1	10	10
GSS120	1.60	1/2	20	25
GSS220	1.75	3/4	20	25
GSS320	1.95	1	20	10

### Type GSSC



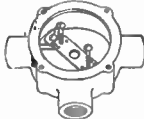
Cat. No.	Each	Size In.	Form	Std. Pkg.
GSSC15	\$1.20	1/2	5	25
GSSC25	1.35	3/4	5	25
GSSC35	1.55	1	5	10
GSSC110	1.30	1/2	10	25
GSSC210	1.50	3/4	10	25
GSSC310	1.70	1	10	10
GSSC120	1.80	1/2	20	25
GSSC220	2.00	3/4	20	25
GSSC320	2.30	1	20	10

### Type GSL



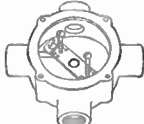
GSL15	\$1.00	1/2	5	25
GSL25	1.15	3/4	5	25
GSL35	1.35	1	5	10
GSL110	1.10	1/2	10	25
GSL210	1.25	3/4	10	25
GSL310	1.45	1	10	10
GSL120	1.60	1/2	20	25
GSL220	1.75	3/4	20	25
GSL320	1.95	1	20	10

### Type GST



GST15	\$1.20	1/2	5	25
GST25	1.35	3/4	5	25
GST35	1.55	1	5	10
GST110	1.30	1/2	10	25
GST210	1.50	3/4	10	25
GST310	1.70	1	10	10
GST120	1.80	1/2	20	25
GST220	2.00	3/4	20	25
GST320	2.30	1	20	10

### Type GSX



GSX15	\$1.35	1/2	5	25
GSX25	1.50	3/4	5	25
GSX35	1.80	1	5	10
GSX110	1.45	1/2	10	25
GSX210	1.70	3/4	10	25
GSX310	2.10	1	10	10
GSX120	1.95	1/2	20	25
GSX220	2.20	3/4	20	25
GSX320	2.70	1	20	10

## GS Series Condulets

Schedule CR

### Two and Three-Gang

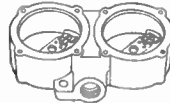
With Lugs

Take covers, fixtures, round base snap switches, vapor-proof fixtures, plug receptacle housings, or connection blocks furnished with fastening straps for wiring devices.

Cadmium-galvanized is the standard finish.

### Type GSB

Two-Gang



Cat. No.	Each	Size In.	Form	Std. Pkg.
GSB1529	\$2.10	1/2	5	25
GSB2529	2.40	3/4	5	25
GSB3529	2.80	1	5	10
GSB1129	2.30	1/2	10	25
GSB2129	2.60	3/4	10	25
GSB3129	3.00	1	10	10
GSB1229	3.30	1/2	20	25
GSB2229	3.60	3/4	20	25
GSB3229	4.00	1	20	10

### Type GSD

Two-Gang



GSD1529	\$2.30	1/2	5	25
GSD2529	2.60	3/4	5	25
GSD3529	3.00	1	5	10
GSD1129	2.50	1/2	10	25
GSD2129	2.80	3/4	10	25
GSD3129	3.20	1	10	10
GSD1229	3.50	1/2	20	25
GSD2229	3.80	3/4	20	25
GSD3229	4.20	1	20	10

### Type GSE

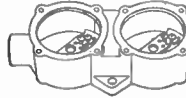
Two-Gang



GSE1529	\$2.10	1/2	5	25
GSE2529	2.40	3/4	5	25
GSE3529	2.80	1	5	10
GSE1129	2.30	1/2	10	25
GSE2129	2.60	3/4	10	25
GSE3129	3.00	1	10	10
GSE1229	3.30	1/2	20	25
GSE2229	3.60	3/4	20	25
GSE3229	4.00	1	20	10

### Type GSC

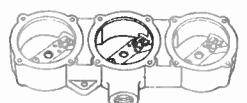
Two-Gang



GSC1529	\$2.30	1/2	5	25
GSC2529	2.60	3/4	5	25
GSC3529	3.00	1	5	10
GSC1129	2.50	1/2	10	25
GSC2129	2.80	3/4	10	25
GSC3129	3.20	1	10	10
GSC1229	3.50	1/2	20	25
GSC2229	3.80	3/4	20	25
GSC3229	4.20	1	20	10

### Type GSB

Three-Gang



Cat. No.	Each	Size In.	Form	Std. Pkg.
GSB1539	\$3.15	1/2	5	25
GSB2539	3.60	3/4	5	25
GSB3539	4.20	1	5	10
GSB1139	3.45	1/2	10	25
GSB2139	3.90	3/4	10	25
GSB3139	4.50	1	10	10
GSB1239	4.95	1/2	20	25
GSB2239	5.40	3/4	20	25
GSB3239	6.00	1	20	10

### Type GSD

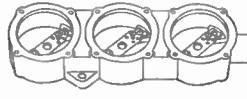
Three-Gang



GSD1539	\$3.45	1/2	5	25
GSD2539	3.90	3/4	5	25
GSD3539	4.50	1	5	10
GSD1139	3.75	1/2	10	25
GSD2139	4.20	3/4	10	25
GSD3139	4.80	1	10	10
GSD1239	5.25	1/2	20	25
GSD2239	5.70	3/4	20	25
GSD3239	6.30	1	20	10

### Type GSE

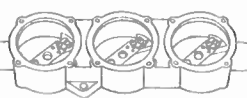
Three-Gang



GSE1539	\$3.15	1/2	5	25
GSE2539	3.60	3/4	5	25
GSE3539	4.20	1	5	10
GSE1139	3.45	1/2	10	25
GSE2139	3.90	3/4	10	25
GSE3139	4.50	1	10	10
GSE1239	4.95	1/2	20	25
GSE2239	5.40	3/4	20	25
GSE3239	6.00	1	20	10

### Type GSC

Three-Gang



GSC1539	\$3.45	1/2	5	25
GSC2539	3.90	3/4	5	25
GSC3539	4.50	1	5	10
GSC1139	3.75	1/2	10	25
GSC2139	4.20	3/4	10	25
GSC3139	4.80	1	10	10
GSC1239	5.25	1/2	20	25
GSC2239	5.70	3/4	20	25
GSC3239	6.30	1	20	10

**Condulet Covers**

*Schedule CR*

**For Condulets of the GS Series**

Cadmium-galvanized is the standard finish.

**Vaporproof Switch Covers**

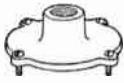
Furnished with gasket.



Cat. No.	Each	Size	Std. Pkg.
GS58	\$1.30	Form 5	25
GS108	1.40	Form 10	25
GS208	2.00	Form 20	25

**Vaporproof Hub Covers**

Furnished with gasket.



Cat. No.		Each	Size	Std. Pkg.
3/4-In. Hub	1/2-In. Hub			
GS53	GS54	\$.60	Form 5	25
GS13	GS14	.70	Form 10	25
GS23	GS24	1.00	Form 20	25

**Vaporproof Blank Covers**

Furnished with gasket.



Cat. No.	Each	Size	Std. Pkg.
GS50	\$.50	Form 5	25
GS100	.60	Form 10	25
GS200	.90	Form 20	25

**Plug Receptacle Covers**

For Bryant Marine Plug Receptacles



With Spring Door

Plain

Cat. No.	Each	Size	Style	Std. Pkg.
GS124	\$1.10	Form 10	With Spring Door	25
GS123	.50	Form 10	Plain	25

**Lamp Receptacle Cover**

Takes composition receptacle GS126 or GS1621.

Furnished with gasket for receptacle.



Cat. No.	Each	Size	Std. Pkg.
GS109	\$.60	Form 10	25

**Lamp Receptacles**

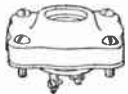
*Schedule CR*

**For Condulets of the GS Series**

**Keyless Receptacles (Composition)**

660 Watts, 600 Volts

For Form 5 Condulets. Consists of receptacle and gaskets.



Cat. No.	Each	Style	Std. Pkg.
GS59	\$.50	Without Lamp Grip	25
GS569	.60	With Lamp Grip	25

**Key Receptacle (Armored)**

250 Watts, 250 Volts

For Form 5 Condulets.

Consists of housing, receptacle C127, mounting strap, and insulating ring CF330.



GS549	\$2.00	With Lamp Grip	25
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**Keyless Receptacles (Composition)**

660 Watts, 250 Volts

For Form 10 covers or fixtures.

Consists of receptacle only.



GS126	\$.75	Without Lamp Grip	25
GS1621	.85	With Lamp Grip	25

Forms 5, 10 and 20 indicate sizes of Condulets which take covers and wiring devices correspondingly classified.

**GS Midget Guard Fixtures**

*Schedule CR*

**For Form 10 Condulets of the GS Series**

The fixture complete consists of holder No. GS111, guard, receptacle with lamp grip No. GS1621, and gaskets.



Complete

Cadmium-galvanized is the standard finish.



Guard Only

Standard package quantity, 25.

Length Guard In.	Size Lamps	Fixture Complete		Guard Only	
		Cat. No.	Each	Cat. No.	Each
3 1/8	{ 15-Watt (A17) 25-Watt (A19) }	GS161	\$2.80	GS93	\$1.25
3 3/4	40-Watt (A21)	GS1629	3.05	GH3	1.50
4 5/8	{ 50-Watt (A21), (S19), 60-W. (A21) }	GS1630	3.35	GH4	1.80
5 1/4	100-Watt (A23)	GS1631	3.40	GH5	1.85

**Holder Only**

Standard package quantity, 25.  
Cat. No. GS111, Holder Only.....each \$ .80

**Connection Blocks**

*Schedule CR*

**For Condulets of the GS Series**



2-Wire Composition



5-Wire Composition



2-Wire Porcelain

**Composition**

Cat. No.	Each	Style	RATING		Form	Std. Pkg.
			Amps.	Volts		
CF209	\$.85	2-Wire	30	250	20	25
CF210	.65	5-Wire	20	125	10, 20	25

**Porcelain**

GS32	\$.75	2-Wire	20	250	20	25
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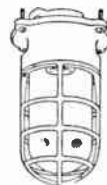
**GS Vaporproof Fixtures**

*Schedule CR*

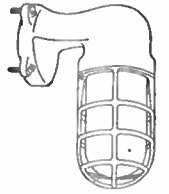
**For Form 20 Condulets of the GS Series**

Form 20 Condulets of the GS series with vaporproof fixtures meet conditions where vapor, gas, or moisture exist, as in marine installations or cold storage plants.

Bodies are of liberal dimensions, providing ample space for making taps, for connections to fixtures, and for the passage



Pendant



Bracket

of additional circuits. They are provided with blind screw holes for fastening covers or fixtures. A flat, unusually wide surface inside of the screw hole circle provides a good seat for the fixture gasket, insuring a gas and watertight joint.

Fixtures are furnished with receptacle, gaskets, and with or without globe and guard.

Cadmium-galvanized is the standard finish.

**Form 75**

Take 50-watt (PS20), 60-watt (A21), 75-watt (PS22), or 100-watt (A23) lamps.

Style	Std. Pkg.	Complete With Globe V75 and Guard V911		Complete except Globe and Guard	
		Cat. No.	Each	Cat. No.	Each
Pendant	25	GS675	\$6.10	GS6	\$3.50
Bracket	25	GS775	6.10	GS7	3.50

**Form 200**

Take 100 or 150-watt (PS25), or 200-watt (PS30) lamps.

Style	Std. Pkg.	Complete With Globe V200 and Guard V912		Complete except Globe and Guard	
		Cat. No.	Each	Cat. No.	Each
Pendant	25	GS8200	\$6.80	GS8	\$3.75
Bracket	25	GS9200	6.80	GS9	3.75

## Type BRG Plug Receptacle Housings

Schedule CR

### For Condulets of the GS Series

\*30 Amperes, 250 Volts A.C.

These housings take Type BP plugs. The 2-pole housings are furnished with 30-ampere, 250-volt receptacles BR1302 or BR302. The 3-pole housings are furnished with 30-ampere, 250-volt receptacles BR1303 or BR303.

Cadmium-galvanized is the standard finish for all plugs and receptacles. This insures a perfect ground connection between all metal parts in the grounding or safety circuit.

The threaded housings are furnished with round gaskets cemented in grooves. The gaskets are inside the screw circle, and the holes in the Condulets for the fastening screws are blind tapped; therefore when a watertight plug or the brass cap is used, the Condulet is absolutely vapor, gas, and dustproof.

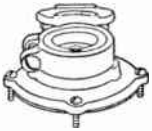
The plugs and receptacles are polarized. The receptacle housing is provided with a clip which makes contact with the shell of the plug, effectually grounding the plug through the conduit system.

The plug and receptacle contacts are self-aligning; the receptacle contacts are completely enclosed in a body of molded insulating material. The prongs of the plug are protected by a steel sleeve.

**GROUNDING.**—On the plugs used with these receptacles, provision is made for a grounding wire in the cable to connect the frame of the portable device to the shell of the plug. The grounding or safety circuit is completed through the shell of the plug, the detent spring, the receptacle housing, and the conduit system. The detent spring in the receptacle has three branches, two of which make contact before and break contact after the main circuit contacts. This method of grounding is N. E. C. standard.

Standard package quantity is 25.

### With Spring Door



Form 5

Cat. No.	Each	No. of Poles
BRG56302	\$4.10	2

Form 10

BRG16302	\$4.20	2
BRG16303	5.05	3

Form 20

BRG26302	\$4.70	2
BRG26303	5.55	3

### Threaded



Furnished with gaskets.

Form 5

BRG57302	\$2.70	2
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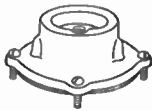
Form 10

BRG17302	\$2.80	2
BRG17303	3.50	3

Form 20

BRG27302	\$3.30	2
BRG27303	4.00	3

### Plain



Form 5

Cat. No.	Each	No. of Poles
BRG5302	\$2.50	2

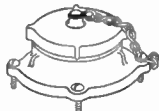
Form 10

BRG1302	\$2.60	2
BRG1303	3.25	3

Form 20

BRG2302	\$3.10	2
BRG2303	3.75	3

### With Aluminum Cap



Furnished with gaskets.

Form 5

BRG58302	\$3.65	2
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Form 10

BRG18302	\$3.75	2
BRG18303	4.85	3

Form 20

BRG28302	\$4.25	2
BRG28303	5.35	3

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

## S Series Condulets

Schedule CR

Take covers and wiring devices. Furnished with fastening strap for wiring devices.

Cadmium-galvanized is the standard finish.

### Type S



Cat. No.	Each	Size In.	Std. Pkg.
S1	\$.70	1/2	50
S2	.75	3/4	50
S3	.90	1	25

### Type SA



Cat. No.	Each	Size In.	Std. Pkg.
SA1	\$.70	1/2	50
SA2	.75	3/4	50
SA3	.90	1	25

### Type SC



SC1	\$.80	1/2	50
SC2	.85	3/4	50
SC3	1.05	1	25

### Type SL



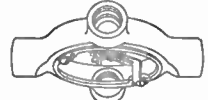
SL1	\$.80	1/2	50
SL2	.85	3/4	50
SL3	1.05	1	25

### Type ST



ST1	\$.90	1/2	50
ST2	1.00	3/4	50
ST3	1.20	1	25

### Type SX



SX1	\$1.00	1/2	50
SX2	1.10	3/4	50
SX3	1.35	1	25

## Condulet Covers

Schedule CR

### For Condulets of the S Series

Cadmium-galvanized is the standard finish.

### Covers for Wiring Devices

Cat. No.	Each	Material	Std. Pkg.
00	\$.12	Sheet Steel	50
00g	.35	Cast Feraloy	50
00k	.12	Sheet Steel	50
00kg	.35	Cast Feraloy	50

### Blank Metal Covers

00b	\$.12	Sheet Steel	50
00bg	.35	Cast Feraloy	50

## Condulet Wiring Devices

Schedule CR

### For Condulets of the S Series

Types ARB and GS Vaporproof Fixtures

Type GH Midget Guard Fixtures

Type SRH Holders

These devices eliminate soldered and taped joints. They have enclosed contacts and are made in two parts, base and cap. They have a common base, so one style of cap can be substituted for another without disconnecting circuit wires.

### Lamp Receptacles

660 Watts, 600 Volts

Furnished with gasket.

With Shadeholder Groove



With Groove

Cat. No.	Each	Std. Pkg.
C337g	\$4.45	100
C337	\$4.40	100

Without Shadeholder Groove



Without Groove

### Cord Rosettes

660 Watts, 250 Volts

Furnished with gasket.



Cat. No.	Each	Std. Pkg.
C442	\$3.35	100

If specified on order, lamp receptacle with lamp grip will be furnished at 10 cents advance in list price.



**SK Series Condulets**

*Schedule CR*

**For Concealed Installations in Concrete**

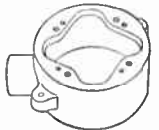
Take ARB vaporproof fixtures, blank covers, or covers with hubs, and are drilled and tapped to take 3/4-inch outlet box round base wiring devices with 2 3/4-inch screw centers.

The blank cover has countersunk fastening screw holes and is furnished with flat head screws. This makes the cover suitable for use in floors or sidewalks.

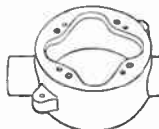
A gasket is made for use with blank covers, so that when used with condulets of the SK Series, an excellent water-tight junction box is provided.

Elxits, Ben-ox fixtures and other wiring devices that have 4 fastening screw holes instead of 2 on 2 3/4-inch centers are given especially rigid support.

Cadmium-galvanized is the standard finish.



Type SK					
Size In.	Std. Pkg.	2-Inch Depth		3-Inch Depth	
		Cat. No.	Each	Cat. No.	Each
1/2	50	SK12	\$1.00	SK13	\$1.15
3/4	25	SK22	1.10	SK23	1.25
1	10	SK32	1.20	SK33	1.35



Type SKC					
Size In.	Std. Pkg.	2-Inch Depth		3-Inch Depth	
		Cat. No.	Each	Cat. No.	Each
1/2	50	SKC12	\$1.10	SKC13	\$1.25
3/4	25	SKC22	1.20	SKC23	1.35
1	10	SKC32	1.30	SKC33	1.45



Type SKL					
Size In.	Std. Pkg.	2-Inch Depth		3-Inch Depth	
		Cat. No.	Each	Cat. No.	Each
1/2	50	SKL12	\$1.10	SKL13	\$1.25
3/4	25	SKL22	1.20	SKL23	1.35
1	10	SKL32	1.30	SKL33	1.45



Type SKT					
Size In.	Std. Pkg.	2-Inch Depth		3-Inch Depth	
		Cat. No.	Each	Cat. No.	Each
1/2	50	SKT12	\$1.20	SKT13	\$1.35
3/4	25	SKT22	1.30	SKT23	1.45
1	10	SKT32	1.40	SKT33	1.55



Type SKX					
Size In.	Std. Pkg.	2-Inch Depth		3-Inch Depth	
		Cat. No.	Each	Cat. No.	Each
1/2	50	SKX12	\$1.30	SKX13	\$1.45
3/4	25	SKX22	1.40	SKX23	1.55
1	10	SKX32	1.50	SKX33	1.65

**ARB Vaporproof Fixtures**

For Condulets of the SK Series, or 3/4 or 4-Inch Outlet Boxes

Furnished with globe, guard, receptacle and gaskets. Regularly furnished with clear globes, can be furnished with colored globes at an additional charge.

**Form 75**

Furnished with Globe V75 and Guard V97, and takes 50-watt (PS20), 60-watt (A21), 75-watt (PS22), or 100-watt (A23) lamps.



**Form 200**

Furnished with Globe V200 and Guard VH99, and takes 100 or 150-watt (PS25), or 200-watt (PS30) lamps.

**Form 75**

**Form 200**

Cat. No.	Each	Std. Pkg.	Cat. No.	Each	Std. Pkg.
ARB43	\$4.10	25	ARB41	\$4.75	25

For prices without globe and guard, deduct \$2.60 from price of Form 75, and \$3.05 from price of Form 200.

**Covers**

For Condulets of the SK Series

**Blank Style**



Cat. No.	Each	Size, In.	Std. Pkg.
SK809	\$.30	..	50

**Hub Style**



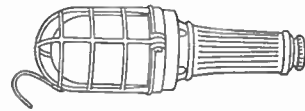
Cat. No.	Each	Size, In.	Std. Pkg.
SK83	\$.65	3/8	50
SK84	.65	1/2	50
SK86	.75	3/4	50

**Type VS Vaporproof Portable Hand Lamps**

*Schedule CR*

**Clamp Guard**

With Terminal for Ground Wire



Type VS Portable Hand Lamps are suited for use in garages, refineries, bakeries, flour mills, grain elevators, marine work or wherever inflammable vapor, dust or moisture is present.

The guard and globe holder are made of cast aluminum; the handle of molded rubber; and the gland nut of molded composition.

The rubber handle has sufficient flexibility to prevent breakage when subjected to rough usage, yet is sufficiently rigid to function as a satisfactory grip. Temperatures are not excessive.

Furnished with globe, guard, receptacle, gasket and vaporproof gland in handle.

Standard package quantity is 20.

**Complete with Globe V15 and Guard VS95**

Takes 60-watt (A21) lamps or any lamp not exceeding 2 3/4 x 5 3/8 inches.

Cat. No.	Each	Diameter Cable, In.
VS23	\$6.15	.250 to .375
VS24	6.15	.375 to .500
VS25	6.15	.500 to .625

**Complete with Globe V75 and Guard VS97**

Takes 100-watt (A25) lamps, or any lamp not exceeding 2 7/8 x 6 1/16 inches.

Cat. No.	Each	Diameter Cable, In.
VS33	\$6.15	.250 to .375
VS34	6.15	.375 to .500
VS35	6.15	.500 to .625

**Guards**

For Type VS Portable Hand Lamp



Cat. No.	Each	For Globe Inches
VS95	\$2.00	5 1/4
VS97	2.00	6 3/4

**Globes**

For Type VS Portable Hand Lamp



Cat. No.	Each	Length Globe Inches
V15	\$ .80	5 1/4
V75	.80	6 3/4

**Safety Hand Lamps**

*Schedule CR*

**With Grounding Terminal**

Take 15 to 60-watt (A17 A19, A21, P19, PS20, S17, S19, or S21) lamps.

Nos. LPG24 and LPH24 Safety Hand Lamps are constructed to withstand the severe service encountered in railroad shops, garages, industrial plants, storehouses, etc.

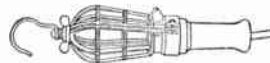
A terminal is provided for a safety circuit wire in the connecting cord for grounding the guard and other metal parts not connected with the electrical circuit.

Handle is well seasoned maple, black enameled. A metal bracket on which ground terminal is mounted also provides a cord strain relief and support for lamp socket as a unit.

The guard and half shade are made of aluminum alloy. A compression washer prevents a twisted lamp cord from turning the lamp out of a set position.

Standard package quantity is 20.

**Type LPG, with Guard**



Cat. No.	Each
LPG24	\$3.00

**Type LPH, with Guard and Half Shade**



Cat. No.	Each
LPH24	\$3.15

## Condulet Vaporproof Industrial Fixtures

Schedule CR  
Clamp Guard

Regularly furnished with clear globes. If specified, colored globes can be substituted at an extra charge.

A reflector can be used with any of these condulets by omitting the guard regularly furnished and substituting the proper combination of reflector and reflector holder.

A reflector and guard can be used with any of these condulets by omitting the guard regularly furnished and substituting the proper combination of guard with reflector holder and reflector.

Cadmium-galvanized is the standard finish.  
Standard package quantity is 10.

**Form 75**  
Furnished with Globe V75 and Guard V97, and takes 50-watt (PS20), 60-watt (A21), 75-watt (PS22), or 100-watt (A23) lamps.

**Form 200**  
Furnished with Globe V200 and Guard VH99, and takes 100 or 150-watt (PS25), or 200-watt (PS30) lamps.

### Types V and VH



Form 75

Cat. No.	Each	Size In.
V189	\$4.50	1/2
V289	4.55	3/4
V389	4.60	1

Form 200

Cat. No.	Each	Size In.
VH189	\$5.40	1/2
VH289	5.45	3/4
VH389	5.50	1

### Types VC and VHC



Form 75

Cat. No.	Each	Size In.
VC1189	\$4.60	1/2
VC2289	4.70	3/4
VC3389	4.80	1

Form 200

Cat. No.	Each	Size In.
VHC1189	\$5.50	1/2
VHC2289	5.60	3/4
VHC3389	5.65	1

### Types VT and VHT



Form 75

Cat. No.	Each	Size In.
VT11189	\$4.75	1/2
VT22289	4.85	3/4
VT33389	5.05	1

Form 200

Cat. No.	Each	Size In.
VHT11189	\$5.60	1/2
VHT22289	5.75	3/4
VHT33389	5.85	1

### Types VA and VHA



Form 75

Cat. No.	Each	Size In.
VA189	\$4.50	1/2
VA289	4.55	3/4
VA389	4.60	1

Form 200

Cat. No.	Each	Size In.
VHA189	\$5.40	1/2
VHA289	5.45	3/4
VHA389	5.50	1

### Types VL and VHL



Form 75

Cat. No.	Each	Size In.
VL1189	\$4.60	1/2
VL2289	4.70	3/4
VL3389	4.80	1

Form 200

Cat. No.	Each	Size In.
VHL1189	\$5.50	1/2
VHL2289	5.60	3/4
VHL3389	5.65	1

### Types VX and VHX



Form 75

Cat. No.	Each	Size In.
VX111189	\$4.85	1/2
VX222289	5.05	3/4
VX333389	5.20	1

Form 200

Cat. No.	Each	Size In.
VHX111189	\$5.70	1/2
VHX222289	5.90	3/4
VHX333389	6.05	1

## Condulet Vaporproof Industrial Fixtures

Schedule CR  
Clamp Guard

Regularly furnished with clear globes.

Colored globes can be substituted at an extra charge. A reflector can be used by omitting the guard regularly furnished and substituting the proper combination of reflector and reflector holder. A reflector and guard can be used by omitting guard regularly furnished and substituting the proper combination of guard with reflector holder and reflector.

Cadmium-galvanized is the standard finish.  
Standard package quantity is 10.

**Form 75**  
Furnished with Globe V75 and Guard V97, and takes 50-watt (PS20), 60-watt (A21), 75-watt (PS22), or 100-watt (A23) lamps.

**Form 200**  
Furnished with Globe V200 and Guard VH99, and takes 100 or 150-watt (PS25), or 200-watt (PS30) lamps.

### Types VDA and VHDA



Form 75

Cat. No.	Each	Size In.
VDA189	\$4.50	1/2
VDA289	4.55	3/4
VDA389	4.60	1

Form 200

Cat. No.	Each	Size In.
VHDA189	\$5.40	1/2
VHDA289	5.45	3/4
VHDA389	5.50	1

### Types VF and VHF



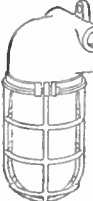
Form 75

Cat. No.	Each	Size In.
VF189	\$4.90	1/2
VF289	5.00	3/4
VF389	5.10	1

Form 200

Cat. No.	Each	Size In.
VHF189	\$5.75	1/2
VHF289	5.85	3/4
VHF389	5.95	1

### Types VJ and VHJ



Form 75

Cat. No.	Each	Size In.
VJ1189	\$5.15	1/2
VJ2289	5.25	3/4
VJ3389	5.35	1

Form 200

Cat. No.	Each	Size In.
VHJ1189	\$5.90	1/2
VHJ2289	6.00	3/4
VHJ3389	6.10	1

### Types VE and VHE



Form 75

Cat. No.	Each	Size In.
VE189	\$4.75	1/2
VE289	4.85	3/4
VE389	4.95	1

Form 200

Cat. No.	Each	Size In.
VHE189	\$5.50	1/2
VHE289	5.60	3/4
VHE389	5.70	1

### Types VD and VHD



Form 75

Cat. No.	Each	Size In.
VD1189	\$5.15	1/2
VD2289	5.25	3/4
VD3389	5.35	1

Form 200

Cat. No.	Each	Size In.
VHD1189	\$5.90	1/2
VHD2289	6.00	3/4
VHD3389	6.10	1

### Types VG and VHG



Form 75

Cat. No.	Each	Size In.
VG189	\$4.75	1/2
VG289	4.85	3/4
VG389	4.95	1

Form 200

Cat. No.	Each	Size In.
VHG189	\$5.50	1/2
.....	.....	.....
.....	.....	.....

Lamp receptacle with lamp grip can be furnished at 10 cents extra; pigtail receptacle can be furnished at 35 cents extra for Form 75, and 45 cents extra for Form 200.

Above condulets without globe and guard, deduct \$2.60 from prices of Form 75, and \$3.05 from prices of Form 200.

Lamp receptacle with lamp grip can be furnished at 10 cents extra; pigtail receptacle can be furnished at 35 cents extra for Form 75, and 45 cents extra for Form 200. Above condulets without globe and guard, deduct \$2.60 from prices of Form 75, and \$3.05 from prices of Form 200.

**Condulet Vaporproof Industrial Fixtures**

*Schedule CR*

**Screw Guard**

Regularly furnished with clear globes. Colored globes will be substituted at the difference in list prices.

Cadmium-galvanized is the standard finish.

Forms 75 and 200 indicate sizes of condulets.

High temperature wire should be used with lamps larger than 75 watts in Form 75 or 100 watts in Form 200.

Standard package, 10.

**Form 75**

Furnished with or without globe V75 and guard V911, and takes 50-watt (PS20), 60-watt (A21), 75-watt (PS22), or 100-watt (A23) lamps.

**Form 200**

Furnished with or without globe V200 and guard V912, and takes 100 or 150-watt (PS25), or 200-watt (PS30) lamps.

**Type V**



**Form 75**

Cat. No.	Each	Size In.
V1759	\$4.50	1/2
V2759	4.55	3/4
V3759	4.60	1

**Form 200**

V12009	\$5.40	1/2
V22009	5.45	3/4
V32009	5.50	1

**Type VL**



**Form 75**

Cat. No.	Each	Size In.
VL1759	\$4.60	1/2
VL2759	4.70	3/4
VL3759	4.80	1

**Form 200**

VL12009	\$5.50	1/2
VL22009	5.60	3/4
VL32009	5.65	1

**Type VA**



**Form 75**

VA1759	\$4.50	1/2
VA2759	4.55	3/4
VA3759	4.60	1

**Form 200**

VA12009	\$5.40	1/2
VA22009	5.45	3/4
VA32009	5.50	1

**Type VT**



**Form 75**

VT1759	\$4.75	1/2
VT2759	4.85	3/4
VT3759	5.05	1

**Form 200**

VT12009	\$5.60	1/2
VT22009	5.75	3/4
VT32009	5.85	1

**Type VC**



**Form 75**

VC1759	\$4.60	1/2
VC2759	4.70	3/4
VC3759	4.80	1

**Form 200**

VC12009	\$5.50	1/2
VC22009	5.60	3/4
VC32009	5.65	1

**Type VX**



**Form 75**

VX1759	\$4.85	1/2
VX2759	5.05	3/4
VX3759	5.20	1

**Form 200**

VX12009	\$5.70	1/2
VX22009	5.90	3/4
VX32009	6.05	1

Lamp receptacle with lamp grip can be furnished at 10 cents extra; pigtail receptacle can be furnished at 35 cents extra for Form 75, and 45 cents extra for Form 200.

Equipped with key socket, operated by external handle at an advance in list of \$1.00.

Above condulets without globe and guard, deduct \$2.60 from prices of Form 75, and \$3.05 from prices of Form 200.

**Condulet Vaporproof Industrial Fixtures**

*Schedule CR*

**Screw Guard**

Regularly furnished with clear globes. Colored globes will be substituted at the difference in list prices.

Cadmium-galvanized is the standard finish.

Forms 75 and 200 indicate sizes of condulets.

High temperature wire should be used with lamps larger than 75 watts in Form 75 or 100 watts in Form 200.

Standard package, 10.

**Form 75**

Furnished with or without globe V75 and guard V911, and takes 50-watt (PS20), 60-watt (A21), 75-watt (PS22), or 100-watt (A23) lamps.

**Form 200**

Furnished with or without globe V200 and guard V912, and takes 100 or 150-watt (PS25), or 200-watt (PS30) lamps.

**Type VDA**



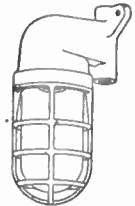
**Form 75**

Cat. No.	Each	Size In.
VDA1759	\$4.50	1/2
VDA2759	4.55	3/4
VDA3759	4.60	1

**Form 200**

VDA12009	\$5.40	1/2
VDA22009	5.45	3/4
VDA32009	5.50	1

**Type VD**



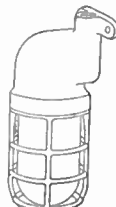
**Form 75**

Cat. No.	Each	Size In.
VD1759	\$5.15	1/2
VD2759	5.25	3/4
VD3759	5.35	1

**Form 200**

VD12009	\$5.90	1/2
VD22009	6.00	3/4
VD32009	6.10	1

**Type VE**



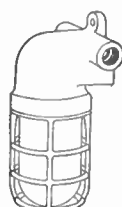
**Form 75**

VE1759	\$4.75	1/2
VE2759	4.85	3/4

**Form 200**

VE12009	\$5.50	1/2
VE22009	5.60	3/4

**Type VJ**



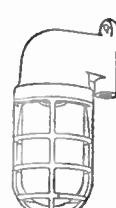
**Form 75**

VJ1759	\$5.15	1/2
VJ2759	5.25	3/4
VJ3759	5.35	1

**Form 200**

VJ12009	\$5.90	1/2
VJ22009	6.00	3/4
VJ32009	6.10	1

**Type VF**



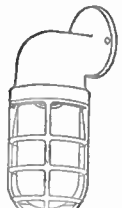
**Form 75**

VF1759	\$4.90	1/2
VF2759	5.00	3/4

**Form 200**

VF12009	\$5.75	1/2
VF22009	5.85	3/4

**Type VG**



**Form 75**

VG1759	\$4.75	1/2
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**Form 200**

VG12009	\$5.50	1/2
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Lamp receptacle with lamp grip can be furnished at 10 cents extra; pigtail receptacle can be furnished at 35 cents extra for Form 75, and 45 cents extra for Form 200.

Equipped with key socket, operated by external handle at an advance in list of \$1.00.

Above condulets without globe and guard, deduct \$2.60 from prices of Form 75, and \$3.05 from prices of Form 200.



## Accessories and Parts

Schedule CR

For Condulets of the V Series and Other Vaporproof Fixtures

### Globes for Screw and Clamp Guard

Color Globe	Std. Pkg.	Form 75		Form 200	
		Cat. No.	Each	Cat. No.	Each
Clear	20	V75	\$ .80	V200	\$ .80
Opal	20	VN71	1.10	VO201	1.70
Green	20	VN72	1.70	VO202	2.35
Blue	20	VN73	1.70	VO203	2.35
Orange	20	VN74	1.70	VO204	2.35
Ruby	20	VN75	1.70	VO205	2.35

### Pyrex Globes for Screw and Clamp Guard

Heat resisting.		V63		V93	
Clear	20		\$1.25		\$2.00

### Guards

Made of cast aluminum.

Size	Std. Pkg.	Clamp Guard		Screw Guard	
		Cat. No.	Each	Cat. No.	Each
Form 75	20	V97	\$1.80	V911	\$1.80
Form 200	20	VH99	2.25	V912	2.25

### Guards with Reflector Holders

Made of cast aluminum.

Form 75	20	V913	\$1.80	.....	.....
Form 200	20	VH914	2.25	.....	.....

### Reflector Holders

Made of cast aluminum. For clamping reflector to conduit when a guard is not used.

Form 75	20	V625	\$ .50	V901	\$ .75
Form 200	20	VH626	.65	V902	.90

### RLM Dome Reflectors

Cat. No.	Each	Dimen. A	Form 75		Std. Pkg.	
			Size Lamps			
SH26	\$2.75	12	50-W. (PS20)	10	10	
						60-W. (A21)
						75-W. (PS22)
SH27	3.00	12	100-W. (A23)	10	10	
			100 or 150-W. (PS25)			
SH28	\$3.25	14	200-W. (PS30)	10	10	
SH29	3.75	16	200-W. (PS30)	10	10	

### Shallow Bowl Reflectors

Cat. No.	Each	Dimen. A	Form 75		Std. Pkg.	
			Size Lamps			
SH56	\$2.25	12	50-W. (PS20)	10	10	
						60-W. (A21)
						75-W. (PS22)
SH57	2.50	12	100-W. (A23)	10	10	
			100 or 150-W. (PS25)			
SH58	\$2.75	14	200-W. (PS30)	10	10	
SH59	3.25	16	200-W. (PS30)	10	10	

### Deep Bowl Reflectors

Cat. No.	Each	Dimen. A	Form 75		Std. Pkg.	
			Size Lamps			
SH46	\$2.75	12	50-W. (PS20)	10	10	
						60-W. (A21)
						75-W. (PS22)
SH47	3.00	13	100-W. (A23)	10	10	
			100 or 150-W. (PS25)			
SH48	\$3.25	14	200-W. (PS30)	10	10	
SH49	3.75	15	200-W. (PS30)	10	10	

### 30° Angle Reflectors

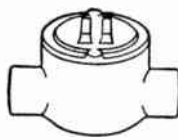
Cat. No.	Each	Dimen. A	Form 75		Std. Pkg.	
			Size Lamps			
SH66	\$2.00	10	50-W. (PS20)	10	10	
						60-W. (A21)
						75-W. (PS22)
SH67	2.50	12	100-W. (A23)	10	10	
			100 or 150-W. (PS25)			
SH68	\$3.50	15	200-W. (PS30)	10	10	
			200-W. (PS30)			

Finish of reflectors: Green porcelain enamel outside, white porcelain enamel inside.

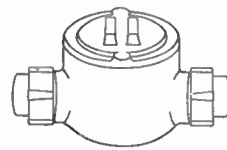
Reflectors are securely clamped to conduit by reflector holders V625 or VH626. Reflector holders not required if guard is used.

## GUA Series Explosion-Proof Junction Condulets

Schedule CE



Type GUAC With Threaded Hubs



Type GUAC With Union Hubs

Furnished with surface cover. Standard finish, cadmium-galvanized.

### Type GUAC

Size In.	With Threaded Hubs		With Union Hubs		Nom. Diam. Cover Opening In.	OUTSIDE DIMENS. OF BODY, IN.	
	Cat. No.	Each	Cat. No.	Each		Diam.	Depth
1/2	GUAC14	\$1.55	GUAC64	\$2.25	2	2 1/2	1 3/4
1/2	.....	.....	GUAC74	2.25	2	2 1/2	1 15/16
3/4	GUAC24	1.65	GUAC76	2.60	3	3 1/2	1 15/16
3/4	GUAC26	2.00	GUAC86	3.10	3	3 1/2	2 1/4
1	GUAC36	2.10	.....	.....	3 5/8	4 1/4	2 5/8
1 1/4	GUAC47	3.40	.....	.....	.....	.....	.....

### Type GUAB

1/2	GUAB14	\$1.55	GUAB64	\$2.25	2	2 1/2	1 3/4
1/2	.....	.....	GUAB66	2.60	3	3 1/2	1 15/16
1/2	GUAB16	1.90	GUAB74	2.25	2	2 1/2	1 15/16
3/4	GUAB24	1.65	GUAB76	2.60	3	3 1/2	1 15/16
3/4	GUAB26	2.00	.....	.....	.....	.....	.....

### Type GUAD

1/2	GUAD14	\$1.65	GUAD64	\$2.70	2	2 1/2	1 3/4
1/2	.....	.....	GUAD66	3.05	3	3 1/2	1 15/16
1/2	GUAD16	2.00	GUAD74	2.70	2	2 1/2	1 15/16
3/4	GUAD24	1.80	GUAD76	3.05	3	3 1/2	1 15/16
3/4	GUAD26	2.15	.....	.....	.....	.....	.....

### Type GUAL

1/2	GUAL14	\$1.55	GUAL64	\$2.25	2	2 1/2	1 3/4
1/2	.....	.....	GUAL66	2.25	2	2 1/2	1 15/16
3/4	GUAL24	1.65	GUAL74	2.25	2	2 1/2	1 15/16
3/4	GUAL26	2.10	GUAL86	3.10	3	3 1/2	2 1/4
1	GUAL36	2.10	.....	.....	3 5/8	4 1/4	2 5/8
1 1/4	GUAL47	3.40	.....	.....	.....	.....	.....

### Type GUAM

1/2	GUAM14	\$1.65	GUAM64	\$2.70	2	2 1/2	1 3/4
1/2	.....	.....	GUAM66	3.05	3	3 1/2	1 15/16
1/2	GUAM16	2.00	GUAM74	2.70	2	2 1/2	1 15/16
3/4	GUAM24	1.80	GUAM76	3.05	3	3 1/2	1 15/16
3/4	GUAM26	2.15	.....	.....	.....	.....	.....

### Type GUAN

1/2	GUAN14	\$1.55	GUAN64	\$2.25	2	2 1/2	1 3/4
1/2	.....	.....	GUAN74	2.25	2	2 1/2	1 15/16
3/4	GUAN24	1.65	GUAN86	3.10	3	3 1/2	2 1/4
3/4	GUAN26	2.10	.....	.....	3 5/8	4 1/4	2 5/8
1	GUAN36	2.10	.....	.....	.....	.....	.....
1 1/4	GUAN47	3.40	.....	.....	.....	.....	.....

### Type GUAT

1/2	GUAT14	\$1.65	GUAT64	\$2.70	2	2 1/2	1 3/4
1/2	.....	.....	GUAT66	3.05	3	3 1/2	1 15/16
3/4	GUAT16	2.00	GUAT74	2.70	2	2 1/2	1 15/16
3/4	GUAT24	1.80	GUAT76	3.05	3	3 1/2	1 15/16
3/4	GUAT26	2.15	GUAT87	5.00	3 5/8	4 1/4	2 5/8
1	GUAT37	3.50	.....	.....	5	5 5/8	2 5/8
1 1/4	GUAT49	7.25	.....	.....	5	5 5/8	3
1 1/4	.....	.....	GUAT99	11.00	.....	.....	.....

### Type GUAW

1/2	GUAW14	\$1.75	GUAW64	\$3.15	2	2 1/2	1 3/4
1/2	.....	.....	GUAW66	3.50	3	3 1/2	1 15/16
3/4	GUAW16	2.10	GUAW74	3.15	2	2 1/2	1 15/16
3/4	GUAW24	1.95	GUAW76	3.50	3	3 1/2	1 15/16
3/4	GUAW26	2.30	.....	.....	.....	.....	.....

**GUA Series Explosion-Proof Junction Condulets**

Schedule CE

Furnished with surface cover.  
Standard finish, cadmium-galvanized.

**Type GUAX**



Size In.	With Threaded Hubs		With Union Hubs		Diam. Cover Opening	OUTSIDE DIMENS. OF BODY, IN.	
	Cat. No.	Each	Cat. No.	Each		Diam.	Depth
1/2	GUAX14	\$1.75	GUAX64	\$3.15	2	2 1/2	1 3/4
1/2	GUAX16	2.10	GUAX66	3.50	3	2 1/2	1 15/16
3/4	GUAX24	1.95	GUAX74	3.15	2	2 1/2	1 15/16
3/4	GUAX26	2.30	GUAX76	3.50	3	3 1/2	1 15/16
1	GUAX37	3.70	GUAX87	5.70	3 5/8	4 1/4	2 1/4
1 1/4	GUAX49	7.50	GUAX99	12.50	5	5 5/8	2 5/8
1 1/4					5		3

**\*Type GUAG**

With Union Hubs



Without Nuts and Sleeves Cat. No.	Each	Hub Sizes						With Nuts and Sleeves Cat. No.	Each
		A	B	C	D	E	F		
GUAG706	\$2.30	1/2	1/2	1/2	1/2	1/2	1/2	GUAG6666	\$3.05
		3/4	3/4	3/4	3/4	3/4	3/4	GUAG7776	3.05
		1/2	3/4	3/4	3/4	3/4	3/4	GUAG6776	3.05
		3/4	1/2	1/2	1/2	1/2	1/2	GUAG7666	3.05
		1/2	3/4	1/2	1/2	1/2	1/2	GUAG6766	3.05

**\*Type GUAH**

With Union Hubs



GUAH706	\$2.50	1/2	1/2	1/2	1/2	1/2	1/2	GUAH66666	\$3.50
		3/4	3/4	3/4	3/4	3/4	3/4	GUAH77776	3.50
		1/2	1/2	3/4	3/4	3/4	3/4	GUAH66776	3.50
		3/4	1/2	1/2	1/2	1/2	1/2	GUAH66766	3.50
		1/2	1/2	3/4	1/2	1/2	1/2	GUAH66766	3.50

**\*Type GUAP**

With Union Hubs



GUAP706	\$2.70	1/2	1/2	1/2	3/4	1/2	GUAP666766	\$3.95
		1/2	1/2	1/2	1	1/2	GUAP666866	3.95
		1/2	1/2	3/4	3/4	3/4	GUAP667776	3.95
		1/2	1/2	3/4	1	3/4	GUAP667876	3.95
		3/4	3/4	3/4	3/4	3/4	GUAP777776	3.95
GUAP7806	\$2.90	3/4	3/4	3/4	1	3/4	GUAP777876	3.95
		1/2	1/2	1	1	1	GUAP668886	4.45
		3/4	3/4	1	1	1	GUAP778886	4.45

**\*Type GUAQ**

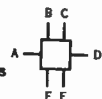
With Union Hubs



GUAQ706	\$2.70	1/2	1/2	1/2	3/4	1/2	GUAQ666766	\$3.95
		1/2	1/2	1/2	1	1/2	GUAQ666866	3.95
		1/2	1/2	3/4	3/4	3/4	GUAQ667776	3.95
		1/2	1/2	3/4	1	3/4	GUAQ667876	3.95
		3/4	3/4	3/4	3/4	3/4	GUAQ777776	3.95
		3/4	3/4	3/4	1	3/4	GUAQ777876	3.95

**\*Type GUA F**

With Union Hubs

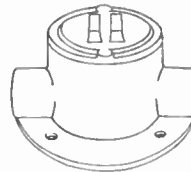


GUA F706	\$2.90	1/2	1/2	1/2	1/2	1/2	1/2	GUA F6666666	\$4.40
		1/2	3/4	3/4	1/2	3/4	3/4	GUA F6776776	4.40
		1/2	1/2	1/2	1/2	3/4	3/4	GUA F6666776	4.40
		3/4	3/4	3/4	3/4	3/4	3/4	GUA F7777776	4.40
		3/4	1/2	1/2	3/4	1/2	1/2	GUA F7667666	4.40
		3/4	1/2	1/2	3/4	3/4	3/4	GUA F7667776	4.40

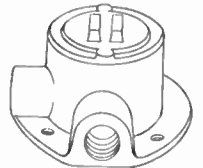
**GUF Series Explosion-Proof Junction Condulets**

Schedule CE

Furnished with surface cover and threaded hubs.  
Standard finish, cadmium-galvanized.



Type GUF C



Type GUF L

**Type GUF C**

Size In.	Cat. No.	Each	Diam. Cover Opening	OUTSIDE DIMENS. OF BODY, IN.
3/4	GUF C26	\$2.40	3	3 1/2
1	GUF C36	2.60	3	3 1/2
1	GUF C39	3.65	5	5 5/8

**Type GUF L**

3/4	GUF L26	\$2.40	3	3 1/2	1 15/16
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**Type GUF T**

3/4	GUF T26	\$2.60	3	3 1/2	1 15/16
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**Type GUF X**

3/4	GUF X26	\$2.80	3	3 1/2	1 15/16
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**Union Hub Nuts and Sleeves**  
For Condulets of the GUA Series

Nuts and Sleeves				Nuts Only			Sleeves Only		
Nut In.	Sleeve In.	Cat. No.	Each	Size In.	Cat. No.	Each	Size In.	Cat. No.	Each
3/4	1/2	GUH212	\$.25	3/4	GUH02	\$.10	1/2	GUH 1	\$.15
3/4	3/4	GUH222	.25	3/4	GUH02	.10	3/4	GUH 2	.15
1	1/2	GUH313	.35	1	GUH03	.12	1/2	GUH31	.23
1	3/4	GUH323	.35	1	GUH03	.12	3/4	GUH32	.23
1	1	GUH333	.35	1	GUH03	.12	1	GUH 3	.23

**Threaded Covers, Canopies, and Adapters**  
For Condulets of the GUA and GUF Series

**Surface Covers**



Diam. Cover Opening	Cat. No.	Each
2	GUA04	\$.65
3	GUA06	.75
3 5/8	GUA07	1.10
5	GUA09	3.35

**Flush Covers**



Diam. Cover Opening	Cat. No.	Each
2	GUA049	\$.65
3	GUA069	.75
3 5/8	GUA079	1.10
5	GUA099	3.35

**Sealing Covers**



2	GUA041	\$.80
3	GUA062	1.00
3 5/8	GUA072	1.30
5	GUA092	3.75

**Fixture Covers**



3	GUA0682	\$3.90
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**Adapters**



**Fixture Canopies**



3	GUA068	\$3.50
5	GUA098	6.10

Size fixture stem: No. GUA-068, 3/4 in.; No. GUA098, 1 1/4 in.

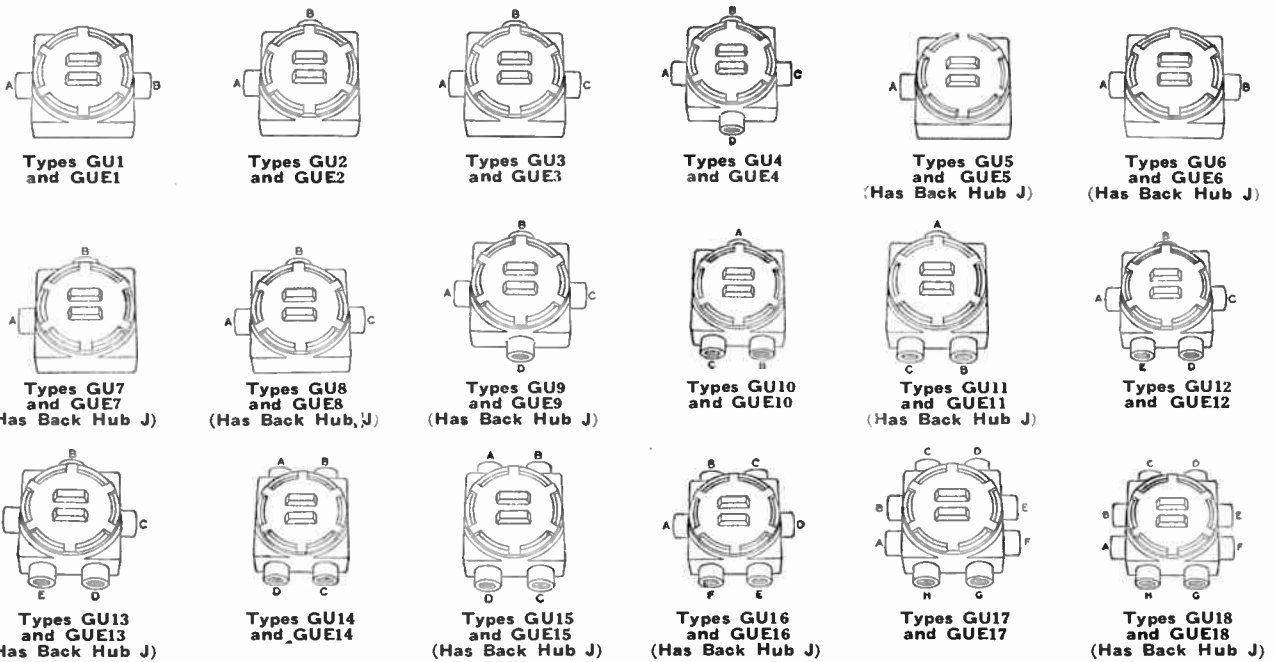
Takes canopies, fixtures, etc., designed for 3-in. cover openings, on GU, GUA, GUE, or GUP series condulets with 3 5/8-in. cover openings.

3 5/8	GUA0760	\$1.55
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\*Outside dimensions of body: Length 3 3/4 in., depth 1 15/16 in. at corners, 3 1/8 in. over covers; nominal diameter of cover opening 3 in. Width-Type GUAQ 5 5/8 in.; all other types 3 3/4 in.

## Types GU and GUE Explosion-Proof Junction Condulets

Schedule CE



The Types GU and GUE Condulets provide explosion-proof utility junction boxes with welded hubs to meet requirements for special hub combinations. The body is blind tapped to take CB connection block.

The catalogue numbers and prices are arrived at in the following manner: Refer to the illustrations above and select the particular type of Condulet desired. Use this

type as the first portion of the catalogue number. The catalogue number is completed by using the symbols\* shown below in the schedule of threaded and union hubs, to indicate the size and type of each hub in rotation as lettered on the illustration.

Any hub may be omitted by using a zero (0) in the proper position in the catalogue number.

### Example

See illustration at the left. A is to be 3/4-inch threaded hub; B, 1-inch threaded hub; C, 3/4-inch union hub; and J, 3/4-inch union hub in center of back.

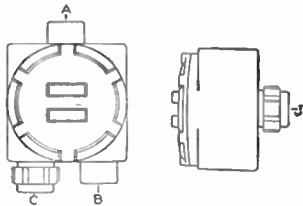
The catalogue number will be GU11-23PP.

The price is determined in the following manner:

Type GU Body and Cover without Hubs.....	\$2.00
A Hub, 3/4-Inch Threaded, Symbol 2*	.65
B Hub, 1-Inch Threaded, Symbol 3*	.75
C Hub, 3/4-Inch Union, Symbol P*	1.00
J Hub, 3/4-Inch Union, Symbol P*	1.00
<b>Total Price of Unit.....</b>	<b>\$5.40</b>

\*Symbol numbers are given in schedule of threaded and union hubs below.

Type GUE catalogue numbers are made up in the same manner. Hub arrangements and type numbers are same as in Type GU.



### Types GU and GUE without Hubs

Furnished with screw cover. Take threaded or union hubs.

#### Type GU

Dimensions over all: 4 1/8 in. square; 2 1/8 in. deep; 3 5/8 in. diameter of cover opening. Body and Cover without Hubs...each \$2.00

#### Type GUE

Dimensions over all: 4 5/8 in. square; 3 5/8 in. deep; 3 5/8 in. diameter of cover opening. Body and Cover without Hubs...each \$2.00

### Threaded and Union Hubs For Types GU and GUE Condulets

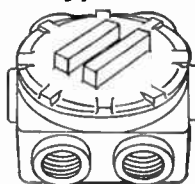
Type GU takes 1/2 to 1-inch hubs.

Type GUE takes 1/2 to 2-inch hubs†.

†Maximum size of hubs: Rear hub, 1 1/4 inches; 2 hubs on each side, 1 1/2 inches threaded, 1 1/4-inch union.

Threaded			Union		
Size	Symbol	Each	Size	Symbol	Each
1/2	1	\$.60	1/2	N	\$1.00
3/4	2	.65	3/4	P	1.00
1	3	.75	1	Q	1.20
1 1/4	4	.90	1 1/4	R	1.75
1 1/2	5	1.15	1 1/2	S	3.00
2	6	1.50	2	T	4.00

### Type GUP Explosion-Proof Condulets



Type GUP Condulets are especially suitable for gasoline pump installations that are to be rewired to comply with the new inspection requirements for hazardous locations, where frequently an explosion-proof junction Condulet will be required to replace a steel knockout box. Hubs tapped for 3/4-inch conduit. Cover opening diameter, 3 5/8 inches.

#### With 6 Hubs

2 in top; 1 in each side; 2 in bottom; none in back.  
No. GUP215.....each \$2.70

#### With 10 Hubs

2 in top; 1 in each side; 2 in bottom; 4 in back.  
No. GUP214.....each \$2.90  
Outside dimensions of body exclusive of hubs: Length 4 1/2 in.; width 4 1/2 in.; depth 2 1/2 in.



### Connection Blocks

For Types GU and GUE Condulets

Style, 4-wire. Rating—20 amps., 125 volts.  
No. CB1124.....each \$1.90



**EV Series Explosion-Proof Lighting  
Fixture Condulets**

Schedule CE

40-watt is furnished with globe EV4 and guard EV084, and takes 25 or 40-watt Type A lamps, 50-watt Type P19 mill type lamps, or any medium base lamp not exceeding 2 7/8 x 4 1/4 inches.

100-watt is furnished with globe EV10 and guard EV081, and takes 50, 60, 75, or 100-watt lamps, or any medium base lamp not exceeding 2 7/8 x 6 1/16 inches.

200-watt is furnished with globe EV20 and guard EV082, and takes 150 or 200-watt lamps, or any medium base lamp not exceeding 3 3/4 x 8 5/8 inches.

**Type EVA—Pendent Type**



<b>40-Watt</b>		
Catalogue Number.....	EVA149	
Each.....	\$12.00	
Size.....	inch 1/2	

<b>100-Watt</b>		
Catalogue Number.....	EVA219	
Each.....	\$18.00	
Size.....	inch 3/4	

<b>200-Watt</b>		
Catalogue Number.....	EVA229	
Each.....	\$26.00	
Size.....	inch 3/4	

**Type EV—Ceiling Type**

For Condulets of the GUA and GUF Series with 3-Inch Cover Openings\*



<b>40-Watt</b>		
Catalogue Number.....	EV349	
Each.....	\$14.00	

<b>100-Watt</b>		
Catalogue Number.....	EV319	
Each.....	\$20.00	

<b>200-Watt</b>		
Catalogue Number.....	EV329	
Each.....	\$28.00	

**Type EV—Bracket Type**

For Condulets of the GUA and GUF Series with 3-Inch Cover Openings\*



<b>40-Watt</b>		
Catalogue Number.....	EV449	
Each.....	\$16.00	

<b>100-Watt</b>		
Catalogue Number.....	EV419	
Each.....	\$22.00	

<b>200-Watt</b>		
Catalogue Number.....	EV429	
Each.....	\$30.00	

**Accessories and Parts**

For Types EV and EVA

**Clear Globes**

40-watt globe is furnished with threaded ring. 100 and 200-watt globes are furnished with aluminum gaskets.

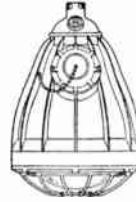
40-Watt		100-Watt		200-Watt	
Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
EV4	\$4.00	EV10	\$5.00	EV20	\$9.00
<b>Cast Aluminum Guards</b>					
EV084	\$1.50	EV081	\$2.00	EV082	\$3.00
<b>Reflectors</b>					
<b>RLM</b>					
EV411	\$2.50	EV111	\$3.00	EV211	\$4.00
<b>Deep Bowl</b>					
EV412	\$2.50	EV112	\$3.00	EV212	\$4.00
<b>Shallow Bowl</b>					
EV413	\$2.25	EV113	\$2.75	EV213	\$3.75
<b>30° Angle</b>					
EV414	\$2.50	EV114	\$3.00	EV214	\$4.00

Finish.—Condulet, cadmium-galvanized; guard, hood, and screw cover, aluminum; reflector, green porcelain enamel outside, white porcelain enamel inside.

\*Can also be mounted on Condulets of the GU, GUA, GUE, and GUP series with 3 5/8-inch cover opening when used with adapter No. GUA0760.

**Type EVA Explosion-Proof Lighting  
Fixture Condulets**

Schedule CE



Furnished with reflector, mounted inside unit, and a bowl-shaped lens instead of a globe. Has threaded cover opening in housing for relamping. Lens mounted in metal ring; in case of breakage, entire lens assembly has to be replaced. No. EVA4539 may be mounted in any position; EVA4549, vertically or not more than 45° from vertical position; EVA459, vertically or not more than 15° from vertical position.

Furnished with lens EV50 and guard EV085, and takes 300, 400, or 500-watt lamps, or any mogul base lamp not exceeding 5 x 9 1/16 inches.

Cat. No.....	EVA4539	EVA4549	EVA459
Each.....	\$110.00	110.00	110.00
Maximum Lamp.....watts	300	400	500
Size.....inches	1 1/4	1 1/4	1 1/4

**Flexible Coupling For Type EVA Condulets**



Permits fixture to assume a vertical position by gravity.  
No. ECF44.....each \$9.50

**Type EVH Explosion-Proof Hand Lamps**



Has moulded rubber handle which provides a comfortable grip. A third terminal is provided for connection to a third wire in the cord for grounding all non-current-carrying metal parts. Furnished with globe EV4 and guard EVH084, and takes 25 or 40-watt Type A, or 50-watt Type P-19 mill type lamps, or any medium base lamp not exceeding 2 3/8 x 4 1/4 inches.

No.	Description	Each
EVH40	.250 to .625 Diam. Cable.....	\$14.50

**Clear Globes**

EV4 With Threaded Ring..... \$4.00

**Guards**

EVH084 Cast Aluminum..... \$1.75

**Type EVS Explosion-Proof Portable Lamps**



Same construction as 100 and 200-Watt Type EVA with a handle assembly added, which includes hook and cable clamp. A third wire is provided for connection to a third wire in cord for grounding.

100-watt is furnished with globe EV10 and guard EV081, and takes 50, 60, 75 or 100-watt lamps, or any medium base lamp not exceeding 2 7/8 x 6 1/16 inches.

200-watt is furnished with globe EV20 and guard EV082, and takes 150 or 200-watt lamps, or any medium base lamp not exceeding 3 3/4 x 8 5/8 inches.

Diameter of cable, .250 to .625.

100-Watt		200-Watt	
No.	Each	No.	Each
EV30	\$21.50	EV20	\$29.50
<b>Clear Globes with Aluminum Gaskets</b>			
EV10	\$5.00	EV20	\$9.00
<b>Cast Aluminum Guards</b>			
EV081	\$2.00	EV082	\$3.00

**Type EVA Explosion-Proof Pilot and Sign  
Light Fixture Condulets**



Furnished with guard and globe assembly EV39; takes 10-watt Type S-14 lamps. Aluminum gaskets. Size 1/2 inch.

No. EVA139.....each \$10.00

**Guard and Clear Globe Assembly**

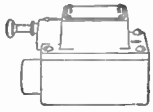
No. EV39.....each \$5.50

**Type EVNA Sign Attachments**

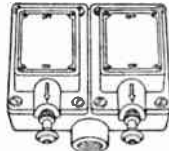
Plain front glass backed by opal glass on which not more than 5 figures or letters can be placed. Characters furnished at 30 cents each.  
No. EVNA03.....each \$4.00

## FS Series Explosion-Proof Tumbler Switch Condulets

Schedule CE



Type FS



Type FS 2-Gang

Suitable for control of lighting, appliance and small motor circuits, or for push button remote control of magnetically operated motor controllers.

Furnished complete with tumbler switch. Standard finish, cadmium-galvanized.

Outside dimensions exclusive of hubs: Types FS, FSC, and FSDC—Length 4 5/8 in.; width 3 in.; depth 3 13/16 in. Types FS and FSC, 2-gang—Length 4 5/8 in.; width 6 3/16 in.; depth 3 13/16 in.

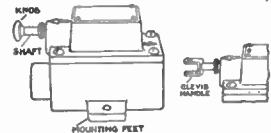
Cat. No.	Each	Type FS	Size In.	Style	RATINGS		
					125 V.	250 V.	H.P.
FS2129	\$5.50	1 Pole	3/4	20	10	...	
FS218	5.60	2 Pole	3/4	20	20	2	
FS2123	8.60	3 Pole	3/4	10	10	1/4	
FS2130	5.90	3 Way	3/4	20	10	...	
FS2140	8.80	4 Way	3/4	10	5	...	

Cat. No.	Each	Type FSC	Size In.	Style	RATINGS		
					125 V.	250 V.	H.P.
FSC2129	\$5.65	1 Pole	3/4	20	10	...	
FSC218	5.75	2 Pole	3/4	20	20	2	
FSC2123	8.75	3 Pole	3/4	10	10	1/4	
FSC2130	6.05	3 Way	3/4	20	10	...	
FSC2140	8.95	4 Way	3/4	10	5	...	

Cat. No.	Each	Type FSDC	Size In.	Style	RATINGS		
					125 V.	250 V.	H.P.
FSDC2129	\$5.65	1 Pole	3/4	20	10	...	
FSDC218	5.75	2 Pole	3/4	20	20	2	
FSDC2123	8.75	3 Pole	3/4	10	10	1/4	
FSDC2130	6.05	3 Way	3/4	20	10	...	
FSDC2140	8.95	4 Way	3/4	10	5	...	

Cat. No.	Each	Type FS 2-Gang	Size In.	Style	RATINGS		
					125 V.	250 V.	H.P.
FS2229	\$8.15	1 Pole	3/4	20	10	...	
FS228	8.30	2 Pole	3/4	20	20	2	
FS2223	14.30	3 Pole	3/4	10	10	1/4	
FS2230	9.00	3 Way	3/4	20	10	...	
FS2240	14.90	4 Way	3/4	10	5	...	

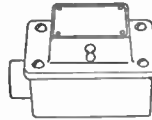
Cat. No.	Each	Type FSC 2-Gang	Size In.	Style	RATINGS		
					125 V.	250 V.	H.P.
FSC2229	\$8.30	1 Pole	3/4	20	10	...	
FSC228	8.45	2 Pole	3/4	20	20	2	
FSC2223	14.45	3 Pole	3/4	10	10	1/4	
FSC2230	9.15	3 Way	3/4	20	10	...	
FSC2240	15.05	4 Way	3/4	10	5	...	



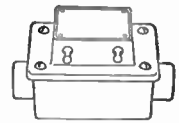
Suffix No.	Description	Extra Each
S43	Standard Shaft with Clevis Handle	None
S21	Shaft 1 In. Longer than Standard with Removable Knob	\$ .30
S27B	Standard Shaft and Knob (not Removable) with Mounting Feet Welded to Body	.80
S27C	Standard Shaft and Removable Knob with Mounting Feet Welded to Body	.80
S27A	Shaft 1/2 In. Longer than Standard with Removable Knob, Mounting Feet Welded to Body	1.10
S27	Shaft 1 In. Longer than Standard with Removable Knob, Mounting Feet Welded to Body	1.10
S27D	Standard Shaft, Removable Composition Knob, Mounting Feet Welded to Body	1.15

## FS Series Explosion-Proof Tumbler Switch Condulets

Schedule CE



Type FS Single



Type FSC Duplex

Furnished complete with tumbler switch. Standard finish, cadmium-galvanized.

Outside dimensions exclusive of hubs: Length 5 1/8 in.; width 3 1/2 in.; depth 3 1/2 in.

Cat. No.	Each	Type FS Single	Size In.	Style	RATINGS	
					125 V.	250 V.
FS2101	\$5.50	1 Pole	3/4	10	5	
FS2100	5.60	2 Pole	3/4	10	10	
FS2107	5.90	3 Way	3/4	10	5	
FS2108	8.80	4 Way	3/4	5	2	

Cat. No.	Each	Type FSC Single	Size In.	Style	RATINGS	
					125 V.	250 V.
FSC2101	\$5.65	1 Pole	3/4	10	5	
FSC2100	5.75	2 Pole	3/4	10	10	
FSC2107	6.05	3 Way	3/4	10	5	
FSC2108	8.95	4 Way	3/4	5	2	

Cat. No.	Each	Type FS Duplex	Size In.	Style	RATINGS	
					125 V.	250 V.
FS2109	\$7.00	1 Pole	3/4	10	5	
FS2110	7.80	2 Pole	3/4	10	10	
FS2113	7.90	3 Way	3/4	10	5	
FS2114	15.30	4 Way	3/4	5	2	

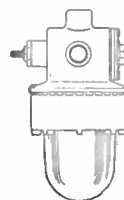
Cat. No.	Each	Type FSC Duplex	Size In.	Style	RATINGS	
					125 V.	250 V.
FSC2109	\$7.15	1 Pole	3/4	10	5	
FSC2110	7.95	2 Pole	3/4	10	10	
FSC2113	8.05	3 Way	3/4	10	5	
FSC2114	15.45	4 Way	3/4	5	2	

Cat. No.	Each	Type FS Triple	Size In.	Style	RATINGS	
					125 V.	250 V.
FS2115	\$8.50	1 Pole	3/4	10	5	
FS2116	9.10	2 Pole	3/4	10	10	
FS2117	9.75	3 Way	3/4	10	5	
FS2118	22.00	4 Way	3/4	5	2	

Cat. No.	Each	Type FSC Triple	Size In.	Style	RATINGS	
					125 V.	250 V.
FSC2115	\$8.65	1 Pole	3/4	10	5	
FSC2116	9.25	2 Pole	3/4	10	10	
FSC2117	9.90	3 Way	3/4	10	5	
FSC2118	22.15	4 Way	3/4	5	2	

## Type EVG Explosion-Proof Lighting Fixture Condulets

For Gasoline Pump and Pump Dial Illumination



Type EVG Condulet is provided with a special Condulet body having a small oscillating switch type SWH; a wiring compartment with sufficient room for making the taps and splices; and a hub arrangement particularly suited to the requirements of gasoline pump wiring.

Intended for mounting within the pump housing where its globe is not subject to breakage.

When used for indirect illumination of the pump dial, the fixture should be installed with the globe in horizontal position or in a vertical position with the base of the lamp down, so the globe may be removed easily.

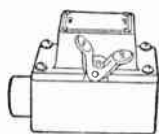
Dimensions over all, exclusive of hub: Length 8 5/8 in.; width 5 1/2 in. Size 1/2 inch.

Furnished with switch SWH13 and globe EV4. Takes 25 or 40-watt Type A lamps, 50-watt Type P19 mill type lamps, or any medium base lamp not exceeding 2 3/8 x 4 1/4 inches.

No. EVG2 Condulet ..... each \$10.00  
No. EV4 Clear Globe with Threaded Ring ..... each 4.00

**FS Series Explosion-Proof Push Button Switch Condulets**

Schedule CE



Type FS  
Rocker Type



Type FSC  
Key Operation

Furnished complete with double push button switch. Standard finish, cadmium-galvanized.

Outside dimensions exclusive of hubs; Types FS and FSC—Length 4 5/8 in.; width 3 in.; depth 3 1/16 in. Types FS and FSC 2-Gang—Length 4 5/8 in.; width 6 3/16 in.; depth 3 1/16 in.

**With Rocker Type Operating Handle**

**Type FS**



Cat. No.	Each	Size In.	Style	RATINGS		
				125 V.	250 V.	H.P.
FS2138	\$5.50	3/4	1 Pole	20	10	..
FS214	5.60	3/4	2 Pole	20	20	2
FS2139	5.90	3/4	3 Way	20	10	..
FS2145	8.80	3/4	4 Way	5	2	..

**Type FSC**



FSC2138	\$5.65	3/4	1 Pole	20	10	..
FSC214	5.75	3/4	2 Pole	20	20	2
FSC2139	6.05	3/4	3 Way	20	10	..
FSC2145	8.95	3/4	4 Way	5	2	..

**Type FS 2-Gang**



FS2238	\$8.15	3/4	1 Pole	20	10	..
FS2204	8.30	3/4	2 Pole	20	20	2
FS2239	9.00	3/4	3 Way	20	10	..
FS2245	14.90	3/4	4 Way	5	2	..

**Type FSC 2-Gang**



FSC2238	\$8.30	3/4	1 Pole	20	10	..
FSC2204	8.45	3/4	2 Pole	20	20	2
FSC2239	9.15	3/4	3 Way	20	10	..
FSC2245	15.05	3/4	4 Way	5	2	..

**For Key Operation, 5/8-Inch Key**

Key furnished at 15 cents each.

**Type FS**



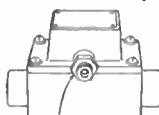
FS2135	\$5.50	3/4	1 Pole	20	10	..
FS2106	5.60	3/4	2 Pole	20	20	2
FS2136	5.90	3/4	3 Way	20	10	..
FS2137	8.80	3/4	4 Way	5	2	..

**Type FSC**

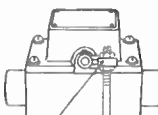


FSC2135	\$5.65	3/4	1 Pole	20	10	..
FSC2106	5.75	3/4	2 Pole	20	20	2
FSC2136	6.05	3/4	3 Way	20	10	..
FSC2137	8.95	3/4	4 Way	5	2	..

**Special Mechanisms**



MECHANISM FOR 4-INCH KEY



ATTACHMENT FOR ROD OPERATION

Switch Condulets of the FS Series listed above can be furnished with various special mechanisms. For such arrangements the catalogue number should be followed by a suffix as described below. Example: FS2106-S32.

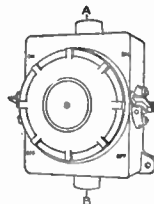
There is no extra charge for these mechanisms.

Suffix No.	Description	Charge
S-32	Key Operation, 4-Inch Key*	No Extra Charge
S-33	Attachment for Rod Operation	No Extra Charge

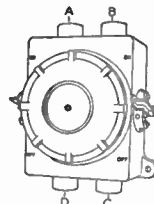
\*Furnished with nut for clamping against inner casing and 4-inch key for operation through outer casing of a pump housing. Can be applied to Condulet for key operation only.

**Type GUB Explosion-Proof Panelboard Condulets**

Schedule CE



Type GUB1



Type GUB14

The Type GUB Condulet is used as a 2-circuit, 3 to 2 or 2 to 2-wire convertible panel, on 125-volt, 2-wire, or 125-250-volt, 3-wire, systems with grounded neutral, each circuit having single-pole protection. The 3-wire or 2-wire feeder may extend through, if wire size is not reduced.

The terminal board has a neutral bar or strip with main lugs at each end and a wire-binding screw for the neutral conductor of each circuit; also 2 terminals with lugs, one terminal for each outside conductor.

If furnished without breakers, circuit breaker ratings must be stamped in name plate when breakers are installed.

Outside dimensions, exclusive of hubs; Length 10 in.; width 8 in.; depth 5 1/2 in.; diameter of cover opening 7 in. Standard finish, cadmium-galvanized.

Furnished with terminal board\* and with or without two 125-volt, single-pole Flipon circuit breakers.

**Threaded for Rigid Conduit**

**Type GUB1**

Size: A-3/4, B-3/4



Ampere Rating	With Circuit Breakers		Without Circuit Breakers	
	Cat. No.	Each	Cat. No.	Each
15	GUB109-22-15	\$48.50	GUB109-22-B	\$38.50
20	GUB109-22-20	48.50		
25	GUB109-22-25	48.50		
35	GUB109-22-35	49.50		
Size: A-1 1/4, B-1 1/4				
15	GUB109-44-15	\$48.70	GUB109-44-B	\$38.70
20	GUB109-44-20	48.70		
25	GUB109-44-25	48.70		
35	GUB109-44-35	49.70		

**Type GUB2**

Size: A-1, B-3/4, C-3/4



15	GUB209-322-15	\$49.00	GUB209-322-B	\$39.00
20	GUB209-322-20	49.00		
25	GUB209-322-25	49.00		
35	GUB209-322-35	50.00		
Size: A-1 1/2, B-1, C-1				
15	GUB209-533-15	\$49.20	GUB209-533-B	\$39.20
20	GUB209-533-20	49.20		
25	GUB209-533-25	49.20		
35	GUB209-533-35	50.20		

**Type GUB14**

Size: A-3/4, B-3/4, C-1, D-1



15	GUB1409-2233-15	\$49.50	GUB1409-2233-B	\$39.50
20	GUB1409-2233-20	49.50		
25	GUB1409-2233-25	49.50		
35	GUB1409-2233-35	50.50		
Size: A-1, B-1, C-1 1/2, D-1 1/2				
15	GUB1409-3355-15	\$49.95	GUB1409-3355-B	\$39.95
20	GUB1409-3355-20	49.95		
25	GUB1409-3355-25	49.95		
35	GUB1409-3355-35	50.95		

\*Grounded neutral strip: When any of the above catalogue numbers are followed by the suffix S2 the terminal board will be furnished with the neutral strip grounded to the Condulet, at no additional charge.



## Type GUB Explosion-Proof Panelboard Condulets

Schedule CE

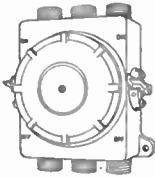
### Type GUB11

Threaded for Union Hub Nuts and Sleeves

Takes the 1-inch nut and any of the sleeves listed below, or the 1-inch cap Type GUH, listed on another page.

Dimensions overall exclusive of hubs: Length 10 in.; width 8 in.; depth 5 1/2 in.; diameter of cover opening 7 in.

Standard finish, cadmium-galvanized.



Ampere Rating	With Circuit Breaker		Without Circuit Breaker	
	Cat. No.	Each	Cat. No.	Each
15	GUB1109-LQ-15	\$50.60	GUB1109-LQ-B	\$40.60
20	GUB1109-LQ-20	50.60		
25	GUB1109-LQ-25	50.60		
35	GUB1109-LQ-35	51.60		

### Union Hub Nuts and Sleeves

For Type GUB11 Condulets

Standard finish, cadmium-galvanized.

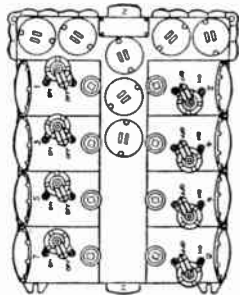


Nuts and Sleeves			Nuts Only			Sleeves Only			
Nut Sleeve In.	In.	Cat. No.	Each	Size In.	Cat. No.	Each	Size In.	Cat. No.	Each
1	1/2	GUH313	\$.35	1	GUH03	\$.12	1/2	GUH31	\$.23
1	3/4	GUH323	.35	1	GUH03	.12	3/4	GUH32	.23
1	1	GUH333	.35	1	GUH03	.12	1	GUH3	.23

## Type FLP Explosion-Proof Panelboards

Schedule CE

With Circuit Breakers



Type FLP Panelboard consists of a ready-wired assembly of "Flipon" circuit breakers in an explosion-proof housing. A separate compartment is provided for each breaker. Wiring connections are made to main and branch circuit terminal blocks mounted in a separate T-shaped compartment. Main terminals are furnished with main lugs only. The wire terminals are accessible through openings provided with threaded covers. Usually the panelboard is mounted so that the branch circuit hubs are at the top;

it may be mounted with the circuit hubs pointing downward if it is desirable to have the branch circuits coming out of the bottom of board.

Main hubs are arranged for 2-inch conduit and are located at each end of the main terminal compartment. The 3/4-inch branch circuit hubs open into the branch terminal compartment. Circuit breaker compartments are numbered from top to bottom with odd numbers on the left and even numbers on the right. Regularly furnished wired for 3 to 2 or 2 to 2-wire systems, convertible.

Dimensions overall including hubs: Length 8 circuits, 27 1/8 in.; 6 circuits 23 1/2 in.; 4 circuits 18 3/8 in.; width 21 3/4 in. depth 6 3/4 in.

No. Cir.	Each Cir. Amps.	Single Pole		Double Pole	
		125 Volts D.C. or A.C.	Each	125-250 Volts D.C. or A.C.	Each
4	15	FLP41-15	\$155.00	FLP42-15	\$175.00
	20	FLP41-20	155.00	FLP42-20	175.00
	25	FLP41-25	155.00	FLP42-25	175.00
	35	FLP41-35	158.00	FLP42-35	178.00
6	15	FLP61-15	200.00	FLP62-15	240.00
	20	FLP61-20	200.00	FLP62-20	240.00
	25	FLP61-25	200.00	FLP62-25	240.00
	35	FLP61-35	205.00	FLP62-35	245.00
8	15	FLP81-15	230.00	FLP82-15	280.00
	20	FLP81-20	230.00	FLP82-20	280.00
	25	FLP81-25	230.00	FLP82-25	280.00
	35	FLP81-35	236.00	FLP82-35	286.00

## Type FLS Explosion-Proof General Use Switch Condulets

Schedule CE



Type FLS are general use enclosed switches, rated in amperes, for use in hazardous locations. If used as motor switches allowance should be made for the locked rotor motor current which may be 5 or 6 times the full load motor current. The single throw, and the double throw with no "off" position, are furnished with switches of the tumbler type, positive quick make and break; therefore they cannot be held in partial contact.

The double throw and motor reversing switches with "off" position are slow make and quick break. The slow make permits proper control of handle for joggling.

These Condulets are listed with 2 hubs, through feed, both hubs for threaded conduit of the same size. Other hub arrangements can be furnished.

Standard finish, cadmium-galvanized.

Furnished with switch, not fusible.

### Single Throw, Tumbler

RATINGS	Hub Size Through Feed	2-Pole		3-Pole	
		Cat. No.	Each	Cat. No.	Each
60A. 30A. 125V. 250V. D.C. A.C.	1/2	FLS102-11	\$22.00	FLS103-11	\$30.00
	3/4	FLS102-22	22.00	FLS103-22	30.00
	1	FLS102-33	22.00	FLS103-33	30.00
	1 1/4	FLS102-44	22.00	FLS103-44	30.00
100A. 100A. 125V. 250V. D.C. A.C.	1	FLS106-33	60.00		
	1 1/4	FLS106-44	60.00	FLS107-44	70.00
	1 1/2	FLS106-55	60.00	FLS107-55	70.00
	2			FLS107-66	70.00
200A. 200A. 125V. 230V. D.C. A.C.	1 1/2	FLS108-55	75.00	FLS109-55	185.00
	2	FLS108-66	75.00	FLS109-66	185.00

### Double Throw, Tumbler, No "Off" Position

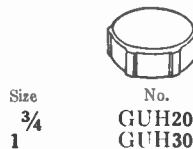
60A. 30A. 125V. 250V. D.C. A.C.	1/2	FLS101-11	\$30.00		
	3/4	FLS101-22	30.00		
	1	FLS101-33	30.00		
	1 1/4	FLS101-44	30.00		

### Double Throw with "Off" Position

Ratings { 115V. 230V. 460/575V. A.C. A.C. A.C.	1/2	FLS112-11	\$36.00	FLS113-11	\$38.00
	3/4	FLS112-22	36.00	FLS113-22	38.00
	1	FLS112-33	36.00	FLS113-33	38.00
	1 1/4	FLS112-44	36.00	FLS113-44	38.00
2-Pole { 20A. 20A. 20A. 1-Phase { 1 1/2HP 3HP 5HP 3-Pole { 20A. 20A. 20A. 2 or 3 Ph. { 2HP 5HP 5HP	1/2	FLS110-11	\$38.00	FLS111-11	\$40.00
	3/4	FLS110-22	38.00	FLS111-22	40.00
	1	FLS110-33	38.00	FLS111-33	40.00
	1 1/4	FLS110-44	38.00	FLS111-44	40.00

### Type GUH Threaded Blank Caps

For GUA Series without Sleeves and Nuts, and Type GUB11 Condulets



Size	No.	Each	Size
3/4	GUH20	\$.15	1/2
1	GUH30	.20	1

### Type PLG Pipe Plugs



No.	Each
PLG1	\$.06
PLG2	.08
PLG3	.10

### Nipple Covers for GUA and GUF Series



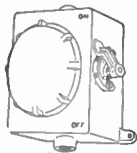
Diameter Cond. Cover Opening, In.	Cat. No.	Each	Stem In.
2	GUA0471	\$1.20	1/2
3	GUA0671	1.55	1 1/2

**Types FLF and GUB Explosion-Proof Motor Starting Switch Condulets**

Schedule CE



Type FLF



Type GUB

Types FLF and GUB Condulets are designed as explosion proof housings with operating handles or push buttons for external operation of certain definite motor starting switch mechanisms as indicated in the listings. Holes are provided for a padlock so that the operating handle can be locked "off" or "on." The switches are trip-free from the handle; therefore, locking the handle "on" does not prevent tripping but the switch cannot then be reset without removing the padlock. Switches are "across-the-line" starting type with thermal overload trip.

Heaters for the thermal overload trip units should be selected in accordance with the name plate current rating of the motor to be protected. If the name plate current rating is not known, it can be approximated from tables published in Article 8 of the N. E. Code. However, for proper protection to the motor, the heater should be selected in accordance with the actual motor name plate rating. If switch is located in a cool place and the motor in a hot place, the heater rating should be smaller than normal.

The heating elements are renewable and can be changed to suit the current rating of the particular motor that is to be protected. Only 2 heaters are used, one in each of the outer poles of the switch. Therefore, if used on 2-phase 3-wire circuits, the common wire should be connected to the center pole. All switches are top connected; line at top, load at bottom.

These Condulets are listed for threaded hub arrangements. Other hub arrangements can be furnished.

Standard finish, cadmium-galvanized.

**G-E Switch CR1032-B2**

With Switch and 2 Heaters Cat. No.	Each	Without Switch		Hub Arrangement
		Cat. No.	Each	
FLF104-22*	20.00	FLF104-22-B	\$20.00	One 3/4" at Top One 3/4" at Bottom
FLF204-244*		FLF204-244-B	20.00	
FLF304-22*	20.00	FLF304-22-B	20.00	Two 1 1/4" at Bottom
GUB105-22*		GUB105-22-B	30.00	One 3/4" at Top One 3/4" at Bottom
GUB205-244*	30.00	GUB205-241-B	30.00	One 3/4" at Top Two 1 1/4" at Bottom
GUB305-22*		GUB305-22-B	30.00	Two 3/4" at Bottom
<b>G-E Switch CR1062-C2</b>				
FLF196-22*	20.00	FLF196-22-B	20.00	One 3/4" at Top One 3/4" at Bottom
FLF296-244*		FLF296-244-B	20.00	One 3/4" at Top Two 1 1/4" at Bottom
FLF396-22*	20.00	FLF396-22-B	20.00	Two 3/4" at Bottom
<b>Trumbull Switch TM2 1/2</b>				
GUB107-22*	30.00	GUB107-22-B	30.00	One 3/4" at Top One 3/4" at Bottom
GUB207-244*		GUB207-244-B	30.00	One 3/4" at Top Two 1 1/4" at Bottom
GUB307-22*	30.00	GUB307-22-B	30.00	Two 3/4" at Bottom

\*Catalogue number includes 2 heaters which must be specified. Select heaters required and add Crouse-Hinds symbol number of heater as a suffix to the catalogue number of complete conduit. Example: The catalogue number of FLF104-22, when furnished with two 1.1-ampere heaters, would be FLF104-22-114. Symbol number 0 (zero) may be used to indicate heaters omitted, to be ordered and installed later.

**Heater Units for Motor Starting Switches**

Schedule CE

For Use in Types FLF and GUB Condulets

General Electric\*

Tested for Group Fusing\*

Full Load Current Rating of Motor	Ampere Rating of Heater	Crouse-Hinds Symbol No. of Heater	Full Load Current Rating of Motor.	Ampere Rating of Heater	Crouse-Hinds Symbol No. of Heater
.36 to .40	.45	107	2.63 to 2.98	3.28	124
.41 to .46	.51	108	2.99 to 3.36	3.70	125
.47 to .52	.58	109	3.37 to 3.64	4.0	126
.53 to .60	.66	110	3.65 to 4.18	4.6	127
.61 to .68	.75	111	4.19 to 4.63	5.1	128
.69 to .77	.85	112	4.64 to 5.27	5.8	129
.78 to .88	.97	113	5.28 to 6.09	6.7	130
.89 to 1.03	1.10	114	6.10 to 6.73	7.4	131
1.04 to 1.14	1.25	115	6.74 to 7.82	8.6	132
1.15 to 1.27	1.40	116	7.83 to 8.54	9.4	133
1.28 to 1.45	1.60	117	8.55 to 9.55	10.5	134
1.46 to 1.61	1.77	118	9.56 to 10.7	11.8	135
1.62 to 1.82	2.00	119	10.8 to 12.4	13.6	136
1.83 to 1.96	2.15	120	12.5 to 14.0	15.4	137
1.97 to 2.16	2.37	121	14.1 to 15.8	17.4	138
2.17 to 2.42	2.57	122	15.9 to 18.2	20.0	139
2.43 to 2.64	2.90	123	.....	.....	.....

**Trumbull**

.30 to .45	1/2	51	4.55 to 5.45	6	62
.46 to .68	3/4	52	5.46 to 6.36	7	63
.69 to .90	1	53	6.37 to 7.26	8	64
.91 to 1.35	1 1/2	54	7.27 to 8.18	9	65
1.36 to 1.80	2	55	8.19 to 9.09	10	66
1.81 to 2.27	2 1/2	56	9.10 to 10.9	12	67
2.28 to 2.72	3	57	11.0 to 12.7	14	68
2.73 to 3.18	3 1/2	58	12.8 to 14.5	16	69
3.19 to 3.63	4	59	14.6 to 16.3	18	70
3.64 to 4.08	4 1/2	60	16.4 to 18.1	20	71
4.09 to 4.54	5	61	.....	.....	.....

Tested for Group Fusing\*

.30 to .45	1/2	81	2.73 to 3.18	3 1/2	88
.46 to .68	3/4	82	3.19 to 3.63	4	89
.69 to .90	1	83	3.64 to 4.08	4 1/2	90
.91 to 1.35	1 1/2	84	4.09 to 4.54	5	91
1.36 to 1.80	2	85	4.55 to 5.45	6	92
1.81 to 2.27	2 1/2	86	5.46 to 6.36	7	93
2.28 to 2.72	3	87	.....	.....	.....

**Feeder Protection for Heater Units**

Tested for Group Fusing\*

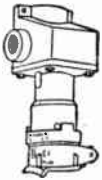
Ampere Rating of Heater	MAXIMUM FEEDER PROTECTION AT		Ampere Rating of Heater	MAXIMUM FEEDER PROTECTION AT	
	250 Volts	600 Volts		250 Volts	600 Volts
.45 to 3.70	60	30	1/2 to 4 1/2	100	60
4.0	100	30			
4.6 to 13.6	100	60	5	7	100
15.4 to 20.0	100	100			

\*TESTED FOR GROUP FUSING TWO OR MORE MOTORS ON ONE FEEDER.—Under certain conditions laid down in rule 808b2, exception 1, of the National Electrical Code, individual branch circuit fuses for each motor may be omitted and two or more motors each with its individual running protective device may be grouped on one feeder, in which case the maximum size of the fuses must not exceed the smallest maximum fuse protection specified in connection with any of the motor running protective devices for that group.

Many running protective devices have been subjected to short-circuit tests to determine the maximum rating of feeder fuses which may be used and still prevent the motor protective device from becoming a fire hazard on short circuit. These figures are usually marked on such devices, also published where such devices are listed.

## Delayed Action Explosion-Proof Arktite Plugs and Receptacles

Schedule CE



Type CES Receptacle

Designed to provide a greater degree of safety in hazardous locations. The purpose of the delayed action is to permit the arc to be broken and the resulting flame, sparks, and hot metal parts to cool below the ignition temperature before the arcing chambers are opened to the atmosphere. An interference on the rotating sleeve prevents complete withdrawal of the plug but it can be withdrawn far enough to interrupt the circuit; and as is the case in all Arktite plugs and receptacles, the resulting arc is broken in the arcing chamber. The plug having been withdrawn as far as possible, the sleeve must be rotated to the new position before the plug can be completely withdrawn.

The delayed action Arktite plug and receptacle takes the place of an interlocked plug and explosion-proof switch. The delayed action Arktite however has this advantage. If the cord or cable is broken through undue strain, the plug will have been withdrawn far enough to break the circuit in the receptacle and the cord is dead at the point where the break occurs.

### Type CES Receptacle Equipment Complete

Includes Condulet, Receptacle, and Receptacle Housing

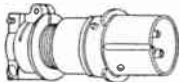
Condulets have 3 hubs, 2 of which are furnished with pipe plugs. Standard finish, cadmium-galvanized.

#### Style 2—Grounded through Shell and Extra Pole

Cat. No.	Each	Size Cond. Hubs In.	Circuit	Phases	Max. H.P.	Max. Amps.	Volts at 60 Cya. A.C.
CES2213	\$23.50	3/4	{2-Wire 3-Pole}	1	{1/2 1 1/2}	7	460 230
CES2214	25.00	3/4	{3-Wire 4-Pole}	3	{1 3}	7	460 230
CES4233	29.50	1 1/4	{2-Wire 3-Pole}	1	3	{30 60}	460 230
CES4234	33.00	1 1/4	{3-Wire 4-Pole}	3	5	{30 60}	460 230

### Type CPH Plugs

With Cable Grip and Rubber Bushing

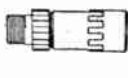


Standard finish, aluminum.

Cat. No.	Each	Circuit	Phases	H.P.	Amps.	Volts	Diam. Cable
CPH7513	\$11.00	{2-Wire 3-Pole}	1	{1/2 1 1/2}	7	460	.500-.625
CPH7613	11.00						.625-.750
CPH7713	11.00						.750-.875
CPH7514	11.75	{3-Wire 4-Pole}	3	1	7	460	.500-.625
CPH7614	11.75						.625-.750
CPH7714	11.75						.750-.875
CPH7533	13.00	2-Wire	1	3	30	460	.500-.625
CPH7633	13.00						.625-.750
CPH7733	13.00						.750-.875
CPH7833	13.00	3-Pole	1	3	60	230	.875-1.000
CPH7933	13.00						1.000-1.188
CPH7534	14.00						.500-.625
CPH7634	14.00	{3-Wire 4-Pole}	3	5	60	230	.625-.750
CPH7734	14.00						.750-.875
CPH7834	14.00						.875-1.000
CPH7934	14.00						1.000-1.188

## Type ECM Explosion-Proof Adjustable Conduit Couplings

1-Inch Adjustment



Size In.	Cat. No.	Each	DIMENS. IN. Length	Diam.
1/2	ECM11	\$5.00	4 3/8-5 3/8	1 1/2
3/4	ECM21	5.50	4 3/8-5 3/8	1 1/2

## Type EYS Sealing Condulets for Hazardous Locations

Schedule CE

In hazardous locations, Class I, the conduit system should be sectionalized by sealing at frequent intervals.

Type EYS is a small, compact sealing Condulet for use in vertical runs of conduit. Taps or splices within the fitting are not permissible, and it is not recommended where there are more than 3 or 4 wires in the conduit. Condulets of the GUA series with sealing cover are more convenient for use in horizontal runs, or where there are 4 or more wires in the conduit, or where it is thought likely that changes may become necessary in the wiring. The cover makes it less difficult to remove the sealing compound.

Condulets are furnished with pipe plug. Standard finish, cadmium-galvanized.

### With Female Hub Top and Bottom

Size In.	Cat. No.	Each	Length INCHES	Width
1/2	EYS1	\$ .65	3 3/32	2 1/4
3/4	EYS2	.80	3 11/16	2 21/32
1	EYS3	1.05	4 3/16	3 3/32
1 1/4	EYS4	1.30	5 1/16	3 31/32
1 1/2	EYS5	1.95	5 1/2	4 17/32
2	EYS6	2.55	6 1/4	5 17/32
2 1/2	EYS7	4.00	7 1/16	6 13/32
3	EYS8	5.00	8 1/2	7 7/8



### With Male Hub Top and Female Hub Bottom

Size In.	Cat. No.	Each	Length INCHES	Width
1/2	EYS16	\$ .65	3 7/32	2 1/4
3/4	EYS26	.80	4 3/8	2 21/32
1	EYS36	1.05	5 1/16	3 3/32
1 1/4	EYS46	1.30	5 7/8	3 31/32
1 1/2	EYS56	1.95	6 3/8	4 17/32
2	EYS66	2.55	7 1/8	5 17/32
2 1/2	EYS76	4.00	8 1/16	6 13/32
3	EYS86	5.00	9 1/2	7 7/8



### With Female Hub Top and Male Hub Bottom

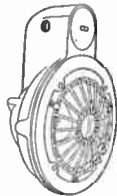
Size In.	Cat. No.	Each	Length INCHES	Width
1/2	EYS17	\$ .65	3 7/32	2 1/4
3/4	EYS27	.80	4 3/8	2 21/32
1	EYS37	1.05	5 1/16	3 3/32
1 1/4	EYS47	1.30	5 7/8	3 31/32
1 1/2	EYS57	1.95	6 3/8	4 17/32
2	EYS67	2.55	7 1/8	5 17/32
2 1/2	EYS77	4.00	8 1/16	6 13/32
3	EYS87	5.00	9 1/2	7 7/8



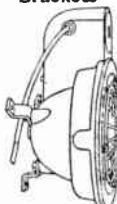
## Type RCDE-8 Explosion-Proof Pit Lights

Recommended for lighting automobile greasing pits and lifts, and for general use in hazardous locations.

When installed in the concrete wall of a pit or in the floor, the unit is practically flush with the concrete, for the door projection is only 3/8 inch when used without a grid, and 1 1/16 inches when used with a grid. For mounting on the surface of a wall, 3 steel Z brackets are supplied.



Without Brackets



With Brackets

### Without Brackets

With Glass Reflector		With Porcelain Enameled Reflector		Housing	Door
Cat. No.	Each	Cat. No.	Each		
41704	\$58.00	41702	\$55.00	Feraloy	Aluminum
41705	67.00	41706	64.00	Feraloy	Brass
41707	58.00	41708	55.00	Aluminum	Aluminum
41709	82.00	41710	79.00	Brass	Brass

### With 3 Z Brackets for Surface Mounting

41711	\$59.00	41712	\$56.00	Feraloy	Aluminum
41713	69.00	41714	66.00	Feraloy	Brass
41715	59.00	41716	56.00	Aluminum	Aluminum
41717	83.00	41718	80.00	Brass	Brass

LAMPS.—100-watt, A23 or PS25; 150-watt, PS25; or 200 watt, PS30.

Lamps are not included in price.



Explosion-Proof Condulet Unions

Schedule CE

Type UNY

Male—For Connecting Conduit to a Condulet

Size In.	Cat. No.	Each	DIMENS., In. Length	In. Diam.
1/2	UNY1M2	\$ .50	1 15/16	1 3/8
3/4	UNY2M2	.65	2 1/16	1 5/8
1	UNY3M2	.95	2 3/16	1 13/16
1 1/4	UNY4M2	1.90	2 5/16	2 5/8
1 1/2	UNY5M2	2.30	2 5/8	2 7/8
2	UNY6M2	3.65	2 3/4	3 1/2
2 1/2	UNY7M2	5.50	3 7/8	4 3/16
3	UNY8M2	7.30	4 1/8	5



Type UNF

Female—For Connecting Conduit to Conduit

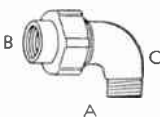
Size In.	Cat. No.	Each	DIMENS., In. Length	In. Diam.
1/2	UNF1M2	\$ .50	1 3/4	1 1/2
3/4	UNF2M2	.65	1 3/4	1 3/4
1	UNF3M2	.95	1 15/16	2 1/16
1 1/4	UNF4M2	1.90	2	2 3/4



Type UNL

90° Angle—For Connecting Conduit to a Condulet

Male end is given first.



Size In.	Cat. No.	Each	DIMENS., In. Length	A	B	C
3/4-1/2	UNL21M2	\$ 1.40	2 1/8	1 3/4	1 5/8	1 5/8
3/4-3/4	UNL2M2	1.40	2 1/8	1 3/4	1 5/8	1 5/8

Type UNA Couplings

Type UNA is a convenient coupling or union for conduit joints made at angles from 90 to 180 degrees. A single clamping nut provides a union feature as well as easy adjustment to required angles. Not approved as conduit unions for general use.

Male—Box Connectors—Explosion-Proof

For use only if adjacent to a Condulet.



Size In.	Cat. No.	Each	DIMENS., In. Length	Width
1/2	UNA16	\$ 1.45	4	2 11/32
3/4	UNA26	1.75	4 1/2	2 27/32
1	UNA36	2.00	5 1/4	3 13/32



Female—Universal Unions

Size In.	Cat. No.	Each	DIMENS., In. Length	Width
1/2	UNA1	\$ 1.30	3 3/8	2 11/32
3/4	UNA2	1.45	3 7/8	2 27/32
1	UNA3	1.75	4 5/8	3 13/32

Type EL Explosion-Proof Condulet Elbows

45-Degree Female

Size In.	Cat. No.	Each	Dimen. In.
1/2	EL1	\$ .20	1 3/16
3/4	EL2	.25	1 5/16
1	EL3	.30	1 9/16
1 1/4	EL4	.65	1 11/16
1 1/2	EL5	.75	2
2	EL6	1.20	2 1/4
2 1/2	EL7	2.70	2 3/4
3	EL8	3.15	3
3 1/2	EL9	4.95	3 3/16
4	EL10	5.55	3 3/4



90-Degree Male

Size In.	Cat. No.	Each	Dimen. In.
1/2	EL195	\$ .25	1 1/2
3/4	EL295	.35	1 5/8
1	EL395	.45	1 7/8
1 1/4	EL495	.75	2 1/8



90-Degree Female

Size In.	Cat. No.	Each	Dimen. In.
1/2	EL19	\$ .25	1 7/16
3/4	EL29	.35	1 9/16
1	EL39	.45	1 13/16
1 1/4	EL49	.75	2 1/16



90-Degree Male and Female

Size In.	Cat. No.	Each	Dimen. In.
1/2	EL196	\$ .25	1 1/2
3/4	EL296	.35	1 5/8
1	EL396	.45	1 7/8
1 1/4	EL496	.75	2 3/8



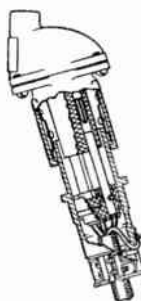
Grounding

The 1928 National Electrical Code requires that in industrial establishments, portable devices having exposed metal parts, such as a metal frame or casing, shall be equipped with a cord containing an additional or safety circuit conductor; shall be equipped with polarized attachment plug; shall have the safety circuit conductor connected to the frame or casing of the appliance and to the safety circuit contact of the plug; and shall have the safety circuit contact of the receptacle adequately grounded.

Arktite plugs and receptacles are made in two styles: Style 1 is for use under ordinary conditions, where the plug sleeve and receptacle housing may serve as part of the safety circuit; Style 2 is for use in hazardous locations, and where conditions exist favorable to corrosion, either at the receptacle or along the conduit between the receptacle and the point of grounding.

Style 1

Arktite Plug with Cable Grip and Receptacle Mounted on Type GEE Condulet With Plug Partially Inserted

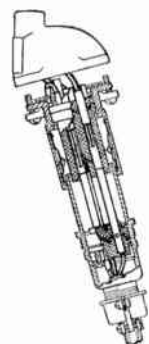


Style 1 plugs and receptacles are not provided with an extra pole for the grounding or safety circuit conductor, because the plug sleeve and receptacle housing serve as the grounding pole. Provision is made for connecting the safety circuit wire to the handle of the plug. If flexible armor is used for the safety circuit conductor, plugs with cable grip only should be used. The safety circuit is then completed from the frame or casing of the portable device through the safety circuit wire or flexible armor to the plug handle, thence through the natural contact of the plug handle with the plug receptacle housing to the conduit system.

The contact between the plug handle and the plug receptacle housing is made more effective than it otherwise would be by the detent springs.

Style 2

Arktite Plug with Rubber Bushing and Receptacle Mounted on Type GEE Condulet With Plug Partially Inserted



Style 2 plugs and receptacles have an extra pole for the grounding or safety circuit conductor. This pole is made extra long so that contact between the plug and receptacle is made first and broken last on this safety circuit contact. By this means any possibility is avoided of the portable device or plug handle being momentarily alive, due to arcing on the live contacts when the circuit is broken. The safety circuit contact in the plug is bonded to the plug handle. That in the receptacle is bonded to the receptacle housing or Condulet.

The safety circuit may be completed from the frame or casing of the portable device, through the extra (safety circuit) wire of the cable, to the safety circuit contact in the plug, to the corresponding safety circuit contact in the receptacle; thence (1) through the conduit system, which must then be considered as a grounding conductor and be made up accordingly; or (2) through a separate copper conductor extending back to an adequate ground connection; or (3) through a separate conductor in parallel with the conduit system. The latter methods (2) or (3) are necessary if conditions exist favorable to corrosion of the conduit.

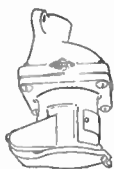
Style 1 plugs fit only Style 1 receptacles. Style 2 plugs fit only Style 2 receptacles.

## Arktite Receptacle Equipment Complete

Includes Condulet, Receptacle and Receptacle Housing

15-Ampere

250-Volt D.C., 600-Volt A.C.



Type QEE, with Spring Door Housing



Type QEE, with Plain Housing

### 2-Wire

Style Housing	Size Conduit Inches	Style 1 2-Wire, 2-Pole		Style 2 2-Wire, 3-Pole	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Spring Door	1/2	QEE11612	\$6.25	QEE12613	\$9.10
	3/4	QEE21612	6.35	QEE22613	9.20
	1	QEE31612	6.45	QEE32613	9.30
Plain	1/2	QEE11312	5.40	QEE12313	8.10
	3/4	QEE21312	5.50	QEE22313	8.20
	1	QEE31312	5.60	QEE32313	8.30

### 3-Wire

Style Housing	Size Conduit Inches	Style 1 3-Wire, 3-Pole		Style 2 3-Wire, 4-Pole	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Spring Door	1/2	QEE11613	\$7.75	QEE12614	\$10.10
	3/4	QEE21613	7.85	QEE22614	10.20
	1	QEE31613	7.95	QEE32614	10.30
Plain	1/2	QEE11313	6.75	QEE12314	9.00
	3/4	QEE21313	6.85	QEE22314	9.10
	1	QEE31313	6.95	QEE32314	9.20

### 4-Wire

Style Housing	Size Conduit Inches	Style 1 4-Wire, 4-Pole		Style 2 4-Wire, 5-Pole	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Spring Door	3/4	QEE21614	\$8.65	QEE22615	\$11.40
	1	QEE31614	8.75	QEE32615	11.50
Plain	3/4	QEE21314	7.65	QEE22315	10.30
	1	QEE31314	7.75	QEE32315	10.40

### 5-Wire

Style Housing	Size Conduit Inches	Style 1 5-Wire, 5-Pole		Style 2	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Spring Door	3/4	QEE21615	\$9.85	Not Made	Not Made
	1	QEE31615	9.95	Not Made	Not Made
Plain	3/4	QEE21315	8.85	Not Made	Not Made
	1	QEE31315	9.85	Not Made	Not Made

Style 1 plugs fit only style 1 receptacles.

Style 2 plugs fit only style 2 receptacles.

Receptacle equipments listed above are complete with either spring door housing or plain housing.

Other receptacle equipments with condulets of the QE series may be made from an assembly of condulets and receptacle housings.

Information furnished upon request.

Cadmium-galvanized is the standard finish on Arktite receptacle equipment; aluminum on plugs.

## Type CP Plugs

With Cable Grip

15-Ampere

250 Volt D.C., 600-Volt A.C.



Without Clamping Nut



With Clamping Nut



With Rubber Bushing and Clamping Nut (Watertight)

### 2-Wire

Description	Diameter Cable Inches	Style 1 2-Wire, 2-Pole		Style 2 2-Wire, 3-Pole	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Without Clamping Nut	.313-.500	CP112	\$3.70	.....	.....
	.500-.750	CP312	3.70	.....	.....
	.438-.750	.....	.....	CP2113	\$6.30
With Clamping Nut	.500-.750	CP412	4.20	.....	.....
	.438-.750	.....	.....	CP2213	6.85
	.688-.938	.....	.....	CP2413	6.85
With Rubber Bushing, No Clamping Nut	.250-.375	CP6312	5.50	.....	.....
	.375-.500	CP6412	5.50	.....	.....
	.500-.625	CP6512	5.50	CP7513	7.80
With Rubber Bushing and Clamping Nut (Watertight)	.250-.375	CP5312	6.00	.....	.....
	.375-.500	CP5412	6.00	.....	.....
	.500-.625	CP5512	6.00	CP8513	8.35

### 3-Wire

Description	Diameter Cable Inches	Style 1 3-Wire, 3-Pole		Style 2 3-Wire, 4-Pole	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Without Clamping Nut	.438-.750	CP113	\$5.00	CP2114	\$6.90
	.688-.938	CP313	5.00	CP2314	6.90
	.875-1.188	CP713	5.00	CP2714	6.90
With Clamping Nut	.438-.750	CP213	5.55	CP2214	7.50
	.688-.938	CP413	5.55	CP2414	7.50
	.875-1.188	CP813	5.55	CP2814	7.50
With Rubber Bushing, No Clamping Nut	.500-.625	CP6513	6.80	CP7514	8.30
	.625-.750	CP6613	6.80	CP7614	8.30
	.750-.875	CP6713	6.80	CP7714	8.30
With Rubber Bushing and Clamping Nut (Watertight)	.500-.625	CP5513	7.35	CP8514	8.90
	.625-.750	CP5613	7.35	CP8614	8.90
	.750-.875	CP5713	7.35	CP8714	8.90

### 4-Wire

Description	Diameter Cable Inches	Style 1 4-Wire, 4-Pole		Style 2 4-Wire, 5-Pole	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Without Clamping Nut	.438-.750	CP114	\$5.60	.....	.....
	.688-.938	CP314	5.60	.....	.....
	.875-1.188	CP714	5.60	.....	.....
With Clamping Nut	.438-.750	CP214	6.20	.....	.....
	.688-.938	CP414	6.20	.....	.....
	.875-1.188	CP814	6.20	.....	.....
With Rubber Bushing, No Clamping Nut	.500-.625	CP6514	7.60	CP7515	\$10.50
	.625-.750	CP6614	7.60	CP7615	10.50
	.750-.875	CP6714	7.60	CP7715	10.50
With Rubber Bushing and Clamping Nut (Watertight)	.500-.625	CP5514	8.20	CP8515	11.45
	.625-.750	CP5614	8.20	CP8615	11.45
	.750-.875	CP5714	8.20	CP8715	11.45

### 5-Wire

Description	Diameter Cable Inches	Style 1 5-Wire, 5-Pole		Style 2	
		Mfr's No.	Price Each	Mfr's No.	Price Each
Without Clamping Nut	.500-.875	CP1115	\$7.15	Not Made	Not Made
	.....	.....	.....	.....	.....
With Clamping Nut	.500-.875	CP1215	8.10	Not Made	Not Made
	.....	.....	.....	.....	.....
With Rubber Bushing, No Clamping Nut	.500-.625	CP6515	8.85	Not Made	Not Made
	.625-.750	CP6615	8.85	Not Made	Not Made
	.750-.875	CP6715	8.85	Not Made	Not Made
With Rubber Bushing and Clamping Nut (Watertight)	.500-.625	CP5515	9.80	Not Made	Not Made
	.625-.750	CP5615	9.80	Not Made	Not Made
	.750-.875	CP5715	9.80	Not Made	Not Made

Style 1 plugs fit only style 1 receptacles.

Style 2 plugs fit only style 2 receptacles.

Cadmium-galvanized is the standard finish on Arktite receptacle equipment; aluminum on plugs.

**Arktite Receptacle Equipment Complete**

Includes Condulet, Adapter, Receptacle and Receptacle Housing

**30-Ampere**

250-Volt D.C., 600-Volt A.C.



Type AJA, with Spring Door Housing



Type AJA, with Plain Housing

**2-Wire**

Style 1  
2-Wire, 2-Pole

Style 2  
2-Wire, 3-Pole

Style Housing	Size Conduit	Mfr's. No.	Price Each	Mfr's. No.	Price Each
Spring Door	3/4	AJA21632	\$15.40	AJA22633	\$17.20
		AJA31632	15.50	AJA32633	17.30
Plain	3/4	AJA21332	14.40	AJA22333	16.20
	1	AJA31332	14.50	AJA32333	16.30

**3-Wire**

Style 1  
3-Wire, 3-Pole

Style 2  
3-Wire, 4-Pole

Spring Door	1	AJA31633	\$15.80	AJA32634	\$18.10
	1 1/4	AJA41633	15.90	AJA42634	18.20
Plain	1	AJA31333	14.80	AJA32334	16.85
	1 1/4	AJA41333	14.90	AJA42334	16.95

**4-Wire**

Style 1  
4-Wire, 4-Pole

Style 2

Spring Door	1	AJA31634	\$16.65	Not Made	
	1 1/4	AJA41634	16.75	Not Made	
Plain	1	AJA31334	15.40	Not Made	
	1 1/4	AJA41334	15.50	Not Made	

**Type CP Plugs With Cable Grip**

**30-Ampere**

250 Volt D.C., 600 Volt A.C.



Without Clamping Nut



With Clamping Nut



With Rubber Bushing and Clamping Nut (Watertight)

Description	Diameter Cable Inches	Style 1		Style 2	
		2-Wire, 2-Pole	Price Each	2-Wire, 3-Pole	Price Each
Without Clamping Nut	500-.875	CP132	\$6.00	CP2133	\$7.55
	750-1.188	CP332	6.00	CP2333	7.55
With Clamping Nut	500-.875	CP232	6.75	CP2233	8.30
	750-1.188	CP432	6.75	CP2433	8.30
With Rubber Bushing, No Clamping Nut	500-.625	CP6532	8.05	CP7533	9.30
	625-.750	CP6632	8.05	CP7633	9.30
With Rubber Bushing and Clamping Nut (Watertight)	750-.875	CP6732	8.05	CP7733	9.30
	500-.625	CP5532	8.80	CP8533	10.05
	625-.750	CP5632	8.80	CP8633	10.05
	750-.875	CP5732	8.80	CP8733	10.05

Style 1 plugs fit only style 1 receptacles.  
Style 2 plugs fit only style 2 receptacles.

Receptacle equipments listed above are complete with either spring door housing or plain housing. Other receptacle equipments with Condulets of the QE series may be made from an assembly of Condulets and receptacle housings.

Information furnished upon request.

Cadmium-galvanized is the standard finish on Arktite receptacle equipments; aluminum on plugs.

**Type CP Plugs**

With Cable Grip  
**30-Ampere**

250 Volt D.C., 600 Volt A.C.

**3-Wire**

Description	Diameter Cable Inches	Style 1		Style 2	
		3-Wire, 3-Pole	Price Each	3-Wire, 4-Pole	Price Each
Without Clamping Nut	500-.875	CP133	\$6.35		
	750-1.188	CP333	6.35		
With Clamping Nut	500-.875	CP233	7.10		
	750-1.188	CP433	7.10		
With Rubber Bushing, No Clamping Nut	500-.625	CP6533	8.50	CP7534	\$10.20
	625-.750	CP6633	8.50	CP7634	10.20
With Rubber Bushing and Clamping Nut (Watertight)	750-.875	CP6733	8.50	CP7734	10.20
	500-.625	CP5533	9.25	CP8534	11.00
	625-.750	CP5633	9.25	CP8634	11.00
	750-.875	CP5733	9.25	CP8734	11.00

**4-Wire**

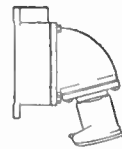
Description	Diameter Cable Inches	Style 1		Style 2	
		4-Wire, 4-Pole	Price Each	4-Wire, 4-Pole	Price Each
Without Clamping Nut	688-1.000	CP134	\$7.25	Not Made	
	938-1.469	CP334	7.25	Not Made	
With Clamping Nut	688-1.000	CP234	8.10	Not Made	
	938-1.469	CP434	8.10	Not Made	
With Rubber Bushing, No Clamping Nut	500-.625	CP6534	9.45	Not Made	
	625-.750	CP6634	9.45	Not Made	
With Rubber Bushing and Clamping Nut (Watertight)	750-.875	CP6734	9.45	Not Made	
	500-.625	CP5534	10.30	Not Made	
	625-.750	CP5634	10.30	Not Made	
	750-.875	CP5734	10.30	Not Made	

**Arktite Receptacle Equipment Complete**

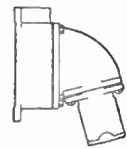
Includes Condulet, Adapter, Receptacle and Receptacle Housing

**60-Ampere**

250 Volt D.C., 600 Volt A.C.



Type AJA, with Spring Door Housing



Type AJA, with Plain Housing

**2-Wire**

Style 1  
2-Wire, 2-Pole

Style 2  
2-Wire, 3-Pole

Style Housing	Size Conduit	Mfr's. No.	Price Each	Mfr's. No.	Price Each
Spring Door	1 1/4	AJA41662	\$16.80	AJA42663	\$19.00
	1 1/2	AJA51662	16.90	AJA52663	19.10
Plain	1 1/4	AJA41362	15.55	AJA42363	17.75
	1 1/2	AJA51362	15.65	AJA52363	17.85

**3-Wire**

Style 1  
3-Wire, 3-Pole

Style 2  
3-Wire, 4-Pole

Spring Door	1 1/4	AJA41663	\$17.10	AJA42664	\$20.25
	1 1/2	AJA51663	17.20	AJA52664	20.35
Plain	1 1/4	AJA41363	15.85	AJA42364	18.85
	1 1/2	AJA51363	15.95	AJA52364	18.95

**4-Wire**

Style 1  
4-Wire, 4-Pole

Style 2

Spring Door	1 1/2	AJA51664	\$18.65	Not Made	
Plain	1 1/2	AJA51364	17.25	Not Made	

Style 1 plugs fit only style 1 receptacles.  
Style 2 plugs fit only style 2 receptacles.

Cadmium-galvanized is the standard finish on Arktite receptacle equipment; aluminum on plugs.

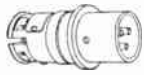


## Type CP Plugs

With Cable Grip

60-Ampere

250 Volts D.C., 600 Volts A.C.



Without Clamping Nut



With Clamping Nut



With Rubber Bushing and Clamping Nut (Watertight)

2-Wire

Description	Diameter Cable Inches	Style 1 2-Wire, 2-Pole		Style 2 2-Wire, 3-Pole	
		Mfr's. No.	Price Each	Mfr's. No.	Price Each
Without Clamping Nut	.750-1.188	CP162	\$8.00	CP2163	\$8.65
	1.188-1.813	CP362	8.00	CP2363	8.65
With Clamping Nut	.750-1.188	CP262	8.85	CP2263	9.50
	1.188-1.813	CP462	8.85	CP2463	9.50
With Rubber Bushing, No Clamping Nut	.500-.625	CP6562	12.50	CP7563	13.50
	.625-.750	CP6662	12.50	CP7663	13.50
	.750-.875	CP6762	12.50	CP7763	13.50
With Rubber Bushing and Clamping Nut (Watertight)	.500-.625	CP5562	13.35	CP8563	14.35
	.625-.750	CP5662	13.35	CP8663	14.35
	.750-.875	CP5762	13.35	CP8763	14.35

3-Wire

Description	Diameter Cable Inches	Style 1 3-Wire, 3-Pole		Style 2 3-Wire, 4-Pole	
		Mfr's. No.	Price Each	Mfr's. No.	Price Each
Without Clamping Nut	.750-1.188	CP163	\$8.15	.....	.....
	1.188-1.813	CP363	8.15	.....	.....
With Clamping Nut	.750-1.188	CP263	9.00	.....	.....
	1.188-1.813	CP463	9.00	.....	.....
With Rubber Bushing, No Clamping Nut	.500-.625	CP6563	12.75	.....	.....
	.625-.750	CP6663	12.75	CP7664	\$14.60
	.750-.875	CP6763	12.75	CP7764	14.60
With Rubber Bushing and Clamping Nut (Watertight)	.500-.625	CP5563	13.60	.....	.....
	.625-.750	CP5663	13.60	CP8664	15.45
	.750-.875	CP5763	13.60	CP8764	15.45

4-Wire

Description	Diameter Cable Inches	Style 1 4-Wire, 4-Pole		Style 2	
		Mfr's. No.	Price Each	Mfr's. No.	Price Each
Without Clamping Nut	.938-1.313	CP164	\$9.15	Not Made	.....
	1.313-2.063	CP364	9.15	Not Made	.....
With Clamping Nut	.938-1.313	CP264	10.15	Not Made	.....
	1.313-2.063	CP464	10.15	Not Made	.....
With Rubber Bushing, No Clamping Nut	.625-.750	CP6664	13.85	Not Made	.....
	.750-.875	CP6764	13.85	Not Made	.....
	.875-1.000	CP6864	13.85	Not Made	.....
With Rubber Bushing and Clamping Nut (Watertight)	.625-.750	CP5664	14.85	Not Made	.....
	.750-.875	CP5764	14.85	Not Made	.....
	.875-1.000	CP5864	14.85	Not Made	.....

Style 1 plugs fit only style 1 receptacles.

Style 2 plugs fit only style 2 receptacles.

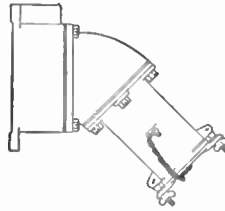
Cadmium-galvanized is the standard finish on Arktite receptacle equipment; aluminum on plugs.

## Arktite Receptacle Equipment Complete

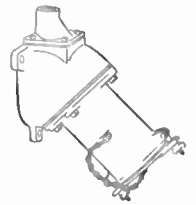
Schedule CR

100-Ampere

250 Volts D.C.  
600 Volts, A.C.



Type AJA  
Includes Condulet,  
Adapter, Receptacle,  
and Receptacle Housing



Type AJ  
Includes Condulet,  
Receptacle, Receptacle  
Housing, and Hub Plate

Type AJA Condulet is square, and can therefore be mounted with hub at top, bottom, right or left.

Style 1—grounded through shell.

Style 2—grounded through shell and extra pole.

Style 1 plugs fit only style 1 receptacles.

Style 2 plugs fit only style 2 receptacles.

2-Wire

Description	Size In.	Style 1 2-Wire, 2-Pole		Style 2 2-Wire, 3-Pole	
		Cat. No.	Each	Cat. No.	Each
Type AJA Watertight	1½	AJA51102	\$39.70	AJA52103	\$49.70
	2	AJA61102	39.80	AJA62103	49.80
Type AJ, Non-Watertight	1½	AJ581102	33.75	AJ582103	43.75
	2	AJ681102	33.85	AJ682103	43.85

3-Wire

Description	Size In.	Style 1 3-Wire, 3-Pole		Style 2 3-Wire, 4-Pole	
		Cat. No.	Each	Cat. No.	Each
Type AJA Watertight	1½	AJA51103	\$40.40	AJA52104	\$51.40
	2	AJA61103	40.50	AJA62104	51.50
Type AJ, Non-Watertight	1½	AJ581103	34.45	AJ582104	45.45
	2	AJ681103	34.55	AJ682104	45.55

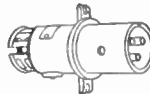
Other styles and sizes of conduit hub plates of the YYP8 series can be substituted for the ones listed with Type AJ at the difference in the list prices.

## Arktite Plugs with Cable Grip

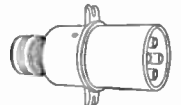
Schedule CR

100-Ampere

250 Volts D.C.  
600 Volts A.C.



Without Rubber Bushing



With Rubber Bushing (Watertight)

Style 1—grounded through shell.  
Style 2—grounded through shell and extra pole.  
Style 1—plugs fit only style 1 receptacles.  
Style 2—plugs fit only style 2 receptacles.

2-Wire

Description	Diameter Cable Inches	Style 1 2-Wire, 2-Pole		Style 2 2-Wire, 3-Pole	
		Cat. No.	Each	Cat. No.	Each
Without Rubber Bushing	.938 to 1.469	CP1102	\$18.80	CP21103	\$23.60
	1.313 to 2.063	CP3102	18.80	CP23103	23.60
With Rubber Bushing (Watertight)	.875 to 1.000	CP58102	25.70	CP88103	29.00
	1.000 to 1.188	CP59102	25.70	CP89103	29.00
	1.188 to 1.375	CP51102	25.70	CP81103	29.00
	1.375 to 1.625	CP51302	25.70	CP81303	29.00
	1.625 to 1.875	CP51502	25.70	CP81503	29.00

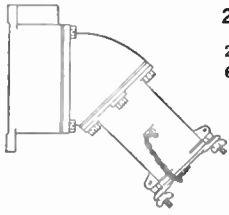
3-Wire

Description	Diameter Cable Inches	Style 1 3-Wire, 3-Pole		Style 2 3-Wire, 4-Pole	
		Cat. No.	Each	Cat. No.	Each
Without Rubber Bushing	9.38 to 1.469	CP1103	\$19.75	.....	.....
	1.313 to 2.063	CP3103	19.75	.....	.....
	1.188 to 1.813	.....	.....	CP21104	\$26.00
	1.750 to 2.563	.....	.....	CP23104	26.00
With Rubber Bushing (Watertight)	.875 to 1.000	CP58103	27.00	.....	.....
	1.000 to 1.188	CP59103	27.00	CP89104	33.00
	1.188 to 1.375	CP51103	27.00	CP81104	33.00
	1.375 to 1.625	CP51303	27.00	CP81304	33.00
	1.625 to 1.875	CP51503	27.00	CP81504	33.00

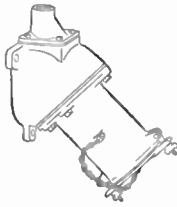
Cadmium-galvanized is the standard finish for Arktite receptacle equipment; aluminum, for plugs.

**Arktite Receptacle Equipment Complete**

Schedule CR



**200-Ampere**  
250 Volts D.C.  
600 Volts A.C.



**Type AJ**  
Includes Conduit, Receptacle, Receptacle Housing, and Hub Plate

**Type AJA**  
Includes Conduit, Adapter, Receptacle, and Receptacle Housing

Type AJA Condulet is square, and can therefore be mounted with hub at top, bottom, right or left.

- Style 1—grounded through shell.
- Style 2—grounded through shell and extra pole.
- Style 1 plugs fit only style 1 receptacles.
- Style 2 plugs fit only style 2 receptacles.

**2-Wire**

Description	Size In.	Style 1 2-Wire, 2-Pole		Style 2 2-Wire, 3-Pole	
		Cat. No.	Each	Cat. No.	Each
Type AJA Watertight	2	AJA61202	\$95.55	AJA62203	\$109.05
	2 1/2	AJA71202	95.65	AJA72203	109.15
Type AJ, Non-Watertight	2	AJ681202	85.75	AJ682203	100.25
	2 1/2	AJ781202	85.85	AJ782203	100.35

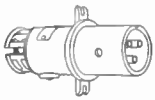
**3-Wire**

Description	Size In.	Style 1 3-Wire, 3-Pole		Style 2 3-Wire, 4-Pole	
		Cat. No.	Each	Cat. No.	Each
Type AJA Watertight	2 1/2	AJA71203	\$104.15	AJA72204	\$123.65
	3	AJA81203	104.25	AJA82204	123.75
Type AJ, Non-Watertight	2 1/2	AJ781203	94.35	AJ782204	113.85

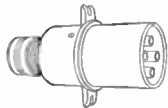
Other styles and sizes of conduit hub plates of the YYP8 series can be substituted for the ones listed with Type AJ at the difference in the list prices.

**Arktite Plugs with Cable Grip**

Schedule CR



**200-Ampere**  
250 Volts D.C.  
600 Volts A.C.



**With Rubber Bushing (Watertight)**

**Without Rubber Bushing**

- Style 1—grounded through shell.
- Style 2—grounded through shell and extra pole.
- Style 1—plugs fit only style 1 receptacles.
- Style 2—plugs fit only style 2 receptacles.

**2-Wire**

Description	Diameter Cable Inches	Style 1 2-Wire, 2-Pole		Style 2 2-Wire, 3-Pole	
		Cat. No.	Each	Cat. No.	Each
Without Rubber Bushing	1.188 to 1.813	CP1202	\$40.00	CP21203	\$50.00
	1.750 to 2.563	CP3202	40.00	CP23203	50.00
With Rubber Bushing (Watertight)	1.000 to 1.188	CP59202	48.00	CP89203	56.00
	1.188 to 1.375	CP511202	48.00	CP811203	56.00
	1.375 to 1.625	CP513202	48.00	CP813203	56.00
	1.625 to 1.875	CP515202	48.00	CP815203	56.00
	1.875 to 2.188	CP517202	48.00	CP817203	56.00
	2.188 to 2.500	CP520202	48.00	CP820203	56.00

**3-Wire**

Description	Diameter Cable Inches	Style 1 3-Wire, 3-Pole		Style 2 3-Wire, 4-Pole	
		Cat. No.	Each	Cat. No.	Each
Without Rubber Bushing	1.188 to 1.813	CP1203	\$45.00	.....	.....
	1.750 to 2.563	CP3203	45.00	.....	.....
	1.313 to 2.063	.....	.....	CP21204	\$58.50
	2.000 to 3.250	.....	.....	CP23204	58.50
With Rubber Bushing (Watertight)	1.000 to 1.188	CP59203	52.50	CP89204	65.50
	1.188 to 1.375	CP511203	52.50	CP811204	65.50
	1.375 to 1.625	CP513203	52.50	CP813204	65.50
	1.625 to 1.875	CP515203	52.50	CP815204	65.50
	1.875 to 2.188	CP517203	52.50	CP817204	65.50
	2.188 to 2.500	CP520203	52.50	CP820204	65.50

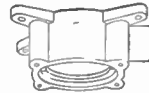
Cadmium-galvanized is the standard finish for Arktite receptacle equipment; aluminum, for plugs.

**QE Series Condulets**

Schedule CR

Take Arktite 15, 30 and 60-ampere receptacle housings; and housings for snap switches and plug receptacles. Cadmium-galvanized is the standard finish. Standard package quantity, 25.

**Type QE**



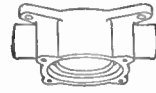
Cat. No.	Each	Size In.	Form
QE110	\$ .90	1/2	10
QE210	1.00	3/4	10
QE310	1.10	1	10
QE120	1.30	1/2	20
QE220	1.40	3/4	20
QE320	1.50	1	20
QE420	1.60	1 1/4	20
QE520	1.70	1 1/2	20

**Type QED**



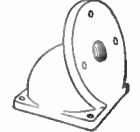
Cat. No.	Each	Size In.	Form
QED110	\$1.45	1/2	10
QED210	1.55	3/4	10
QED310	1.65	1	10
QED120	1.90	1/2	20
QED220	2.00	3/4	20
QED320	2.10	1	20
QED420	2.20	1 1/4	20
QED520	2.30	1 1/2	20

**Type QEC**



Cat. No.	Each	Size In.	Form
QEC110	\$1.00	1/2	10
QEC210	1.10	3/4	10
QEC310	1.20	1	10
QEC120	1.40	1/2	20
QEC220	1.50	3/4	20
QEC320	1.60	1	20
QEC420	1.70	1 1/4	20
QEC520	1.80	1 1/2	20

**Type QEG**



Cat. No.	Each	Size In.	Form
QEG110	\$1.20	1/2	10
QEG210	1.30	3/4	10
QEG310	1.40	1	10
QEG120	1.70	1/2	20
QEG220	1.80	3/4	20
QEG320	1.90	1	20
QEG420	2.00	1 1/4	20
QEG520	2.10	1 1/2	20

**Type QEE**



Cat. No.	Each	Size In.	Form
QEE110	\$1.00	1/2	10
QEE210	1.10	3/4	10
QEE310	1.20	1	10
QEE120	1.45	1/2	20
QEE220	1.55	3/4	20
QEE320	1.65	1	20
QEE420	1.75	1 1/4	20
QEE520	1.85	1 1/2	20

**Type QEK**



Cat. No.	Each	Size In.	Form
QEK110	\$1.00	1/2	10
QEK210	1.10	3/4	10
QEK310	1.20	1	10
QEK120	1.45	1/2	20
QEK220	1.55	3/4	20
QEK320	1.65	1	20
QEK420	1.75	1 1/4	20
QEK520	1.85	1 1/2	20

**Type QEF**



Cat. No.	Each	Size In.	Form
QEF110	\$1.15	1/2	10
QEF210	1.25	3/4	10
QEF310	1.35	1	10
QEF120	1.60	1/2	20
QEF220	1.70	3/4	20
QEF320	1.80	1	20
QEF420	1.90	1 1/4	20
QEF520	2.00	1 1/2	20

**Type QEP**



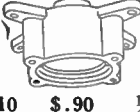
Cat. No.	Each	Size In.	Form
QEP110	\$1.00	1/2	10
QEP210	1.10	3/4	10
QEP310	1.20	1	10
QEP120	1.45	1/2	20
QEP220	1.55	3/4	20
QEP320	1.65	1	20
QEP420	1.75	1 1/4	20
QEP520	1.85	1 1/2	20

**Type QEJ**



Cat. No.	Each	Size In.	Form
QEJ110	\$1.30	1/2	10
QEJ210	1.40	3/4	10
QEJ310	1.50	1	10
QEJ510	1.70	1 1/2	20
QEJ120	1.75	1/2	20
QEJ220	1.85	3/4	20
QEJ320	1.95	1	20
QEJ420	2.05	1 1/4	20
QEJ520	2.15	1 1/2	20

**Type QEA**



Cat. No.	Each	Size In.	Form
QEA110	\$ .90	1/2	10
QEA210	1.00	3/4	10
QEA310	1.10	1	10
QEA120	1.30	1/2	20
QEA220	1.40	3/4	20
QEA320	1.50	1	20
QEA420	1.60	1 1/4	20
QEA520	1.70	1 1/2	20

## Receptacle Housings







For Condulets of the QE Series, and Types AJ,  
AJA and AJB Adapters

Schedule CR

250 Volts D.C., 600 Volts A.C.

These receptacle housings take Arkrite circuit-breaking plugs. They are furnished complete with gasket. Cadmium-galvanized is the standard finish.

### With Spring Door

Size	Capacity	Style 1—Grounded Through Shell			Style 2—Grounded Through Shell and Extra Pole		
		Cat. No.	Each	For Circuits	Cat. No.	Each	For Circuits
 For QE Series Form 10	15-Amp.	QE612	\$5.25	2-Wire, 2-Pole	QE2613	\$8.10	2-Wire, 3-Pole
		QE613	6.75	3-Wire, 3-Pole	QE2614	9.10	3-Wire, 4-Pole
		QE614	7.55	4-Wire, 4-Pole	QE2615	10.30	4-Wire, 5-Pole
		QE615	8.75	5-Wire, 5-Pole	.....	.....	.....
 For 30 and 60-Amp. Adapters	30-Amp.	QE632	\$7.75	2-Wire, 2-Pole	QE2633	\$9.55	2-Wire, 3-Pole
		QE633	8.05	3-Wire, 3-Pole	QE2634	10.35	3-Wire, 4-Pole
		QE634	8.90	4-Wire, 4-Pole	.....	.....	.....
	60-Amp.	QE662	\$8.95	2-Wire, 2-Pole	QE2663	\$11.15	2-Wire, 3-Pole
QE663		9.25	3-Wire, 3-Pole	QE2664	12.40	3-Wire, 4-Pole	
QE664		10.70	4-Wire, 4-Pole	.....	.....	.....	
<b>Plain</b>							
 For QE Series Form 10	15-Amp.	QE312	\$4.40	2-Wire, 2-Pole	QE2313	\$7.10	2-Wire, 3-Pole
		QE313	5.75	3-Wire, 3-Pole	QE2314	8.00	3-Wire, 4-Pole
		QE314	6.55	4-Wire, 4-Pole	QE2315	9.20	4-Wire, 5-Pole
		QE315	7.75	5-Wire, 5-Pole	.....	.....	.....
 For 30 and 60-Amp. Adapters	30-Amp.	QE332	\$6.75	2-Wire, 2-Pole	QE2333	\$8.55	2-Wire, 3-Pole
		QE333	7.05	3-Wire, 3-Pole	QE2334	9.10	3-Wire, 4-Pole
		QE334	7.65	4-Wire, 4-Pole	.....	.....	.....
	60-Amp.	QE362	\$7.70	2-Wire, 2-Pole	QE2363	\$9.90	2-Wire, 3-Pole
QE363		8.00	3-Wire, 3-Pole	QE2364	11.00	3-Wire, 4-Pole	
QE364		9.30	4-Wire, 4-Pole	.....	.....	.....	
<b>Threaded</b>							
 For QE Series Form 10	15-Amp.	QE712	\$4.65	2-Wire, 2-Pole	QE2713	\$7.35	2-Wire, 3-Pole
		QE713	6.00	3-Wire, 3-Pole	QE2714	8.25	3-Wire, 4-Pole
		QE714	6.80	4-Wire, 4-Pole	QE2715	9.45	4-Wire, 5-Pole
		QE715	8.00	5-Wire, 5-Pole	.....	.....	.....
 For 30 and 60-Amp. Adapters	30-Amp.	QE732	\$7.25	3-Wire, 2-Pole	QE2733	\$9.05	2-Wire, 3-Pole
		QE733	7.55	3-Wire, 3-Pole	QE2734	9.60	3-Wire, 4-Pole
		QE734	8.15	4-Wire, 4-Pole	.....	.....	.....
	60-Amp.	QE762	\$8.30	2-Wire, 2-Pole	QE2763	\$10.50	2-Wire, 3-Pole
QE763		8.60	3-Wire, 3-Pole	QE2764	11.60	3-Wire, 4-Pole	
QE764		9.90	4-Wire, 4-Pole	.....	.....	.....	
<b>With Aluminum Cap</b>							
 For QE Series Form 10	15-Amp.	QE812	\$5.30	2-Wire, 2-Pole	QE2813	\$8.20	2-Wire, 3-Pole
		QE813	6.95	3-Wire, 3-Pole	QE2814	9.25	3-Wire, 4-Pole
		QE814	7.90	4-Wire, 4-Pole	QE2815	10.55	4-Wire, 5-Pole
		QE815	9.20	5-Wire, 5-Pole	.....	.....	.....
 For 30 and 60-Amp. Adapters	30-Amp.	QE832	\$8.15	2-Wire, 2-Pole	QE2833	\$9.95	2-Wire, 3-Pole
		QE833	8.65	3-Wire, 3-Pole	QE2834	10.70	3-Wire, 4-Pole
		QE834	9.45	4-Wire, 4-Pole	.....	.....	.....
	60-Amp.	QE862	\$9.70	2-Wire, 2-Pole	QE2863	\$11.90	2-Wire, 3-Pole
QE863		10.10	3-Wire, 3-Pole	QE2864	13.10	3-Wire, 4-Pole	
QE864		11.50	4-Wire, 4-Pole	.....	.....	.....	
<b>With Door</b>							
 For 100 and 200-Amp. Adapters	100-Amp.	AJ102	\$26.50	2-Wire, 2-Pole	AJ2103	\$36.50	2-Wire, 3-Pole
		AJ103	27.20	3-Wire, 3-Pole	AJ2104	38.20	3-Wire, 4-Pole
		AJ104	30.20	4-Wire, 4-Pole	.....	.....	.....
	200-Amp.	AJ202	\$64.00	2-Wire, 2-Pole	AJ2203	\$77.50	2-Wire, 3-Pole
AJ203		72.50	3-Wire, 3-Pole	AJ2204	92.00	3-Wire, 4-Pole	
AJ204		86.80	4-Wire, 4-Pole	.....	.....	.....	



**Type QE Weatherproof Switch Housings**  
For Condulets of the QE Series

Schedule CR

Furnished with adjustable bar.  
Cadmium-galvanized is the standard finish.

**With Spring Door**



Take round base thumb knob snap switches or attachment plug receptacles.

Cat. No.	Each	Size	Std. Pkg.
QE1096	\$1.65	Form 10	25
QE2096	2.05	Form 20	25

**With Opening for Switch Key**



Take round base lock snap switches.

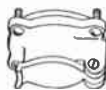
QE	Each	Form	Std. Pkg.
QE108	\$.85	Form 10	25
QE208	1.20	Form 20	25

**Type QE Plug Receptacle Housings**  
For Condulets of the QE Series

Schedule CR

Cadmium-galvanized is the standard finish. This is necessary in order to insure a perfect ground connection between all metal parts in the grounding or safety circuit.

**Take Type BP 30-Ampere, 250-Volt A. C. Plugs†**



With Spring Door



Plain



Threaded



With Aluminum Cap

**2-Pole**

Furnished with 30-amp., 250-volt a.c. receptacle BR302. Threaded housings are also furnished with gaskets.

Cat. No.	Each	Style	Size	Std. Pkg.
QE6302	\$4.60	With Spring Door.....	Form 10	25
QE 302	3.00	Plain.....	Form 10	25
QE7302	3.20	Threaded.....	Form 10	25
QE8302	4.15	With Brass Cap.....	Form 10	25

**3-Pole**

Furnished with 30-amp., 250-volt a.c. receptacle BR303. Threaded housings are also furnished with gaskets.

QE	Each	Style	Form	Std. Pkg.
QE6303	\$5.30	With Spring Door.....	Form 10	25
QE 303	3.50	Plain.....	Form 10	25
QE7303	3.75	Threaded.....	Form 10	25
QE8303	5.10	With Brass Cap.....	Form 10	25

**Take Type RQ 30-Ampere, 250-Volt Plugs**



With Spring Door



Plain

**2-Pole**

Furnished with 30-amp., 250-volt receptacle RQH302.

QE	Each	Style	Form	Std. Pkg.
QE1066	\$3.60	With Spring Door.....	Form 10	25
QE 106	2.80	Plain.....	Form 10	25

**3-Pole**

Furnished with 30-amp., 250-volt receptacle RQH303.

QE	Each	Style	Form	Std. Pkg.
QE2066	\$5.10	With Spring Door.....	Form 20	25
QE 206	4.10	Plain.....	Form 20	25

†Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

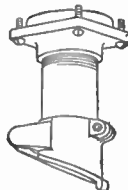
Type BP plugs listed on another page are for use with all of the receptacles listed above.

**Type QE Plug Receptacle Housings**  
For Condulets of the QE Series

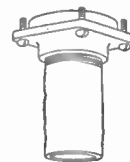
Schedule CR

Cadmium-galvanized is the standard finish. This is necessary in order to insure a perfect ground connection between all metal parts in the grounding or safety circuit.

**Take Type BP 50-Ampere Electric Vehicle Charging Plugs**



With Spring Door



Plain

**2-Pole**

Furnished with 2-pole, 50-amp., 125-volt receptacle BR50.

Cat. No.	Each	Style	Size	Std. Pkg.
QE1076	\$9.20	With Spring Door.....	Form 10	10
QE 107	7.40	Plain.....	Form 10	10

**Take Type BP 60-Ampere, 600-Volt Plugs**



With Spring Door



Plain



Threaded



With Aluminum Cap

**3-Pole**

Furnished with 3-pole, 60-amp., 600-volt receptacle BR6036\*.

Threaded housings are also furnished with gaskets.

QE	Each	Style	Form	Std. Pkg.
QE66036	\$7.95	With Spring Door....	Form 20	10
QE 6036	6.45	Plain.....	Form 20	10
QE76036	6.70	Threaded.....	Form 20	10
QE86036	8.95	With Brass Cap.....	Form 20	10

**Plug Receptacles**

**For Type QE Plug Receptacle Housings**

Schedule CR

**Type RQH**

30 Amperes, 250 Volts

For use with plug receptacle housings QE106, QE206, QE1066 and QE2066.

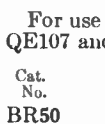


Cat. No.	Each	Type	Std. Pkg.
RQH302	\$2.00	2-Pole	25
RQH303	3.00	3-Pole	25

**Type BR**

50 Amperes, 125 Volts

For use with plug receptacle housings QE107 and QE1076.



Cat. No.	Each	Type	Std. Pkg.
BR50	\$4.90	2-Pole	10

**Type BR**

60 Amperes, 600 Volts\*

For use with plug receptacle housings QE6036, QE66036, QE76036, and QE86036.



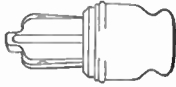
Cat. No.	Each	Type	Std. Pkg.
BR6036	\$5.00	3-Pole	10

\*Underwriters' rules require an approved switch in series with receptacle of this rating.

## Plugs For Use with Plug Receptacles Schedule CR

Type RQ plugs have aluminum handles. Cadmium-galvanized is the standard finish for other plug handles.

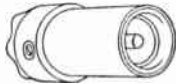
### Type RQ 30 Amperes, 250 Volts



For use with plug receptacles RQH302 and RQH303.

Cat. No.	Each	Type	Std. Pkg.
RQ302	\$3.50	2-Pole	25
RQ303	5.00	3-Pole	25

### Type BP 50 Amperes, 125 Volts



For plug receptacle BR50 (American Electric Vehicle Association Standard).

The BP50 plug takes twin or duplex flexible cable approximately 7/8 inch wide by 1/2 inch thick. The BP53 plug takes No. 6 armored mining machine cable, outside diameter 1 1/8 inches.

BP50	\$6.50	2-Pole	10
BP53	8.50	2-Pole	10

### Type BP, for Flexible Cable 60 Amperes, 600 Volts\*



For receptacle BR6036 in housings QE76036 and QE86036†. Furnished with clamping nut and rubber bushing (watertight). Gasket is also furnished.

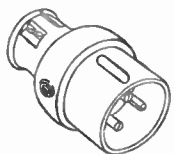
Cat. No.	Each	Type	Diameter Cable Inches	Std. Pkg.
BP846036	\$9.50	3-Pole	1.063 to 1.188	10
BP866036	9.50	3-Pole	.813 to .938	10

### Type BP, for Armored Cable 60 Amperes, 600 Volts\*

For receptacle BR6036 in housings QE76036 and QE86036†. Furnished with clamping nut and tapered split lead sleeve (can be made watertight with sealing compound). Gasket is also furnished.

BP306036	\$9.50	3-Pole	.734 to .813	10
BP326036	9.50	3-Pole	.859 to .906	10
BP336036	9.50	3-Pole	.906 to .953	10
BP346036	9.50	3-Pole	.953 to 1.000	10
BP366036	9.50	3-Pole	1.047 to 1.094	10
BP376036	9.50	3-Pole	1.094 to 1.141	10
BP396036	9.50	3-Pole	1.188 to 1.234	10

### Type BP, for Flexible or Armored Cable 60 Amperes, 600 Volts\*



For receptacle BR6036 in housings QE6036, QE66036, QE76036 and QE86036.

BP46036	\$7.75	3-Pole	.813 to 1.063	10
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\*Underwriters' rules require an approved switch in series with receptacle of this rating.

†Can also be used with housings QE6036 and QE66036.

## Type BRM Plug Receptacle Condulets Schedule CR

30 Amperes, 250 Volts A.C.\*

Take Type BP plugs.

The 2-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2302.

The 3-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2303.

Threaded housings are also furnished with gaskets.

These plug receptacle condulets furnish a compact, convenient and rigid receptacle device. They are especially suitable for semi-permanent or temporary installation either for light or power, as in such installations it is desirable to include a device that will permit the conduit and wiring system to be easily broken and at the same time not sacrifice any of the protective features of rigid or flexible conduit.

These Condulets take plugs for rigid or flexible conduit, or armored or other cable.

The threaded Condulets, when used with a watertight plug or the aluminum cap, are vaporproof. They make excellent devices for installation on locomotives, as they provide means whereby the conduit system can be easily removed or replaced in sections, as is necessary when a locomotive is to receive a thorough overhauling.

The plugs and receptacles are polarized. The receptacle housing is provided with a clip which makes contact with the shell of the plug, effectually grounding the plug through the conduit system.

The plug and receptacle contacts are self-aligning, and the receptacle contacts are completely enclosed in a body of molded insulating material. The prongs of the plug are protected by a steel sleeve.

Cadmium-galvanized is the standard finish for all plugs and receptacles. This insures a perfect ground connection between all metal parts in the grounding or safety circuit.



With Spring Door



Plain

### With Spring Door

Size In.	Std. Pkg.	2-Pole		3-Pole	
		Cat. No.	Each	Cat. No.	Each
1/2	25	BRM61302	\$3.75	BRM62303	\$4.45
3/4	25	BRM62302	3.85	BRM63303	4.55
1	25	BRM63302	3.95		

### Plain

1/2	25	BRM1302	\$2.50	BRM2303	\$3.20
3/4	25	BRM2302	2.60	BRM3303	3.30
1	25	BRM3302	2.70		



Threaded



With Aluminum Cap

### Threaded

1/2	25	BRM71302	\$2.70	BRM72303	\$3.45
3/4	25	BRM72302	2.80	BRM73303	3.55
1	25	BRM73302	2.90		

### With Aluminum Cap

1/2	25	BRM81302	\$3.65	BRM82303	\$4.80
3/4	25	BRM82302	3.75	BRM83303	4.90
1	25	BRM83302	3.85		

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

**Type BRME Plug Receptacle Condulets**

Schedule CR  
30° Angle

30 Amperes, 250 Volts A.C.\*

Take Type BP plugs.  
The 2-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2302.  
The 3-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2303.

Threaded housings are also furnished with gaskets.  
Type BRME Plug Receptacle Condulet is for mounting on the wall or on the frame of a portable machine, by means of two heavy lugs. The Condulet is mounted at such an angle with the surface to which it is attached, that there is no danger of the operator injuring his knuckles when inserting or removing the plug.

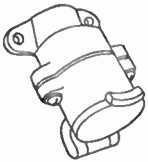
These receptacles furnish a compact, convenient, and rigid receptacle device. They take plugs for rigid or flexible conduit, or armored or other cable.

The threaded Condulets, when used with a watertight plug or the aluminum cap, are vaporproof. They make excellent devices for installation on locomotives, as they provide means whereby the conduit system can be easily removed or replaced in sections, as is necessary when a locomotive is to receive a thorough overhauling.

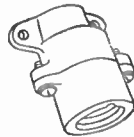
The plugs and receptacles are polarized. The receptacle housing is provided with a clip which makes contact with the shell of the plug, effectually grounding the plug through the conduit system.

The plug and receptacle contacts are self-aligning, and the receptacle contacts are completely enclosed in a body of molded insulating material. The prongs of the plug are protected by a steel sleeve.

Cadmium-galvanized is the standard finish for all plugs and receptacles. This insures a perfect ground connection between all metal parts in the grounding or safety circuit.



With Spring Door



Plain

**With Spring Door**

Size In.	Std. Pkg.	2-Pole		3-Pole	
		Cat. No.	Each	Cat. No.	Each
1/2	25	BRME61302	\$3.75	.....	.....
3/4	25	BRME62302	3.85	BRME62303	\$4.45
1	25	.....	.....	BRME63303	4.55

**Plain**

1/2	25	BRME1302	\$2.50	.....	.....
3/4	25	BRME2302	2.60	BRME2303	\$3.20
1	25	.....	.....	BRME3303	3.30



Threaded



With Aluminum Cap

**Threaded**

1/2	25	BRME71302	\$2.70	.....	.....
3/4	25	BRME72302	2.80	BRME72303	\$3.45
1	25	.....	.....	BRME73303	3.55

**With Aluminum Cap**

1/2	25	BRME81302	\$3.65	.....	.....
3/4	25	BRME82302	3.75	BRME82303	\$4.80
1	25	.....	.....	BRME83303	4.90

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

**Type BP Plugs**

Schedule CR

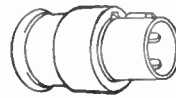
For use with Types BRB, BRD, BRG, BRM, BRME, BRY, and QE plug receptacle housings.

The 30-ampere plugs are arranged for soldered terminals. The 20-ampere plugs are equipped with binding screw terminals. Plugs so equipped with binding screw will not take wires larger than No. 12; consequently, these plugs are rated at 20 amperes. Otherwise, the 20 and 30-ampere plugs are exactly alike.

GROUNDING.—Provision is made for a grounding wire in the cable to connect frame of portable device to shell of plug. Grounding or safety circuit is completed through shell of plug, detent spring, receptacle housing, and conduit system. Detent spring in receptacle has three branches, two of which make contact before and break contact after the main circuit contacts. This method of grounding is N. E. C. standard.

Cadmium-galvanized is the standard finish for all plugs and receptacles. This insures a perfect ground connection between all metal parts in the grounding or safety circuit.

Standard package quantity for all plugs is 25.



**For Flexible Cable**

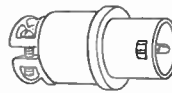
Furnished with clamp for flexible cable. With composition handles (non-watertight).

**Without Clamping Nut**

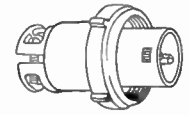
30 Amperes, 250 Volts A.C.\*

Diameter Opening in Cable Clamp Inches	2-Pole		3-Pole	
	Cat. No.	Each	Cat. No.	Each
.500 to .844 (a)	BP32	\$3.60	.....	.....
20 Amperes, 250 Volts A.C.†				
.500 to .844 (a)	BP22	\$3.60	.....	.....

**For Flexible Conductor, Flexible Conduit, or Armored Conductor**



Without Clamping Nut



With Clamping Nut

Furnished with clamp for flexible conductor, flexible conduit, or armored conductor.

With cast aluminum handles (non-watertight).

**Without Clamping Nut**

30 Amperes, 250 Volts A.C.\*

.500 to .875 (b)	BP532	\$2.85	.....	.....
.625 to 1.125 (c)	.....	.....	BP533	\$3.75
20 Amperes, 250 Volts A.C.†				
.500 to .875 (b)	BP522	\$2.85	.....	.....
.625 to 1.125 (c)	.....	.....	BP523	\$3.75

**With Clamping Nut**

30 Amperes, 250 Volts A.C.\*

.500 to .875 (b)	BP732	\$3.35	.....	.....
.625 to 1.125 (c)	.....	.....	BP733	\$4.50
20 Amperes, 250 Volts A.C.†				
.500 to .875 (b)	BP722	\$3.35	.....	.....
.625 to 1.125 (c)	.....	.....	BP723	\$4.50

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

†Can be used on 20-ampere, 125-volt d.c. circuits; or on 20-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

(a) Clamp opening 1/2 to 2 3/8 inch takes most of the 2-wire and 3-wire rubber sheathed, fabric sheathed, and deck cables No. 14 to No. 8.

(b) Clamp opening 1/2 to 7/8 inch takes 3/8 and 1/2-inch flexible conduit, No. 14 to No. 8 two or three-conductor armored cable, and most of the 2-wire and 3-wire rubber sheathed, fabric sheathed, and deck cables No. 14 to No. 8.

(c) Clamp opening 5/8 to 1 1/8 inch takes 1/2 and 3/4-inch flexible conduit, No. 10 to No. 6 three-conductor armored cable, and most of the 3-wire and 4-wire rubber sheathed, fabric sheathed, and deck cables No. 12 to No. 6.



## Type BP Plugs

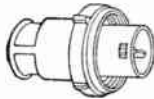
Schedule CR

For use with Types BRB, BRD, BRG, BRM, BRME, BRY, and QE plug receptacle housings. Standard package quantity for all plugs is 25.

### For Rigid Conduit



Without Clamping Nut  
With cast aluminum handles.



With Clamping Nut

### Without Clamping Nut

30 Amperes, 250 Volts A.C.\*

Diam. Conduit In.	2-Pole		3-Pole	
	Cat. No.	Each	Cat. No.	Each
1/2	BP5132	\$2.75	BP5133	\$4.00
3/4	BP5232	2.85	BP5233	4.10
1	BP5332	2.95	BP5333	4.20

20 Amperes, 250 Volts A.C.†

1/2	BP5122	\$2.75	BP5123	\$4.00
3/4	BP5222	2.85	BP5223	4.10
1	BP5322	2.95	BP5323	4.20

### With Clamping Nut (Watertight)

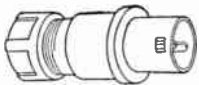
30 Amperes, 250 Volts A.C.\*

1/2	BP7132	\$3.25	BP7133	\$4.75
3/4	BP7232	3.35	BP7233	4.85
1	BP7332	3.45	BP7333	4.95

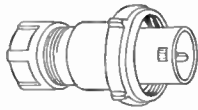
20 Amperes, 250 Volts A.C.†

1/2	BP7122	\$3.25	BP7123	\$4.75
3/4	BP7222	3.35	BP7223	4.85
1	BP7322	3.45	BP7323	4.95

### For Flexible Cable



Without Clamping Nut



With Clamping Nut

Furnished with gland nut and tapered rubber bushing. With cast aluminum handles.

### Without Clamping Nut

30 Amperes, 250 Volts A.C.\*

Diam. Clamp Opening Inches	2-Pole		3-Pole	
	Cat. No.	Each	Cat. No.	Each
.500 to .625	BP6532	\$3.60	BP6533	\$4.35
.625 to .750	BP6632	3.80	BP6633	4.55
.750 to .875	BP6732	4.00	BP6733	4.75
.875 to 1.000	.....	.....	BP6833	4.95

20 Amperes, 250 Volts A.C.†

.500 to .625	BP6522	\$3.60	BP6523	\$4.35
.625 to .750	BP6622	3.80	BP6623	4.55
.750 to .875	BP6722	4.00	BP6723	4.75
.875 to 1.000	.....	.....	BP6823	4.95

### With Clamping Nut (Watertight)

30 Amperes, 250 Volts A.C.\*

.500 to .625	BP8532	\$4.10	BP8533	\$5.10
.625 to .750	BP8632	4.30	BP8633	5.30
.750 to .875	BP8732	4.50	BP8733	5.50
.875 to 1.000	.....	.....	BP8833	5.70

20 Amperes, 250 Volts, A.C.†

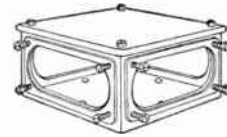
.500 to .625	BP8522	\$4.10	BP8523	\$5.10
.625 to .750	BP8622	4.30	BP8623	5.30
.750 to .875	BP8722	4.50	BP8723	5.50
.875 to 1.000	.....	.....	BP8823	5.70

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

†Can be used on 20-ampere, 125-volt d.c. circuits; or on 20-ampere, 250-volt d.c. circuits if circuit is broken before plug is withdrawn.

## RS Series Condulets

Schedule CR



Cadmium-galvanized finish. Furnished with cast feraloy cover, gasket and screws. The use of these Condulets provides an easy method of tapping a conduit system, where a Condulet body of this series has been installed in the line, by removing the blank plates and substituting plates with the desired sizes of hubs. Cover, hub plates, and blank side plates are gasketed, making the Condulet watertight.

Cat. No.	Each	Type	Inside Dimen. Inches	Std. Pkg.
RS 1	\$9.25	RS	8 1/2 x 8 1/2 x 4	10
RSM1	7.85	RSM	8 1/2 x 4 1/2 x 4	10
RSS 1	6.75	RSS	4 1/2 x 4 1/2 x 4	10

## Conduit Hub Plates

Schedule CR



Cast feraloy, cadmium-galvanized finish. For condulets of the RS series. Outside dimensions 8 1/2 x 3 1/2 inches.

### RSP Series, for 8 1/2 x 4-Inch Sides of Types RS and RSM Condulets

Cat. No.	Each	Size In.	With One Hub		Size In.	Std. Pkg.	
			Std. Pkg.	Cat. No.			
RSP1	\$1.00	1/2	40	RSP5	\$1.20	1 1/2	40
RSP2	1.05	3/4	40	RSP6	1.25	2	40
RSP3	1.10	1	40	RSP7	1.40	2 1/2	40
RSP4	1.15	1 1/4	40	RSP8	1.65	3	40

### With Two Hubs

RSP11	\$1.10	1/2	40	RSP54	\$1.55	1 1/2 - 1 1/4	40
RSP22	1.20	3/4	40	RSP55	1.55	1 1/2	40
RSP31	1.30	1 - 1/2	40	RSP62	1.75	2 - 3/4	40
RSP33	1.30	1	40	RSP63	1.75	2 - 1	40
RSP42	1.40	1 1/4 - 3/4	40	RSP64	1.75	2 - 1 1/4	40
RSP44	1.40	1 1/4	40	RSP65	1.75	2 - 1 1/2	40
RSP52	1.55	1 1/2 - 3/4	40	RSP66	1.75	2	40
RSP53	1.55	1 1/2 - 1	40	RSP73	1.95	2 1/2 - 1	40

### With Three Hubs

RSP111	\$1.20	1/2	40	RSP442	\$1.65	1 1/4 - 1 1/4 - 3/4	40
RSP222	1.35	3/4	40	RSP444	1.65	1 1/4	40
RSP331	1.50	1 - 1/2	40	RSP553	1.90	1 1/2 - 1 1/2 - 1	40
RSP333	1.50	1	40	RSP555	1.90	1 1/2	40

### RSMP Series, for 4 1/2 x 4-Inch Sides of Types RSM and RSS Condulets



RSMP series, for types RSM and RSS Condulets. Outside dimensions, 3 1/2 x 3 1/2 inches.

### With One Hub

RSMP1	\$.50	1/2	40	RSMP5	\$.70	1 1/2	40
RSMP2	.55	3/4	40	RSMP6	.75	2	40
RSMP3	.60	1	40	RSMP7	.90	2 1/2	40
RSMP4	.65	1 1/4	40	.....	.....	.....	..

### Side Plates

Cat. No.	Each	Size Inches	Std. Pkg.
RSP0	\$.95	8 1/2 x 4	40
RSMP0	.45	4 1/2 x 4	40

### Cast Covers with Gaskets

Cat. No.	Each	For Bodies	Std. Pkg.
RS00	\$2.00	RS	10
RSM00	1.25	RSM	10
RSS00	.90	RSS	10

**PR Series Junction Condulets**

*Schedule CR*

For use where durable, watertight junction condulets of medium size are required, as in railroad yards and shops. Also suitable for underneath or overhead car wiring installations.

The hubs are so designed as to insure a clearance of at least 3/4 of an inch between the surface wired over and the conduit; therefore, when these condulets are used on car roofs, there is no opportunity for the accumulation of cinders. Hubs are cast solid with the body and have an integral bushing and tapered thread.

The cover overhangs the condulet, and is held in place by 4 heavy brass cap screws. The joint is made watertight by a gasket.

The bottom of the condulet is reinforced at the center to allow drilling and tapping for an extra conduit or for the suspension of a center lamp fixture or car fixture of pedestal design.

Inside diameter, 6 1/8 inches; depth, varies with size.

Cadmium-galvanized is the standard finish.

Furnished with cast feraloy cover and gasket.

Standard package quantity is 10.

**Type PRC**

Cat. No.	Each	*Size Inches
PRC3	\$4.75	1
PRC4	4.95	1 1/4
PRC5	5.15	1 1/2
PRC6	5.55	2

**Type PRT**

Cat. No.	Each	*Size Inches
PRT3	\$4.90	1-1-1
PRT4	5.10	1 1/4-1 1/4-1 1/4
PRT54	5.30	1 1/2-1 1/2-1 1/4
PRT5	5.30	1 1/2-1 1/2-1 1/2
PRT65	5.70	2-2-1 1/2

**Type PRX**

Cat. No.	Each	*Size Inches
PRX31	\$5.10	1-1-1 1/2-1 1/2
PRX32	5.10	1-1-3/4-3/4
PRX3	5.10	1-1-1-1
PRX41	5.30	1 1/4-1 1/4-1 1/2-1 1/2
PRX42	5.30	1 1/4-1 1/4-3/4-3/4
PRX4	5.30	1 1/4-1 1/4-1 1/4-1 1/4
PRX51	5.55	1 1/2-1 1/2-1 1/2-1 1/2
PRX52	5.55	1 1/2-1 1/2-3/4-3/4
PRX53	5.55	1 1/2-1 1/2-1-1
PRX5	5.55	1 1/2-1 1/2-1 1/2-1 1/2
PRX61	6.00	2-2-1 1/2-1 1/2
PRX62	6.00	2-2-3/4-3/4
PRX63	6.00	2-2-1-1

\*Sizes of end hubs, given first; side hubs, given last.

**Type FJC Condulets**

*Schedule CR*

**For Floor Outlets**

Type FJC meets conditions in factories, textile mills, technical schools or printing houses, where there are a number of individual motor driven machines and it is difficult to determine the final and permanent location of these machines when the preliminary layout is made or the conduit is installed.

It is general practice, in using a Type FJC Condulet, to drill the cover and attach a connector for flexible conduit; but rigid conduit can be used, if desired.

The over all dimensions of body exclusive of hubs are: Length 6 3/8 inches; width, 4 3/8 inches; depth, 4 3/16 inches.

Cadmium-galvanized is the standard finish for condulets and cast feraloy covers.

Furnished with cover and gasket.

Standard package quantity is 10.

Size Inches	With Cast Brass Cover		With Cast Feraloy Cover	
	Cat. No.	Each	Cat. No.	Each
1 1/4	FJC4000	\$7.50	FJC400g	\$5.75
1 1/2	FJC5000	7.75	FJC500g	6.00

**Y Series Condulets**

*Schedule CR*

Designed to take wires which will enter grooves or terminals of fuse cutout of the same rating as the condulet.

Hubs are cast solid with and are tangent to back of condulet. Furnished with sheet steel door, cutout fastening plate, bolts and nuts. Cadmium-galvanized, standard finish.

Drilled for seal wire at 10 cents advance in price.

**Type Y**

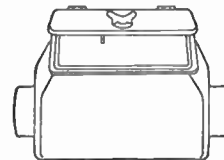


Takes main line fuse cutouts.

**30 Amperes, 250 Volts**

Size Inches	Std. Pkg.	2-Wire		3-Wire	
		Cat. No.	Each	Cat. No.	Each
1/2	15	Y1302	\$2.35	Y2303	\$2.95
3/4	15	Y2302	2.45		

**Type YC**



Takes main line fuse cutouts.

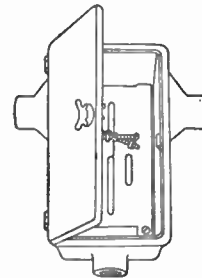
**30 Amperes, 250 Volts**

Size Inches	Std. Pkg.	2-Wire		3-Wire	
		Cat. No.	Each	Cat. No.	Each
1/2	15	YC1302	\$2.50	YC1303	\$3.00
3/4	15	YC2302	2.60	YC2303	3.10
1	10	YC3302	2.70	YC3303	3.20
1 1/4	10	YC4302	2.80	YC4303	3.30

**60 Amperes, 250 Volts**

Size Inches	Std. Pkg.	2-Wire		3-Wire	
		Cat. No.	Each	Cat. No.	Each
3/4	15	YC2602	\$3.80	YC2603	\$4.20
1	10	YC3602	3.90		
1 1/4	10			YC4603	4.40

**Type YS**



Takes main line or single branch fuse cutouts.

**30 Amperes, 250 Volts**

Size Inches	Std. Pkg.	2-Wire		3-Wire	
		Cat. No.	Each	Cat. No.	Each
1/2-1/2-1/2	15	YS1302	\$2.90	YS 1303	\$3.60
3/4-3/4-1/2*	15	YS21302	3.05	YS21303	3.75
3/4-3/4-3/4	15	YS2302	3.05		
1-1-1/2*	10	YS31302	3.20		
1-1-1	10	YS3302	3.20	YS 3303	3.90
1 1/4-1 1/4-1 1/2*	10	YS41302	3.35		
1 1/2-1 1/2-1 1/2*	5			YS51303	4.20

**60 Amperes, 250 Volts**

Size Inches	Std. Pkg.	2-Wire		3-Wire	
		Cat. No.	Each	Cat. No.	Each
1 1/4-1 1/4-3/4*	10			YS42603	\$6.40
1 1/4-1 1/4-1*	10			YS43603	6.40
1 1/2-1 1/2-1 1/4*	5			YS54603	6.60
2-2-1*	5			YS63603	6.80

\*Mains, given first; branch, last.

## YW Series Condulets

Schedule CR

### For Cutouts—Without Hub Plates

Fuse cutouts are installed in a fireproof enclosure. These condulets have gasketed cast ferrous doors with adjustable eyebolt hinges. A tubular gasket is cemented in the door which, when closed, is watertight. Removable conduit hub plates, thoroughly gasketed, are secured to the cast ferrous body by 4 screws. These condulets are watertight, therefore, they are suitable for installation where dust, moisture or excessive gases are present.

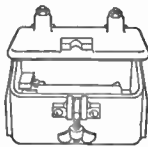
The removable conduit hub plates make it possible to cut these condulets into an existing installation without disturbing the conduit system.

Designed to take wires which will enter the grooves or terminals of the fuse cutout of the same rating as the conduit. The additional space in the hubs is for the passage of extra wires. These extra wires should not be larger than can be properly accommodated in the body of the conduit with the cutout installed.

Cutout fastening plates are slotted so that almost any standard make of cutouts can be mounted thereon by means of the bolts and nuts furnished with the cutout fastening plates.

Cadmium-galvanized is the standard finish.

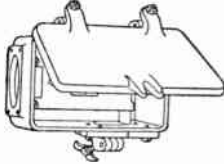
### Type YW



Takes main line fuse cutouts, and removable conduit hub plates or plug receptacle housings. Furnished with cast ferrous door, gaskets and cutout fastening plates.

Cat. No.	Each	RATING Amp.	Volt	No. of Wires	Takes Hub Plate	Takes Housing	Std. Pkg.
YW55302	\$4.50	30	250	2	YYP5	BRY5	15
YW77303	5.45	30	250	2 or 3	YYP7	BRY7	15
YW77602	6.20	60	250	2	YYP7	BRY7	15
YW88603	7.50	60	250	3	YYP8	.....	15
YW881002	9.40	100	250	2	YYP8	.....	10
YW881003	11.30	100	250	3	YYP8	.....	10
YW776016	7.40	30 or 60	600	1	YYP7	.....	15
YW886036	10.40	30 or 60	600	3	YYP8	.....	15

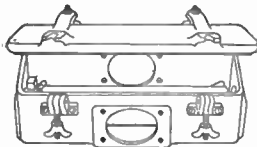
### Type YWS



Takes main line or single branch fuse cutouts.

Cat. No.	Each	RATING Amp.	Volt	No. of Wires	Takes Hub Plates	Takes Housing	Std. Pkg.
YWS55302	\$5.50	30	250	2	YYP5	BRY5	15
YWS77303	6.40	30	250	2 or 3	YYP7	BRY7	15
YWS77602	7.95	60	250	2	YYP7	BRY7	15
YWS88603	9.00	60	250	3	YYP8	.....	15
YWS886036	11.10	30 or 60	600	3	YYP8	.....	15

### Type YWX



Takes double branch fuse cutouts.

Cat. No.	Each	RATING Amp.	Volt	No. of Wires	Takes Hub Plates	Takes Housing	Std. Pkg.
YWX77302	\$7.80	30	250	2 or 3 to 2	YYP7	BRY7	15
YWX77303	8.95	30	250	3	YYP7	BRY7	15
YWX77602	10.85	60	250	2 or 3 to 2	YYP7	BRY7	15
YWX88603	12.05	60	250	3	YYP8	.....	15

## Type BRY Plug Receptacle Housings

Schedule CR

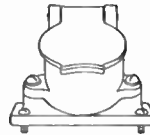
### For Condulets of YW Series; or Any Condulet That Takes Conduit Hub Plates of YYP5 or YYP7 Series

\*30-Ampere, 250-Volt A.C.

Takes Type BP Plugs; 2-pole housings are furnished with 30-ampere, 250-volt receptacle BR302; 3-pole housings with 30-ampere, 250-volt receptacle BR303.

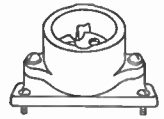
Cadmium-galvanized is the standard finish on all plugs and receptacles. This is necessary in order to insure a perfect ground connection between all metal parts in the grounding or safety circuit.

### With Spring Door



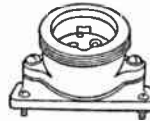
Cat. No.	Each	Size	No. of Poles	Std. Pkg.
BRY56302	\$5.10	BRY5	2	15
BRY76302	5.20	BRY7	2	15
BRY76303	6.30	BRY7	3	15

### Plain



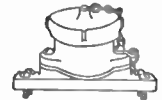
Cat. No.	Each	Size	No. of Poles	Std. Pkg.
BRY5302	\$3.50	BRY5	2	15
BRY7302	3.60	BRY7	2	15
BRY7303	4.50	BRY7	3	15

### Threaded



Cat. No.	Each	Size	No. of Poles	Std. Pkg.
BRY57302	\$3.70	BRY5	2	15
BRY77302	3.80	BRY7	2	15
BRY77303	4.75	BRY7	3	15

### With Aluminum Cap



Cat. No.	Each	Size	No. of Poles	Std. Pkg.
BRY58302	\$4.65	BRY5	2	15
BRY78302	4.75	BRY7	2	15
BRY78303	6.10	BRY7	3	15

\*Can be used on 25-ampere, 125-volt d.c. circuits; or on 30-ampere, 250-volt d.c. circuits, if circuit is broken before plug is withdrawn.

## Z Series Condulets

Schedule CR

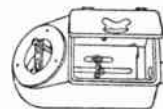
### For Cutouts and Switches

A condulet combining a switch and cutout is desirable for the control of small motors where a starting box or compensator is not required, and for independent control and protection of certain lighting, heater and other special circuits.

Takes round base wiring devices and main line fuse cutouts. Furnished with sheet steel door, adjustable bar, adapting rings and cutout fastening plate. Round base wiring devices are mounted on the sloping surface. The cutout is mounted on a fastening plate which can be removed for installing the cutout and making the electrical connections. The hubs are cast solid with the body and have an integral bushing and tapered thread.

### Type Z

30-Ampere, 250-Volt



Cat. No.	Each	Size In.	No. of Wires	Std. Pkg.
Z1302	\$2.55	1/2	2	15
Z2302	2.65	3/4	2	15
Z3302	2.75	1	2	10
Z1303	3.00	1/2	3	15
Z2303	3.10	3/4	3	15
Z3303	3.20	1	3	10

### Type ZC

30-Ampere, 250-Volt



Cat. No.	Each	Size In.	No. of Wires	Std. Pkg.
ZC1302	\$2.80	1/2	2	15
ZC2302	2.90	3/4	2	15
ZC3302	3.00	1	2	10
ZC1303	3.25	1/2	3	15
ZC2303	3.35	3/4	3	15
ZC3303	3.45	1	3	10

30-Ampere, 600-Volt

Cat. No.	Each	Size In.	No. of Wires	Std. Pkg.
Z13016	\$4.30	1/2	1	15
Z23016	4.40	3/4	1	15
Z33016	4.50	1	1	10
Z33036	7.95	1	3	10

30-Ampere, 600-Volt

Cat. No.	Each	Size In.	No. of Wires	Std. Pkg.
ZC13016	\$4.60	1/2	1	15
ZC23016	4.70	3/4	1	15
ZC33016	4.80	1	1	10
ZC13036	8.00	1/2	3	15
ZC23036	8.10	3/4	3	15



**YK Series Condulets**

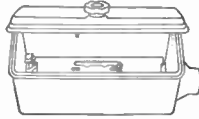
Schedule CR

For Fusible Knife Switches

Furnished with switch fastening plate which permits mounting the switch and making connections before it is installed in Condulet. Door is furnished with spring catch. Hubs are cast solid with body and have integral bushing and tapered thread.

Cadmium-galvanized is the standard finish.

**Type YK Condulets**



**With Sheet Steel Door**

30 Amperes, 250 Volts

Size Inches	Std. Pkg.	2-Pole		3-Pole	
		Cat. No.	Each	Cat. No.	Each
1/2	10	YK1302	\$4.00	YK1303	\$6.20
3/4	10	YK2302	4.10	YK2303	6.30
1	10	YK3302	4.20	YK3303	6.40
1 1/4	10	YK4302	4.30	YK4303	6.50
1 1/2	10	YK5302	4.40	YK5303	6.60

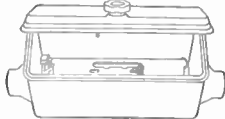
**With Cast Feraloy Door**

60 Amperes, 250 Volts

Size Inches	Std. Pkg.	2-Pole		3-Pole	
		Cat. No.	Each	Cat. No.	Each
3/4	10	YK2602	\$11.40	YK2603	\$12.30
1	10	YK3602	11.50	YK3603	12.40
1 1/4	10	YK4602	11.60	YK4603	12.50
1 1/2	10	YK5602	11.70	YK5603	12.60
2	10	YK6602	11.80	YK6603	12.70

**Type YKC Condulets**

Schedule CR



**With Sheet Steel Door**

30 Amperes, 250 Volts

Size Inches	Std. Pkg.	2-Pole		3-Pole	
		Cat. No.	Each	Cat. No.	Each
1/2	10	YKC1302	\$4.15	YKC1303	\$6.35
3/4	10	YKC2302	4.30	YKC2303	6.50
1	10	YKC3302	4.45	YKC3303	6.65
1 1/4	10	YKC4302	4.60	YKC4303	6.80
1 1/2	10	YKC5302	4.75	YKC5303	6.95

**With Cast Feraloy Door**

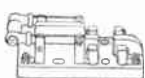
60 Amperes, 250 Volts

Size Inches	Std. Pkg.	2-Pole		3-Pole	
		Cat. No.	Each	Cat. No.	Each
3/4	10	YKC2602	\$11.60	YKC2603	\$12.50
1	10	YKC3602	11.75	YKC3603	12.65
1 1/4	10	YKC4602	11.90	YKC4603	12.80
1 1/2	10	YKC5602	12.05	YKC5603	12.95
2	10	YKC6602	12.20	YKC6603	13.10

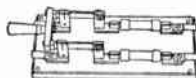
**Knife Switches**

Schedule CR

For Condulets of the YK and YKW Series



Type YKK



Type B

Arranged for 250-volt, N.E.C. cartridge fuses.

Type	Cap. Amp-eres	Std. Pkg.	2-Pole		3-Pole	
			Cat. No.	Each	Cat. No.	Each
YKK	30	10	YKK302	\$2.35	YKK303	\$3.75
YKK	60	10	YKK602	3.50	YKK603	5.25
B	100	..	*31364	.....	*31484	.....
B	200	..	*31366	.....	*31486	.....

\*Specify high clips when ordering. Prices on application.

**YKW Series Condulets**

Schedule CR

For Fusible Knife Switches

A cast feraloy door, tubular gasket, cemented in a groove, adjustable hinges, and an eyebolt and wing nut fastening device, make the condulet watertight.

Condulets for 30 or 60-ampere switches furnished with switch fastening plate; for 100 or 200-ampere switches, with screws for fastening switch directly to condulet.

Cadmium-galvanized is the standard finish.

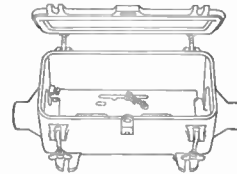
**Type YKW Condulets**



30 Amperes, 250 Volts

Size Inches	Std. Pkg.	2-POLE		3-POLE	
		Cat. No.	Each	Cat. No.	Each
1/2	10	YKW1302	\$9.60	YKW1303	\$10.50
3/4	10	YKW2302	9.70	YKW2303	10.60
1	10	YKW3302	9.80	YKW3303	10.70
1 1/4	10	YKW4302	9.90	YKW4303	10.80
1 1/2	10	YKW5302	10.00	YKW5303	10.90
60 Amperes, 250 Volts					
3/4	10	YKW2602	\$12.50	YKW2603	\$14.50
1	10	YKW3602	12.60	YKW3603	14.60
1 1/4	10	YKW4602	12.70	YKW4603	14.70
1 1/2	10	YKW5602	12.80	YKW5603	14.80
2	10	YKW6602	12.90	YKW6603	14.90
100 Amperes, 250 Volts					
1	5	YKW31002	\$23.00	.....	.....
1 1/4	5	YKW41002	23.15	YKW41003	\$26.90
1 1/2	5	YKW51002	23.30	YKW51003	27.05
2	5	YKW61002	23.45	YKW61003	27.20
2 1/2	5	.....	.....	YKW71003	27.35
200 Amperes, 250 Volts					
1 1/2	5	YKW52002	\$35.15	YKW52003	\$46.80
2	5	YKW62002	35.35	YKW62003	47.00
2 1/2	5	YKW72002	35.55	YKW72003	47.20
3	5	YKW82002	35.75	YKW82003	47.40

**Type YKWC Condulets**



30 Amperes, 250 Volts

Size Inches	Std. Pkg.	2-POLE		3-POLE	
		Cat. No.	Each	Cat. No.	Each
1/2	10	YKWC1302	\$9.75	YKWC1303	\$10.65
3/4	10	YKWC2302	9.90	YKWC2303	10.80
1	10	YKWC3302	10.05	YKWC3303	10.95
1 1/4	10	YKWC4302	10.20	YKWC4303	11.10
1 1/2	10	YKWC5302	10.35	YKWC5303	11.25
60 Amperes, 250 Volts					
3/4	10	YKWC2602	\$12.70	YKWC2603	\$14.70
1	10	YKWC3602	12.85	YKWC3603	14.85
1 1/4	10	YKWC4602	13.00	YKWC4603	15.00
1 1/2	10	YKWC5602	13.15	YKWC5603	15.15
2	10	YKWC6602	13.30	YKWC6603	15.30
100 Amperes, 250 Volts					
1	5	YKWC31002	\$23.25	.....	.....
1 1/4	5	YKWC41002	23.45	YKWC41003	\$27.20
1 1/2	5	YKWC51002	23.65	YKWC51003	27.40
2	5	YKWC61002	23.85	YKWC61003	27.80
2 1/2	5	.....	.....	YKWC71003	27.80
200 Amperes, 250 Volts					
1 1/2	5	YKWC52002	\$35.50	YKWC52003	\$47.15
2	5	YKWC62002	35.75	YKWC62003	47.40
2 1/2	5	YKWC72002	36.00	YKWC72003	47.65
3	5	YKWC82002	36.25	YKWC82003	47.90

## FA Series Safety Switch Condulets

Schedule CR

2-Pole—30-Ampere, 250-Volt or 5-Ampere, 600-Volt  
3-Way—20-Ampere, 125-Volt or 10-Ampere, 250-Volt

These Condulets are furnished with Crouse-Hinds tumbler switch, cover and gasket, and are for use in industrial plants or wherever switches would be subjected to unusually severe conditions. The switches are enclosed in Condulets and are externally operated, affording the switch maximum protection.

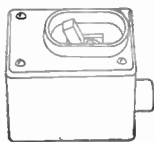
Watertight covers are especially adapted for use out-of-doors or wherever dust, moisture, or gases are present. They have a handle for external operation of the switch.

The non-watertight cover has a rim to protect switch handle which projects through a slot in cover. Handle is self-indicating (furnished with luminous finder at 50¢ extra).

Cadmium-galvanized is the standard finish.

### With Guarded Cover

#### Type FA



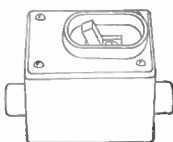
2-Pole

"ON" AND "OFF"

Cat. No.	Each	Size In.	Std. Pkg.
FA129	\$6.25	1/2	10
FA229	6.35	3/4	10
FA329	6.45	1	10

3-Way "ON" AND "OFF"			
Cat. No.	Each	Size In.	Std. Pkg.
FA169	\$6.50	1/2	10
FA269	6.60	3/4	10
FA369	6.70	1	10

#### Type FAC



2-Pole

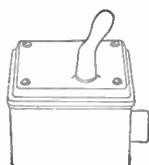
"ON" AND "OFF"

Cat. No.	Each	Size In.	Std. Pkg.
FAC129	\$6.35	1/2	10
FAC229	6.45	3/4	10
FAC329	6.55	1	10

3-Way "ON" AND "OFF"			
Cat. No.	Each	Size In.	Std. Pkg.
FAC169	\$6.60	1/2	10
FAC269	6.70	3/4	10
FAC369	6.80	1	10

### With Watertight Cover

#### Type FA



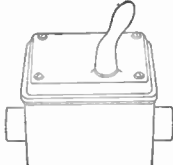
2-Pole

"ON" AND "OFF"

Cat. No.	Each	Size In.	Std. Pkg.
FA128	\$8.90	1/2	10
FA228	9.00	3/4	10
FA328	9.10	1	10

3-Way "ON" AND "OFF"			
Cat. No.	Each	Size In.	Std. Pkg.
FA168	\$9.15	1/2	10
FA268	9.25	3/4	10
FA368	9.35	1	10

#### Type FAC



2-Pole

"ON" AND "OFF"

Cat. No.	Each	Size In.	Std. Pkg.
FAC128	\$9.00	1/2	10
FAC228	9.10	3/4	10
FAC328	9.20	1	10

3-Way "ON" AND "OFF"			
Cat. No.	Each	Size In.	Std. Pkg.
FAC168	\$9.25	1/2	10
FAC268	9.35	3/4	10
FAC368	9.45	1	10

### With Watertight Cover

#### Momentary Contact, Self-Restoring Switch

#### Type FA

2-Pole

NORMALLY "ON"

Cat. No.	Each	Size In.	Std. Pkg.
FA126	\$8.90	1/2	10
FA226	9.00	3/4	10
FA326	9.10	1	10

NORMALLY "OFF"			
Cat. No.	Each	Size In.	Std. Pkg.
FA127	\$8.90	1/2	10
FA227	9.00	3/4	10
FA327	9.10	1	10

3-Way NORMALLY "ON"			
Cat. No.	Each	Size In.	Std. Pkg.
FA167	\$9.15	1/2	10
FA267	9.25	3/4	10
FA367	9.35	1	10

#### Type FAC

2-Pole

NORMALLY "ON"

Cat. No.	Each	Size In.	Std. Pkg.
FAC126	\$9.00	1/2	10
FAC226	9.10	3/4	10
FAC326	9.20	1	10

NORMALLY "OFF"			
Cat. No.	Each	Size In.	Std. Pkg.
FAC127	\$9.00	1/2	10
FAC227	9.10	3/4	10
FAC327	9.20	1	10

3-Way NORMALLY "ON"			
Cat. No.	Each	Size In.	Std. Pkg.
FAC167	\$9.25	1/2	10
FAC267	9.35	3/4	10
FAC367	9.45	1	10

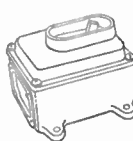
## FA Series Safety Switch Condulets without Hub Plates

Schedule CR

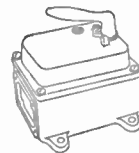
Take conduit hub plates. Furnished with Crouse-Hinds tumbler switch, cover, and gaskets. Cadmium-galvanized is the standard finish.

### 3-Pole Type FA

#### Takes YYP7 Conduit Hub Plates



With Guarded Cover



With Watertight Cover

3-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600 Volt

Cat. No.	Each	Style	Std. Pkg.
FA7739	\$12.00	With Guarded Cover	5
FA7738	15.50	With Watertight Cover	5
FA7736	15.50	With Momentary Contact Self-Restoring, Watertight Cover: Switch Normally "On"	5
FA7737	15.50	Switch Normally "Off"	5

### 2-Gang

#### Takes YYP8 Conduit Hub Plates

2-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600-Volt

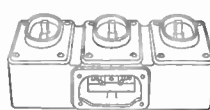
Cat. No.	Each	Style	Std. Pkg.
FA88292	\$12.50	With Guarded Covers	5
FA88282	16.00	With Watertight Covers	5
FA88262	16.00	With Momentary Contact, Self-Restoring, Watertight Covers: Switch Normally "On"	5
FA88272	16.00	Switch Normally "Off"	5

3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt

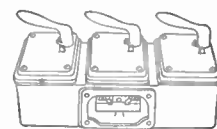
Cat. No.	Each	Style	Std. Pkg.
FA88692	\$13.00	With Guarded Covers	5
FA88682	16.50	With Watertight Covers	5
FA88672	16.50	With Momentary Contact, Self-Restoring, Watertight Cover	5

### 3-Gang

#### Takes YYP8 Conduit Hub Plates



With Guarded Covers



With Watertight Covers

2-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600-Volt

Cat. No.	Each	Style	Std. Pkg.
FA88293	\$17.50	With Guarded Covers	3
FA88283	22.25	With Watertight Covers	3
FA88263	22.25	With Momentary Contact, Self-Restoring, Watertight Covers: Switch Normally "On"	3
FA88273	22.25	Switch Normally "Off"	3

3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt

Cat. No.	Each	Style	Std. Pkg.
FA88693	\$18.25	With Guarded Covers	3
FA88683	23.00	With Watertight Covers	3
FA88673	23.00	With Momentary Contact, Self-Restoring, Watertight Covers	3

### 4-Gang

#### Takes YYP8 Conduit Hub Plates

2-Pole, 30-Ampere, 250-Volt or 5-Ampere, 600-Volt

Cat. No.	Each	Style	Std. Pkg.
FA88294	\$25.00	With Guarded Covers	2
FA88284	31.00	With Watertight Covers	2
FA88264	31.00	With Momentary Contact, Self-Restoring, Watertight Covers: Switch Normally "On"	2
FA88274	31.00	Switch Normally "Off"	2

3-Way, 20-Ampere, 125-Volt or 10-Ampere, 250-Volt

Cat. No.	Each	Style	Std. Pkg.
FA88694	\$26.00	With Guarded Covers	2
FA88684	32.00	With Watertight Covers	2
FA88674	32.00	With Momentary Contact, Self-Restoring, Watertight Covers	2

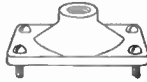
**YYP7 and YYP8 Series Conduit Hub Plates**

Schedule CR

For Condulets of the FA Series

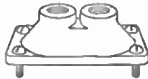
Cast ferrelloy. Cadmium-galvanized is the standard finish.

With One Hub Straight



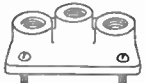
Size In.	Std. Pkg.	YYP7 Series 2 3/4 x 4 1/2 Inches		YYP8 Series 3 1/4 x 4 3/8 Inches	
		Cat. No.	Each	Cat. No.	Each
1/2	15	YYP71	\$.45	YYP81	\$.55
3/4	15	YYP72	.55	YYP82	.65
1	15	YYP73	.65	YYP83	.75
1 1/4	15	YYP74	.75	YYP84	.85
1 1/2	15	YYP75	.85	YYP85	.95
2	15	YYP76	.95	YYP86	1.05
2 1/2	15	.....	....	YYP87	1.15

With Two Hubs Straight



Size In.	Std. Pkg.	YYP7 Series		YYP8 Series	
		Cat. No.	Each	Cat. No.	Each
1/2	15	YYP711	\$.60	YYP811	\$.70
3/4	15	YYP722	.70	YYP822	.80
1	15	YYP733	.80	YYP833	.90
1 1/4	15	YYP744	.90	YYP844	1.00

With Three Hubs Straight



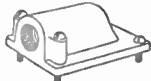
Size In.	Std. Pkg.	YYP7 Series		YYP8 Series	
		Cat. No.	Each	Cat. No.	Each
1/2	15	.....	....	YYP8111	\$.85
3/4	15	.....	....	YYP8222	.95

With One Hub 90° Back or Front



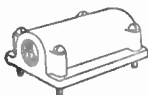
Size In.	Std. Pkg.	YYAP7 Series		YYAP8 Series	
		Cat. No.	Each	Cat. No.	Each
1/2	15	YYAP71	\$.55	YYAP81	\$.65
3/4	15	YYAP72	.65	YYAP82	.75
1	15	YYAP73	.75	YYAP83	.85
1 1/4	15	YYAP74	.85	YYAP84	.95
1 1/2	15	YYAP75	.95	YYAP85	1.05
2	15	.....	....	YYAP86	1.15

With One Hub 90° Left or Right



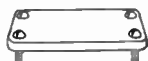
Size In.	Std. Pkg.	YYLP7 Series		YYLP8 Series	
		Cat. No.	Each	Cat. No.	Each
1/2	15	YYLP71	\$.55	YYLP81	\$.65
3/4	15	YYLP72	.65	YYLP82	.75
1	15	YYLP73	.75	YYLP83	.85
1 1/4	15	YYLP74	.85	YYLP84	.95
1 1/2	15	YYLP75	.95	YYLP85	1.05
2	15	.....	....	YYLP86	1.15

With Two Hubs 90° Left and Right



Size In.	Std. Pkg.	YYSP7 Series		YYSP8 Series	
		Cat. No.	Each	Cat. No.	Each
1/2	15	YYSP71	\$.60	YYSP81	\$.70
3/4	15	YYSP72	.70	YYSP82	.80
1	15	YYSP73	.80	YYSP83	.90
1 1/4	15	YYSP74	.90	YYSP84	1.00
1 1/2	15	YYSP75	1.00	YYSP85	1.10
2	15	.....	....	YYSP86	1.20

Blank

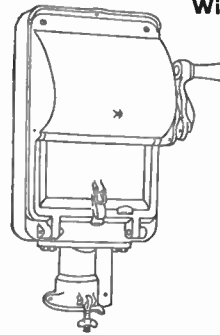


...	15	YYP700	\$.30	YYP800	\$.40
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**Type MKS Interlocking Safety Switches and Plug Receptacle Condulets**

Schedule CR

Without Hub Plates



For use with portable electrical appliances such as welding machines, rivet heaters, motor-driven machines, or for similar purposes where switches and plugs are used.

Consists of a safety switch and a plug receptacle. The receptacle and switch are so interlocked that the plug cannot be withdrawn unless the switch is open, nor can the switch be closed unless the plug is fully inserted.

Takes conduit hub plates and Type DP Interlocking Plugs.

Furnished with fusible knife switch and interlocking plug receptacle with spring door housing.

These condulets are not weather proof. When installed out-of-doors or where exposed to the weather, a weather-proof housing should be built around the condulet.

Cadmium-galvanized is the standard finish.

Switch Arranged for Plug Fuses

Cat. No.	Each	Amp.	RATING		No. of Std. Poles	Pkg.
			Volt			
MKS16328	\$35.00	30	125		2	5
MKS16338	38.60	30	125		3	5

Switch Arranged for Cartridge Fuses

Cat. No.	Each	Amp.	RATING		No. of Std. Poles	Pkg.
			Volt			
MKS1632	\$35.00	30	250		2	5
MKS1633	38.60	30	250		3	5
MKS16335	53.20	30	500 A.C.		3	1
MKS1662	43.00	60	250		2	1
MKS1663	47.20	60	250		3	1
MKS16635	53.20	60	500 A.C.		3	1
MKS16102	78.00	100	250		2	1
MKS16103	89.30	100	250		3	1
MKS161035	92.90	100	500 A.C.		3	1
MKS16202	103.60	200	250		2	1
MKS16203	122.90	200	250		3	1
MKS162035	128.40	200	500 A.C.		3	1

\*2-Pole Switch with 3-Pole Receptacle

Cat. No.	Each	Amp.	RATING		No. of Std. Poles	Pkg.
			Volt			
MKS16323	\$36.00	30	250		2	5
MKS16623	44.00	60	250		2	1
MKS161023	80.70	100	250		2	1
MKS162023	106.60	200	250		2	1

\*For use where Style 2 method of grounding is required. If specified on the order, can be furnished without spring door at the following reductions in prices: 30 ampere, 125 or 250-volt, \$1.25; 30-ampere, 500-volt a.c., \$1.75; 60-ampere, \$1.75; 100-ampere, \$2.50; 200-ampere, \$3.50.

**Conduit Hub Plates**

Schedule CR

Cast ferrelloy; cadmium-galvanized finish.

MF Series—2 3/4 x 6 1/8 Inches

For 60, 100 and 200-Ampere, 250-Volt, and All 500 Volt A.C. Condulets of the MKS Series



Cat. No.	Each	Size In.	Std. Pkg.	One Hub		Two Hubs	
				Cat. No.	Each	Size In.	Std. Pkg.
MF1	\$.95	1/2	15	MF11	\$1.10	1/2	15
MF2	1.05	3/4	15	MF22	1.20	3/4	15
MF3	1.15	1	15	MF33	1.30	1	15
MF4	1.25	1 1/4	15	MF44	1.40	1 1/4	15
MF5	1.35	1 1/2	15	MF55	1.50	1 1/2	15
MF6	1.45	2	15	MF66	1.60	2	15
MF7	3.10	2 1/2	15	MF77	3.35	2 1/2	15
MF8	3.20	3	15	.....	....	....	..
MF9	3.30	3 1/2	15	.....	....	....	..

MK Series—2 5/16 x 5 Inches

For 30-Ampere, 125 and 250-Volt Condulets of the MKS Series

Cat. No.	Each	Size In.	Std. Pkg.	One Hub		Two Hubs	
				Cat. No.	Each	Size In.	Std. Pkg.
MK1	\$.45	1/2	15	MK11	\$.60	1/2	15
MK2	.55	3/4	15	MK22	.70	3/4	15
MK3	.65	1	15	MK33	.80	1	15
MK4	.75	1 1/4	15	MK44	.90	1 1/4	15
MK5	.85	1 1/2	15	MK55	1.00	1 1/2	15

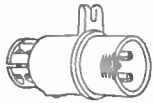


## Type DP Interlocking Plugs

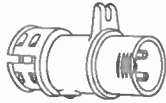
Schedule CR

For Type MKS Condulets

Furnished with clamp for cord, cable, flexible conduit or armored conductor. Has aluminum handles. Aluminum is standard finish.

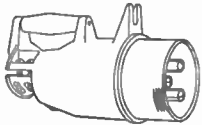


30 to 100-Ampere For Small Cable

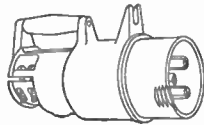


30 to 100-Ampere For Large Cable

RATING Amp. Volt	Outside *Diameter Inches	Std. Pkg.	2-Pole		3-Pole	
			Cat. No.	Each	Cat. No.	Each
30 †250	.500 to 1.875	5	DP132	\$6.50	DP133	\$7.00
30 †250	.750 to 1.188	5	DP332	6.50	DP333	7.00
30 500 AC	.750 to 1.188	5	.....	.....	DP1635	8.00
30 500 AC	1.188 to 1.813	5	.....	.....	DP3635	8.00
60 250	.750 to 1.188	5	DP162	7.50	DP163	8.00
60 250	1.188 to 1.813	5	DP362	7.50	DP363	8.00
60 500 AC	.750 to 1.188	5	.....	.....	DP1635	8.00
60 500 AC	1.188 to 1.813	5	.....	.....	DP3635	8.00
100 250	.938 to 1.469	1	DP1102	20.00	DP1103	22.00
100 250	1.313 to 2.063	1	DP3102	20.00	DP3103	22.00
100 500 AC	.938 to 1.469	1	.....	.....	DP11035	22.00
100 500 AC	1.313 to 2.063	1	.....	.....	DP31035	22.00



200-Ampere For Small Cable



200-Ampere For Large Cable

200 250	1.188 to 1.813	1	DP1202	\$45.00	DP1203	\$50.00
200 250	1.750 to 2.563	1	DP3202	45.00	DP3203	50.00
200 500 AC	1.188 to 1.813	1	.....	.....	DP12035	50.00
200 500 AC	1.750 to 2.563	1	.....	.....	DP32035	50.00

\*Diameter of cable, flexible conduit or armored conductor.

†Use 250-volt plugs with 125-volt receptacles.

## Type ZT Safety Switch Condulets

Schedule CR

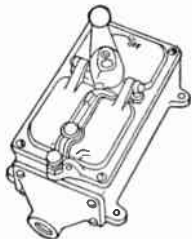
Without Hub Plates

Type ZT is watertight. Cadmium-galvanized is the standard finish.

Takes YYP7 Series Conduit Hub Plates.

Furnished with tumbler switch and gasketed cover with fuse door.

Standard package quantity is 5.



Cat. No.	Each	Maximum Amperes Non-Inductive	Maximum H.P. Motor	No. of Poles	Maximum Line Voltage	No. of Protective Devices
ZT 12	\$20.00	30	*3 D.C., 1/4 A.C.	2	125	**2
ZT 13	25.00	30	1 1/2	3	125	**3
ZT 22	20.00	30	*5 D.C., 2 A.C.	2	250	†2
ZT 23	25.00	30	2	3	250	†3
ZT235	30.00	30	2	3	500 A.C.	†3
ZT237	30.00	20	2	3	600 A.C.	†3
ZT 32	20.00	30	5	2	250	§1
ZT 33	25.00	30	5	3	250	§2
ZT325	20.00	30	5	2	500 A.C.	§1
ZT335	25.00	30	5	3	500 A.C.	§2
ZT327	20.00	20	5	2	600 A.C.	§1
ZT337	25.00	20	5	3	600 A.C.	§2
ZT326	20.00	5	2	2	600 D.C.	§1
ZT 43	25.00	30	5	3	250	°2
ZT435	25.00	30	5	3	500 A.C.	°2
ZT437	25.00	20	5	3	600 A.C.	°2

\*Maximum h.p. when used with d.c. starting box.

\*\*Plug fuses.

†250-volt cartridge fuses.

‡600-volt cartridge fuses.

§Westinghouse plug type thermal cutouts.

°General Electric thermal cutouts.

If specified on the order, Type ZT can be furnished with a key-operated interlock release at \$2.50 extra.

## AL Series Fixture Hanger Condulets

Schedule CR

For Pendent Fixtures—Always Hang Plumb

For Fixtures with 1/2-Inch Stem

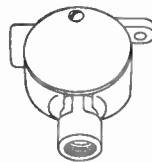
These condulets provide a flexible suspension for electrical fixtures. Fixtures are suspended from a universal joint which assures that fixture will hang plumb. It also prevents breaking fixture stem at point of suspension. This universal joint permits fixture to swing through an angle of about 20° in any direction from the perpendicular.

The cushion fixture hanger is provided with a spring which carries the weight of the fixture and absorbs any shocks due to vibration or other causes.

Standard finish is cadmium-galvanized. In this finish, which does not interrupt safety circuit (ground) between body and pendent, flexible fixture hangers are N.E.C. standard.

### ALA Ball Fixture Hangers

Cat. No.	Each	Size In.	Fixture Wt., Lbs.	Std. Pkg.
ALA1	\$ .65	1/2	.....	25
ALA21	.75	3/4	.....	25



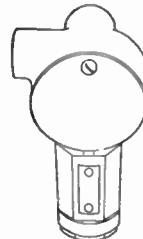
Type ALA Ball Fixture Hanger

### ALA Cushion Fixture Hangers

ALA14	\$1.40	1/2	3 to 6	25
ALA214	1.50	3/4	3 to 6	25
ALA18	1.40	1/2	6 to 12	25
ALA218	1.50	3/4	6 to 12	25
ALA116	1.40	1/2	12 to 24	25
ALA2116	1.50	3/4	12 to 24	25

### ALL Ball Fixture Hangers

ALL1	\$ .75	1/2	.....	25
ALL21	.85	3/4	.....	25



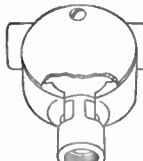
Type ALL Cushion Fixture Hanger

### ALL Cushion Fixture Hangers

ALL14	\$1.50	1/2	3 to 6	25
ALL214	1.60	3/4	3 to 6	25
ALL18	1.50	1/2	6 to 12	25
ALL218	1.60	3/4	6 to 12	25
ALL116	1.50	1/2	12 to 24	25
ALL2116	1.60	3/4	12 to 24	25

### ALC Ball Fixture Hangers

ALC1	\$ .75	1/2	.....	25
ALC21	.85	3/4	.....	25
ALC31	.95	1	.....	10



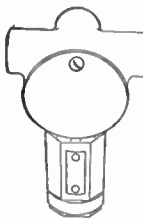
Type ALC Ball Fixture Hanger

### ALC Cushion Fixture Hangers

ALC14	\$1.50	1/2	3 to 6	25
ALC214	1.60	3/4	3 to 6	25
ALC314	1.70	1	3 to 6	10
ALC18	1.50	1/2	6 to 12	25
ALC218	1.60	3/4	6 to 12	25
ALC318	1.70	1	6 to 12	10
ALC116	1.50	1/2	12 to 24	25
ALC2116	1.60	3/4	12 to 24	25
ALC3116	1.70	1	12 to 24	10

### ALT Ball Fixture Hangers

ALT1	\$ .85	1/2	.....	25
ALT21	.95	3/4	.....	25
ALT31	1.05	1	.....	10



Type ALT Cushion Fixture Hanger

### ALT Cushion Fixture Hangers

ALT14	\$1.60	1/2	3 to 6	25
ALT214	1.70	3/4	3 to 6	25
ALT314	1.80	1	3 to 6	10
ALT18	1.60	1/2	6 to 12	25
ALT218	1.70	3/4	6 to 12	25
ALT318	1.80	1	6 to 12	10
ALT116	1.60	1/2	12 to 24	25
ALT2116	1.70	3/4	12 to 24	25
ALT3116	1.80	1	12 to 24	10

**AL Series Threadless Flexible Fixture Hanger Condulets**

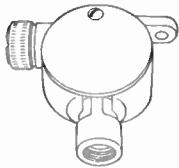
Schedule CR

For Pendent Fixtures—Always Hang Plumb

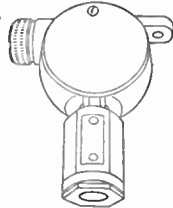
These condulets provide a flexible suspension for electric fixtures. Fixtures are suspended from a universal joint which assures that the fixture will hang plumb. It also prevents breaking fixture stem at point of suspension. This universal joint permits fixture to swing through an angle of about 20° in any direction from the perpendicular.

Standard finish, cadmium-galvanized. In this finish, which does not interrupt safety circuit (ground) between body and pendent, fixture hangers are N.E.C. standard.

**Type ALA**



Ball



Cushion

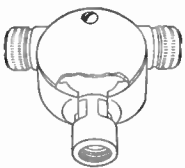
**Ball Hangers**

Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2	25	ALA19	\$ .70	ALA15	\$ .70
3/4-1/2	25	ALA219	.85	ALA215	.85
3/4-3/4	25	ALA229	.95	ALA225	.95

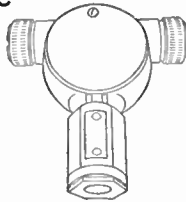
**Cushion Hangers**

For Fixtures Weighing 3 to 6 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2	25	ALA194	\$1.45	ALA154	\$1.45
3/4-1/2	25	ALA2194	1.60	ALA2154	1.60
3/4-3/4	25	ALA2294	1.70	ALA2254	1.70
For Fixtures Weighing 6 to 12 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2	25	ALA198	\$1.45	ALA158	\$1.45
3/4-1/2	25	ALA2198	1.60	ALA2158	1.60
3/4-3/4	25	ALA2298	1.70	ALA2258	1.70
For Fixtures Weighing 12 to 24 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2	25	ALA1916	\$1.45	ALA1516	\$1.45
3/4-1/2	25	ALA21916	1.60	ALA21516	1.60
3/4-3/4	25	ALA22916	1.70	ALA22516	1.70

**Type ALC**



Ball



Cushion

**Ball Hangers**

Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALC19	\$ .85	ALC15	\$ .85
3/4-3/4-1/2	25	ALC219	1.05	ALC215	1.05
1-1-1/2	10	ALC319	1.25	ALC315	1.25
3/4-3/4-3/4	25	ALC229	1.15	ALC225	1.15
1-1-3/4	10	ALC329	1.35	ALC325	1.35

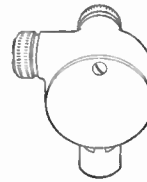
**Cushion Hangers**

For Fixtures Weighing 3 to 6 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALC194	\$1.60	ALC154	\$1.60
3/4-3/4-1/2	25	ALC2194	1.80	ALC2154	1.80
1-1-1/2	10	ALC3194	2.00	ALC3154	2.00
3/4-3/4-3/4	25	ALC2294	1.90	ALC2254	1.90
1-1-3/4	10	ALC3294	2.10	ALC3254	2.10
For Fixtures Weighing 6 to 12 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALC198	\$1.60	ALC158	\$1.60
3/4-3/4-1/2	25	ALC2198	1.80	ALC2158	1.80
1-1-1/2	10	ALC3198	2.00	ALC3158	2.00
3/4-3/4-3/4	25	ALC2298	1.90	ALC2258	1.90
1-1-3/4	10	ALC3298	2.10	ALC3258	2.10
For Fixtures Weighing 12 to 24 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALC1916	\$1.60	ALC1516	\$1.60
3/4-3/4-1/2	25	ALC21916	1.80	ALC21516	1.80
1-1-1/2	10	ALC31916	2.00	ALC31516	2.00
3/4-3/4-3/4	25	ALC22916	1.90	ALC22516	1.90
1-1-3/4	10	ALC32916	2.10	ALC32516	2.10

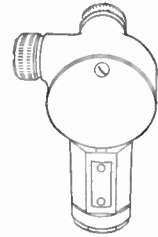
**AL Series Threadless Flexible Fixture Hanger Condulets**

Schedule CR

For Pendent Fixtures—Always Hang Plumb  
Type ALL



Ball



Cushion

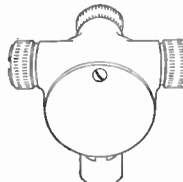
**Ball Hangers**

Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALL19	\$ .85	ALL15	\$ .85
3/4-3/4-1/2	25	ALL219	1.05	ALL215	1.05
3/4-3/4-3/4	25	ALL229	1.15	ALL225	1.15

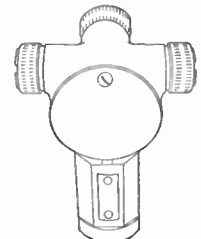
**Cushion Hangers**

For Fixtures Weighing 3 to 6 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALL194	\$1.60	ALL154	\$1.60
3/4-3/4-1/2	25	ALL2194	1.80	ALL2154	1.80
3/4-3/4-3/4	25	ALL2294	1.90	ALL2254	1.90
For Fixtures Weighing 6 to 12 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALL198	\$1.60	ALL158	\$1.60
3/4-3/4-1/2	25	ALL2198	1.80	ALL2158	1.80
3/4-3/4-3/4	25	ALL2298	1.90	ALL2258	1.90
For Fixtures Weighing 12 to 24 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2	25	ALL1916	\$1.60	ALL1516	\$1.60
3/4-3/4-1/2	25	ALL21916	1.80	ALL21516	1.80
3/4-3/4-3/4	25	ALL22916	1.90	ALL22516	1.90

**Type ALT**



Ball



Cushion

**Ball Hangers**

Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2-1/2	25	ALT19	\$1.00	ALT15	\$1.00
3/4-3/4-3/4-1/2	25	ALT219	1.25	ALT215	1.25
1-1-1-1/2	10	ALT319	1.50	ALT315	1.50
3/4-3/4-3/4-3/4	25	ALT229	1.35	ALT225	1.35
1-1-1-3/4	10	ALT329	1.60	ALT325	1.60

**Cushion Hangers**

For Fixtures Weighing 3 to 6 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2-1/2	25	ALT194	\$1.75	ALT154	\$1.75
3/4-3/4-3/4-1/2	25	ALT2194	2.00	ALT2154	2.00
1-1-1-1/2	10	ALT3194	2.25	ALT3154	2.25
3/4-3/4-3/4-3/4	25	ALT2294	2.10	ALT2254	2.10
1-1-1-3/4	10	ALT3294	2.35	ALT3254	2.35
For Fixtures Weighing 6 to 12 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2-1/2	25	ALT198	\$1.75	ALT158	\$1.75
3/4-3/4-3/4-1/2	25	ALT2198	2.00	ALT2158	2.00
1-1-1-1/2	10	ALT3198	2.25	ALT3158	2.25
3/4-3/4-3/4-3/4	25	ALT2298	2.10	ALT2258	2.10
1-1-1-3/4	10	ALT3298	2.35	ALT3258	2.35
For Fixtures Weighing 12 to 24 Pounds					
Size, In. (Pendent Size, Given Last)	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
1/2-1/2-1/2-1/2	25	ALT1916	\$1.75	ALT1516	\$1.75
3/4-3/4-3/4-1/2	25	ALT21916	2.00	ALT21516	2.00
1-1-1-1/2	10	ALT31916	2.25	ALT31516	2.25
3/4-3/4-3/4-3/4	25	ALT22916	2.10	ALT22516	2.10
1-1-1-3/4	10	ALT32916	2.35	ALT32516	2.35

## Ball and Cushion Fixture Hangers

Schedule CR

### Type UNJ Ball Fixture Hangers

For Pendant Fixtures—Always Hang Plumb



Cat. No.	Each	Size Inches	Std. Pkg.
UNJ1308	\$.65	$\frac{1}{2}$ — $\frac{3}{8}$	50
UNJ1	.65	$\frac{1}{2}$ — $\frac{1}{2}$	50
UNJ2308	.75	$\frac{3}{4}$ — $\frac{3}{8}$	50
UNJ21	.75	$\frac{3}{4}$ — $\frac{1}{2}$	50
UNJ2	.75	$\frac{3}{4}$ — $\frac{3}{4}$	50

\*Male threads given first.

### Type UNJC Cushion Fixture Hangers

For Pendant Fixtures



Type UNJC is provided with a spring which carries the weight of the fixture and absorbs any shocks due to vibration or other causes. Has cadmium-galvanized finish.

Cat. No.	Each	Size Inches	Total Wt. of Fixture, Lbs.	Std. Pkg.
UNJC12	\$1.35	$\frac{1}{2}$ — $\frac{1}{2}$	1½ to 3	50
UNJC14	1.35	$\frac{1}{2}$ — $\frac{1}{2}$	3 to 6	50
UNJC18	1.35	$\frac{1}{2}$ — $\frac{1}{2}$	6 to 12	50
UNJC116	1.35	$\frac{1}{2}$ — $\frac{1}{2}$	12 to 24	50

### Type GS Ball Fixture Hangers

For Condulets of the GS Series—Always Hang Plumb

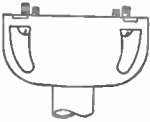


Cat. No.	Each	Std. Pkg.
GS536	\$.55	25

### Type H Cushion Fixture Hangers

Always Hang Plumb

For Form 10 Condulets of the G-H Series—Without Adjustable Bar



Cat. No.	Each	Total Wt. of Fixture, Lbs.	Std. Pkg. Asst'd
H1064	\$.65	2 to 4	25
H1066	.65	4 to 8	25
H1067	.65	8 to 16	25
H1068	.65	16 to 30	25

### Type ARB Ball Fixture Hangers

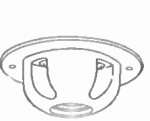
For 4-Inch Outlet Boxes—Always Hang Plumb



Cat. No.	Each	Std. Pkg.
ARB6	\$1.00	25

### Type ARB Cushion Fixture Hangers

For 4-Inch Outlet Boxes—Always Hang Plumb



Cat. No.	Each	Total Wt. of Fixture, Lbs.	Std. Pkg. Asst'd
ARB14	\$1.00	2 to 4	25
ARB 8	1.00	4 to 8	25
ARB10	1.00	8 to 16	25
ARB12	1.00	16 to 30	25

### Type UCY Threaded Fixture Rings

Schedule CR

For Use with Threadless Condulets

Thick Wall

The Type UCY Threaded Fixture Ring not only provides a secure suspension for fixtures, but also makes possible a combination of threadless and threaded hubs in the same conduit. The fixture ring takes the place of the grip ring in the threadless conduit hub, and is secured by the knurled nut. Cadmium-galvanized is the standard finish.

Cat. No.	Each	Size Inches	Std. Pkg.
UCY1	\$.04	$\frac{1}{2}$	200
UCY2	.06	$\frac{3}{4}$	100
UCY3	.08	1	50
UCY4	.15	$1\frac{1}{4}$	25
UCY5	.30	$1\frac{1}{2}$	10
UCY6	.50	2	5

## ET Series Condulets

Schedule CR

Single runs of conduit may be made from these junctions to the desired outlets, where the necessary taps and splices in the wires can be made. The hubs have an integral bushing and tapered thread.

Lugs are provided for anchoring to forms.

Where these condulets are not used, all conduits must be run to an accessible junction box or outlet. Where these condulets are used, junctions in the conduit system may be made at concealed or inaccessible points.

Type ET Short Radius Bend Condulets with lugs are required especially for installing LA Series Condulets in moving picture theatres having very shallow floors. Type ET Short Radius Bend Condulets without lugs are for use with outdoor meters where T connections are required to service conduit.

From the center line of the branch hub of the Type ETE Condulet to the surface wired over is  $1\frac{1}{8}$  inches. The purpose of this offset is to bring the branch hub of the Type ETE Condulet in line with the conduit outlet of certain meter boxes.

Cadmium-galvanized is the standard finish.

### Type ET—Short Radius Bend

Size Inches	Std. Pkg.	With Lugs		Without Lugs	
		Cat. No.	Each	Cat. No.	Each
$\frac{3}{4}$ — $\frac{1}{2}$ — $\frac{1}{2}$	100	ET219	\$.80	ET218	\$.70
$\frac{3}{4}$ — $\frac{3}{4}$ — $\frac{3}{4}$	100	ET229	.85	ET228	.75
*1— $\frac{3}{4}$ — $\frac{3}{4}$	50	ET329	.90	ET328	.80
1—1—1	50	ET339	.95	ET338	.85
*1½—1—1	25	ET439	1.05	ET438	.95

### Type ET—Long Radius Bend

Size Inches	Std. Pkg.	With Lugs		Each
		Cat. No.	Each	
$\frac{1}{2}$ — $\frac{1}{2}$ — $\frac{1}{2}$	50	ET1	\$1.25	
$\frac{3}{4}$ — $\frac{1}{2}$ — $\frac{1}{2}$	50	ET21	1.45	
*1— $\frac{1}{2}$ — $\frac{1}{2}$	50	ET31	1.55	
*1— $\frac{3}{4}$ — $\frac{3}{4}$	25	ET32	1.90	
*1½— $\frac{1}{4}$ —1	25	ET43	2.30	
1½—1½—1½	10	ET4	2.65	
*1½—1½—1½	10	ET54	2.95	
*2—1½—1½	5	ET64	3.30	
*2—1½—1½	5	ET65	3.75	

### Type ETE—Offset Branch Hub

Size Inches	Std. Pkg.	Without Lugs		Each
		Cat. No.	Each	
**1— $\frac{3}{4}$ — $\frac{3}{4}$	50	ETE328	\$1.85	
**1½—1—1	25	ETE438	1.00	
**1½— $1\frac{1}{4}$ — $1\frac{1}{4}$	10	†ETE54	2.95	

### Type EY

Size Inches	Std. Pkg.	With Lugs		Each
		Cat. No.	Each	
$\frac{1}{2}$ — $\frac{1}{2}$ — $\frac{1}{2}$	50	EY1	\$1.05	
*¾— $\frac{1}{2}$ — $\frac{1}{2}$	50	EY21	1.15	
*1— $\frac{1}{2}$ — $\frac{1}{2}$	50	EY31	1.25	
*1— $\frac{3}{4}$ — $\frac{3}{4}$	25	EY32	1.45	
*1½—1—1	25	EY43	1.90	
1½—1½—1½	10	EY4	2.30	
*1½—1½—1½	10	EY54	2.50	
*2—1½—1½	5	EY64	2.70	

### Type ELB

Size Inches	Std. Pkg.	Cat. No.	Each
$\frac{1}{2}$	50	ELB1	\$.75
$\frac{3}{4}$	50	ELB2	1.00
1	50	ELB3	1.25
1½	25	ELB4	1.60
1½	10	ELB5	1.85

\*Size of largest hub is given first and is shown at the bottom in the illustrations.

\*\*Size of branch hub is given first.

†ETE54 has a large radius bend, same as ET54.



**Groundulets**

Schedule CM

**Safety Circuit Equipment**

Cadmium-galvanized is the standard finish for groundulets.

Types GCA and GCD Groundulets are for making a thoroughly secure mechanical and electrical connection between a grounding conductor enclosed in conduit and a water pipe or other grounding electrode. At the same time the grounding conductor and its connections are fully protected from mechanical injury. The conduit itself, as well as the wire contained within it, are electrically connected to each other and to the water pipe.

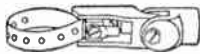
Grounding electrode, 5/8 to 1 inch.

**Type GCA**  
For Threaded Heavy Wall Conduit



Cat. No.	Std. Pkg.	PER 100		Size Conduit Inches	Size Pipe In.	No. of Straps	Std. Pkg.	Car-ton
		Car-ton	Less Car-ton					
GCA172	\$37.50	\$46.90	\$60.00	1/2	*1/2 to 2	1	25	5

**Type GCD—With Angle Adjustment**  
For Threaded Heavy Wall Conduit



Cat. No.	Std. Pkg.	PER 100		Size Conduit Inches	Size Pipe In.	No. of Straps	Std. Pkg.	Car-ton
		Car-ton	Less Car-ton					
GCD172	\$37.50	\$46.90	\$60.00	1/2	*1/2 to 2	1	25	5
GCD22	85.00	106.25	136.00	3/4	*1/2 to 2	2	20	5
GCD32	135.00	148.50	216.00	1	*1/2 to 2	3	10	5

\*For use also on lead pipe in sizes 1/2 and 3/4-inch Grades AA and AAA, and 1-inch Grades A, AA and AAA.

**Type GCH—With Angle Adjustment**

Type GCH Groundulets are attached to a water pipe by rigid clamp jaws, insuring permanent and positive contact. A single substantial bolt holds the assembly in firm contact with both the water pipe and the grounding conductor.

Grounding electrode, 1/2 to 1 inch.

For Threaded Heavy Wall Conduit



GCH1	\$37.50	\$46.90	\$60.00	1/2	1/2 to 1	..	25	5
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For No. 8 or No. 6 Bare Armored Ground Conduit



GCH08	\$26.25	\$32.80	\$42.00	1/2	1/2 to 1	..	25	5
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For No. 4 Ground Conductor

GCH91	\$26.25	\$32.80	\$42.00	1/2	1/2 to 1	..	25	5
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**Type GCE—With Threaded Plug Terminal**  
For Threaded Heavy Wall Conduit



For use where it is desired to have a threaded connection with the water pipe. Cast fer alloy.

GCE1472	\$43.80	\$48.20	\$53.00	1/2	3/4	..	50	10
GCE242	51.55	56.70	62.40	3/4	3/4	..	50	10
GCE342	59.25	65.15	71.65	1	3/4	..	25	5

**Groundulet Jumpers**

For bonding from one conduit to another or from switch to conduit. Fit groundulet bushings 1/2 to 6 inches.

With 2 Soldering Lugs and No. 8 Jumper Cable



Cat. No.	Std. Pkg. Per 100	Less Std. Per 100	Length Cable In.	Std. Pkg.
GCB12	32.90	36.70	12	100

With Soldering Stud, Lug and No. 8 Jumper Cable



GCB108	\$28.85	\$32.20	8	100
GCB112	36.15	40.25	12	100

**Groundulets**

Schedule CM

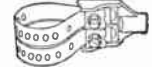
**Safety Circuit Equipment**

Standard finish for groundulets, cadmium-galvanized

**Type GC, for Open Ground Wire**



With 1 Strap



With 2 Straps

Grounding electrode, 5/8 to 1 inch.  
Cast brass; plain finish.

Cat. No.	Std. Pkg.	Car-ton	Less Car-ton	Size Pipe Inches	Size of Wire Lug	No. of Straps	Std. Car-ton	
								GC 91
GC 92	41.25	45.40	49.95	*1/2 to 2	No. 4	1	50	10
GC922	82.45	90.70	99.80	*1/2 to 2	No. 00	2	25	5

**Type GC Groundulets Water Meter Shunts**



1 ← 23" → 1

Consists of two strap type Groundulets connected by 2 feet of No. 4, 40 per cent Copperweld Steel Jumper. Other lengths furnished if specifically ordered. Grounding electrode, 5/8 to 1 inch.

Cat. No.	Std. Pkg.	PER 100		Size Pipe Inches	Std. Pkg.	Car-ton
		Car-ton	Less Car-ton			
GC191	\$72.50	\$90.65	\$116.00	*1/2 to 1	25	10
GC192	85.65	107.05	137.00	*1/2 to 2	25	10

\*For use also on lead pipe in sizes 1/2 and 3/4-inch Grades AA and AAA, and 1-inch Grades A, AA and AAA.

**Groundulet Bushings**

Brass—Without Cap Screw, Lug or Wire Clip

Size In.	Cat. No.	PER 100		Std. Pkg.	Car-ton	
		Car-ton	Less Car-ton			
1/2	GC151	\$5.30	\$5.85	\$6.45	100	25
3/4	GC152	6.20	6.80	7.50	100	25
1	GC153	10.15	11.15	12.25	50	10
1 1/4	GC154	12.40	13.65	15.00	50	10
1 1/2	GC155	16.15	17.75	19.50	50	10
2	GC156	23.90	26.30	28.95	25	5
2 1/2	GC167	49.40	53.35	59.80	10	5
3	GC168	65.45	72.00	79.20	10	5
3 1/2	GC169	124.70	137.20	137.20	5	1
4	GC1610	177.60	195.35	195.35	5	1
4 1/2	GC1611	248.65	277.50	277.50	5	1
5	GC1612	300.20	300.20	300.20	1	1
6	GC1614	376.90	376.90	376.90	1	1



Without Cap Screw, Lug, or Wire Clip

Brass—With Cap Screw and Wire Clip

1/2	GC251	\$9.40	\$10.35	\$15.00	100	25
3/4	GC252	10.45	11.50	16.70	100	25
1	GC253	14.20	15.60	22.70	50	10
1 1/4	GC254	16.55	18.20	26.50	50	10
1 1/2	GC255	20.30	22.35	32.50	50	10



With Cap Screw and Wire Clip

Malleable—With Cap Screw and Wire Clip

1/2	GC231	\$4.94	\$6.40	\$7.90	100	25
3/4	GC232	5.94	7.70	9.50	100	25
1	GC233	9.56	12.45	15.30	50	10
1 1/4	GC234	11.88	15.45	19.00	50	10
1 1/2	GC235	16.25	21.15	26.00	50	10



With Cap Screw and Lug

Brass—With Cap Screw and Lug

2	GC256	\$31.50	\$34.65	\$50.40	25	5
2 1/2	GC277	58.75	64.60	94.00	10	5
3	GC278	74.75	82.20	119.60	10	5
3 1/2	GC279	133.50	146.85	146.85	5	1
4	GC2710	186.85	205.55	205.55	5	1
4 1/2	GC2711	257.60	287.50	287.50	5	1
5	GC2712	309.15	309.15	309.15	1	1
6	GC2714	387.55	387.55	387.55	1	1

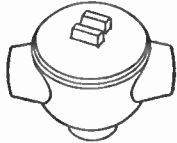
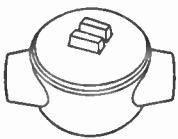
Malleable—With Cap Screw and Lug

2	GC236	\$23.75	\$30.85	\$38.00	25	5
2 1/2	GC237	38.75	50.40	62.00	10	5
3	GC238	49.25	64.00	78.80	10	5
3 1/2	GC239	87.50	113.75	113.75	5	1
4	GC240	122.50	159.25	159.25	5	1
4 1/2	GC241	193.55	225.00	225.00	5	1
5	GC242	245.10	245.10	245.10	1	1
6	GC244	321.80	321.80	321.80	1	1

## GR Series Junction Condulets

Furnished with screw cover.  
Size conduit, form 4. Outside diameter, 2½ inches.  
Cadmium-galvanized is the standard finish.

**Type GRC** Schedule CR **Type GRCA**

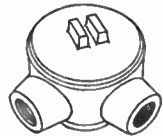
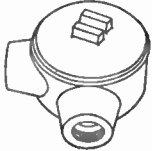


Cat. No.	Each	Size Hub, In.	Std. Pkg.
GRC14	\$ .95	½	25
GRC24	1.00	¾	25

Cat. No.	Each	Size Hub, In.	Std. Pkg.
GRCA14	\$ 1.00	½	25
GRCA24	1.05	¾	25

**Type GRL**

**Type GRLA**

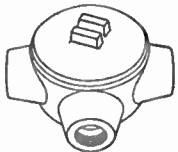


Cat. No.	Each	Size Hub, In.	Std. Pkg.
GRL14	\$ .95	½	25
GRL24	1.00	¾	25

Cat. No.	Each	Size Hub, In.	Std. Pkg.
GRLA14	\$ 1.00	½	25
GRLA24	1.05	¾	25

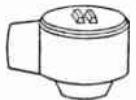
**Type GRT**

**Type GRX**



Cat. No.	Each	Size Hub, In.	Std. Pkg.
GRT14	\$ 1.00	½	25
GRT24	1.05	¾	25

Cat. No.	Each	Size Hub, In.	Std. Pkg.
GRX14	\$ 1.05	½	25
GRX24	1.10	¾	25



Cat. No.	Each	Size Hub, In.	Std. Pkg.
GRB14	\$ .95	½	25
GRB24	1.00	¾	25

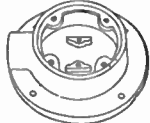
## CL Series Condulets

For Ceiling Outlets

Takes covers, fixtures, attachments, connection blocks, plug receptacle housings or other wiring devices.  
Cadmium-galvanized is the standard finish.

**Type CL** Schedule CR

**Type CLA**



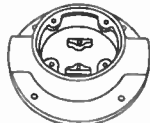
Broken-away View

Cat. No.	Each	Size In.	Std. Pkg.
CL1	\$ 1.60	½	25
CL2	1.70	¾	25
CL3	1.80	1	25
CL4	2.15	1¼	25

Cat. No.	Each	Size In.	Std. Pkg.
CLA1	\$ 1.60	½	25
CLA2	1.70	¾	25
CLA3	1.80	1	25
.....	.....	.....	..

**Type CLC**

**Type CLL**



Cat. No.	Each	Size In.	Std. Pkg.
CLC1	\$ 1.70	½	25
CLC2	1.80	¾	25
CLC3	1.90	1	25
CLC4	2.25	1¼	25

Cat. No.	Each	Size In.	Std. Pkg.
CLL1	\$ 1.70	½	25
CLL2	1.80	¾	25
CLL3	1.90	1	25
.....	.....	.....	..

**Type CLT**

**Type CLX**



Cat. No.	Each	Size In.	Std. Pkg.
CLT1	\$ 1.75	½	25
CLT2	1.85	¾	25
CLT3	1.95	1	25
CLT42	2.30	*1¼-¾	25

Cat. No.	Each	Size In.	Std. Pkg.
CLX1	\$ 1.85	½	25
CLX2	1.95	¾	25
CLX3	2.05	1	25
CLX41	2.30	*1¼-½	25
CLX42	2.35	*1¼-¾	25

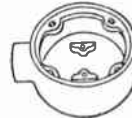
\*1¼-inch mains, ½ and ¾-inch branches.

## LP Series Condulets

For Ceiling Outlets

Takes covers, fixtures, attachments, connection blocks, plug receptacle housings or other wiring devices.  
Cadmium-galvanized is the standard finish.

**Type LP** Schedule CR **Type LPC**



Cat. No.	Each	Size In.	Std. Pkg.
LP1	\$ 1.15	½	25
LP2	1.25	¾	25
LP3	1.35	1	25

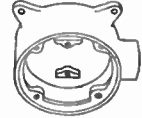
Cat. No.	Each	Size In.	Std. Pkg.
LPC1	\$ 1.25	½	25
LPC2	1.35	¾	25
LPC3	1.45	1	25

## LO Series Condulets

For Ceiling Outlets

Takes covers, fixtures, attachments, connection blocks, plug receptacle housings or other wiring devices.  
Cadmium-galvanized is the standard finish.

**Type LO** Schedule CR **Type LOA**



Cat. No.	Each	Size In.	Std. Pkg.
LO1	\$ 1.15	½	25
LO2	1.25	¾	25
LO3	1.35	1	25

Broken-away View

Cat. No.	Each	Size In.	Std. Pkg.
LOA1	\$ 1.15	½	25
LOA2	1.25	¾	25
LOA3	1.35	1	25



Cat. No.	Each	Size In.	Std. Pkg.
LOC1	\$ 1.25	½	25
LOC2	1.35	¾	25
LOC3	1.45	1	25

Cat. No.	Each	Size In.	Std. Pkg.
LOL1	\$ 1.25	½	25
LOL2	1.35	¾	25
LOL3	1.45	1	25

**Type LOT**

**Type LOX**



Cat. No.	Each	Size In.	Std. Pkg.
LOT1	\$ 1.35	½	25
LOT2	1.45	¾	25
LOT3	1.55	1	25

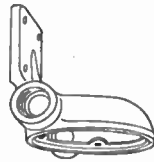
Cat. No.	Each	Size In.	Std. Pkg.
LOX1	\$ 1.40	½	25
LOX2	1.50	¾	25
LOX3	1.60	1	25

## Type BLMC Conduit Bodies

Schedule CR

For Deck Sill Outlets

Takes covers, fixtures, attachments, plug receptacle housings or wiring devices.  
Cadmium-galvanized standard finish.



Cat. No.	Each	Size In.	Std. Pkg.
BLMC1	\$ 1.45	½	25
BLMC2	1.60	¾	25
BLMC3	1.75	1	25

## BO Series Condulets

For Ceiling Outlets

Takes covers, fixtures, attachments, connection blocks, plug receptacle housings or other wiring devices.  
Cadmium-galvanized is the standard finish.

**Type BO** Schedule CR **Type BOC**



Cat. No.	Each	Size In.	Std. Pkg.
BO1	\$ 1.50	½	25
BO2	1.60	¾	25
BO3	1.70	1	25

Cat. No.	Each	Size In.	Std. Pkg.
BOC1	\$ 1.65	½	25
BOC2	1.75	¾	25
BOC3	1.85	1	25

**Equipment**

Schedule CR

**Holders**

For Condulets of the BLM, BO, CL, LO and LP Series

**Type CRSE**

Takes 2 1/4-inch reflector or shades. Furnished with receptacle with lamp grip PE57h.

Cat. No.	Each	Material	Std. Pkg.
CRSE1	\$6.00	Bronze	25
CRSE3	6.00	Bronze	25

**Type SRH**

Takes lamp receptacle C337 and reflector SH25.

SRH2	\$.50	Cast Feraloy	50
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**Lamp Receptacle**

For Type CRSE Holders

Furnished with lamp grip. Has 1/2-inch female nipple cap.

Cat. No.	Each	RATING		Std. Pkg.
		Watt	Volt	
PE57h	\$.70	660	600	100

**Reflectors**

For SRH2 and SRH3 Holders

Porcelain enamel finish.

Cat. No.	Each	Std. Pkg.
SH25	\$1.50	50

**Connection Blocks**

For Condulets of the BO, CL, JRY-KRY, LO, LP and SO Series

Cat. No.	Each	RATING		Std. Pkg.
		Amp.	Volt	
CF101	\$.50	20	250	50

**Bezels**

For SH25 Reflector

Cat. No.	Each	Material	Std. Pkg.
Bez 1	\$1.00	Brass	50

**Covers**

For Condulets of the BLM, BO, CL, LO and LP Series

**Hub Style**

Cat. No.	Each	Material	Size In.	Std. Pkg.
LOB83	\$.65	Cast Feraloy	3/8	50
LOB84	.65	Cast Feraloy	1/2	50

**Blank Style**

LOB00	\$.50	Cast Feraloy	..	50
LOB000	.30	Sheet Steel	..	50

**ARB Vaporproof Fixtures**

For Condulets of the BLM, BO, CL, LO and LP Series

Furnished with globe, guard, receptacle C337, and gaskets. Regularly furnished with clear globes, can be furnished with colored globes at an additional charge.

Galvanized is the standard finish.

**Form 75**

Furnished with Globe V75 and Guard V911, and takes 50-watt (PS20), 60-watt (A21), 75-watt (PS22), or 100-watt (A23) lamps.

**Form 200**

Furnished with Globe V200 and Guard V912, and takes 100 or 150-watt (PS25), or 200-watt (PS30) lamps.

Form 75			Form 200		
Cat. No.	Each	Std. Pkg.	Cat. No.	Each	Std. Pkg.
ARB37	\$4.10	25	ARB33	\$4.75	25

For prices without globe and guard, deduct \$2.60 from price of Form 75, and \$3.05 from price of Form 200.

**Equipment**

Schedule CR

For Mounting on Condulets of the CL and LO Series

Used for railway mail car lighting and fan installations. Cadmium-galvanized is the standard finish.

**Fixtures**

Standard package quantity is 20.

For Storage Section Lighting

For 50-watt, A21 or PS20 lamps.

No. LOB101, Complete with Holder, Lamp Receptacle GS1621 and Reflector.....each \$4.00

No. LOB104, Holder Only, Complete except Reflector.....each 1.00

No. SH50, 12-Inch RLM Reflector Only.....each 3.00

For Door and Lavatory Lights

Furnished with lamp receptacle GS1621. The half shade is cast as an integral part of the receptacle holder.

No. LOB102, For 25-Watt, S17, A19 or PS16 Lamps.....each \$1.80

No. LOB103, For 50-Watt, A21 or PS20 Lamps.....each 2.00

**Fixture Bases**

Three standard angle fixture bases are listed to take care of the curvature of car roofs at letter-case mountings. These angles, together with a possible slight shimming of the condulets, should meet nearly every condition.

The complete fixture is made up by assembling a condulet of the CL or LO Series, Type LOB Fixture Base, Type DAH Reflector Holder and a conduit stem of the proper length.

Assorted standard package quantity is 20.

Style Hub	1-Inch		1 1/2-Inch	
	Cat. No.	Each	Cat. No.	Each
Straight	LOB88	\$.75	LOB812	\$.85
6°-Angle	LOB88-6	.75	LOB812-6	.85
12°-Angle	LOB88-12	.75	LOB812-12	.85
18°-Angle	LOB88-18	.75	LOB812-18	.85

**Reflector Holders**

Furnished either with or without a spun steel canopy which slips over brass reflector holder ring to keep out paint and dirt so that it will always be easy to operate the reflector holder.

Cat. No.	Each	Style	Size In.	Std. Pkg.
DAH13	\$4.75	With Canopy	1	20
DAH15	5.00	With Canopy	1 1/2	20
DAH1	3.70	Without Canopy	1 1/2	20
DAH2	3.80	Without Canopy	3/4	20
DAH3	3.90	Without Canopy	1	20
DAH5	4.00	Without Canopy	1 1/2	20

**Reflectors**

For DAH Reflector Holders

Opal glass; medium density.

Cat. No.	Each	Std. Pkg.
SH40	\$1.50	20

**Receptacles**

For DAH Reflector Holders

Cat. No.	Each	RATING		Std. Pkg.
		Watt	Volt	
PE55	\$.40	660	600	200

Can be furnished with lamp grip at 10 cents extra.



## FS Series Switch Condulets

Schedule CR

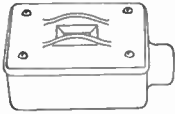
Cadmium-galvanized is the standard finish.

### Type FS

For controlling the lavatory light, door lights at the opposite end from the lavatory in full mail cars and door lights in baggage compartment of combination mail and baggage cars.

Takes any standard square handle, single-pole, flush tumbler switch.

Has guarded switch cover.



Cat. No.	Each	Size In.	Std. Pkg.
FS132g	\$1.00	1/2	50

### Type FSS—Fusible

For controlling the door lights in the clear storage end or lavatory end of full mail cars; for one door light in 15-foot postal apartments; or for use in any location where a fusible switch is required.

Takes one standard square handle, double-pole, flush tumbler switch; and one standard double-pole, plug fuse cutout No. 62965.



Furnished with guarded switch cover and cover for fuse cutout.

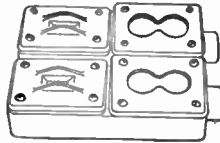
FSS1732	\$2.45	1/2	10
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### Type FSS—2-Gang—Fusible

For controlling door lights and center lights of 15 or 30-foot postal apartments.

Takes 2 standard square handle, double-pole, flush tumbler switches, and 2 standard double-pole, plug fuse cutouts No. 62965.

Furnished with guarded switch covers and covers for fuse cutouts.



FSS2834	\$4.75	3/4	10
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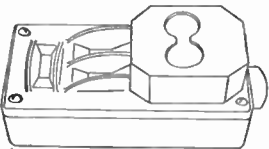
### Type FSF

For Fan Control Switch

The lower double-pole switch is actually the "on" and "off" control of the fan. When this switch is thrown to "on" position, it starts the fan in low speed. If medium or high speed is desired, the switch indicated as medium or high may be thrown in to obtain those speeds, but in order to stop the fan it is only necessary to throw the lower double-pole switch to the "off" position.

Takes one standard square handle, double-pole, flush tumbler switch; one standard square handle, 2-circuit, flush tumbler switch Bryant No. 2892 or similar; and one standard double-pole, plug fuse cutout No. 62965.

Furnished with cover and resistance for 32-volt fan.



Cat. No.	Each	Size In.	Std. Pkg.
FSF251	\$7.50	3/4	5

### Type FSF

For Combination Fan and Light Control Switch

A 2-gang switch performing the functions of one No. FSS1732 Light Control Switch and one No. FSF251 Fan Control Switch.

Takes 2 standard square handle, double-pole, flush tumbler switches; one standard square handle 2-circuit, flush tumbler switch Bryant No. 2892 or similar; and 2 standard double-pole, plug fuse cutouts No. 62965.

Furnished with cover, resistance for 32-volt fan and one RE21 Reducer.

FSF2281	\$10.00	3/4	5
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### Type FSFR Resistances

For 3-Speed Fan

Used in Type FSF switch condulets.



Cat. No.	Each	Voltage	Resistance Ohms	Std. Pkg.
FSFR10	\$1.50	32	5-10	10
FSFR100	1.50	64	*25-50	10
FSFR100	1.50	110	50-100	10

\*One half of 100-ohm resistance for 50 ohms, and 2 halves in multiple for 25 ohms.

## JRY-KRY Series Condulets

Schedule CR

### For Side Wall or Car Vestibule Fixtures

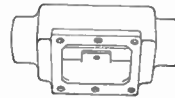
For mounting back of the car finish. The fixtures can be fastened directly to them instead of the finish of the car; therefore, it is unnecessary to reinforce the car finish where the fastening screws enter. Takes connection blocks and fixtures.

The use of connection block No. CF101 eliminates soldered and taped joints, facilitating the removal of fixtures for refinishing or other purposes.

Fixtures are not furnished for this series, but the fastening screw holes are spaced and tapped to take fixtures.

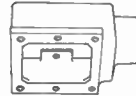
Cadmium-galvanized is the standard finish.

### Type JRY



Cat. No.	Each	Size In.	Std. Pkg.
JRY1	\$.70	1/2	25
JRY2	.80	3/4	25
JRY3	.90	1	25

### Type KRY



KRY1	\$.65	1/2	25
KRY2	.75	3/4	25
KRY3	.85	1	25

### Type KRYA



KRYA1	\$.65	1/2	25
KRYA2	.75	3/4	25
KRYA3	.85	1	25

## Type SRH Car Vestibule Fixtures

Schedule CR

### For Condulets of the JRY-KRY Series

Cadmium-galvanized is the standard finish.

### Fixtures Complete

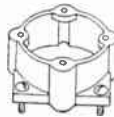
Consists of holder SRH3, reflector SH25, receptacle C227 and Bezel Bez 1.



Cat. No.	Each	Std. Pkg.
SRH357	\$3.50	25

### Holders Only

For SRH Fixture



SRH3	\$.75	25
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### Lamp Receptacles

For SRH Fixture



Cat. No.	Each	Rating Watt	Volt	Std. Pkg.
C227	\$.25	660	600	100

## TJ Series Telephone Jack Condulets

Schedule CR

Arranged with bracket to take Western Electric Telephone Jack No. 200. When the plug is removed, a lid automatically closes the opening and prevents the entrance of dust, moisture and insects. Cadmium-galvanized, standard finish.

### Type TJ

Intended for use under the body of a railroad car. Has a swivel base which allows the plug to pull out easily when the car is moved.

Furnished with insulating bushing and jack support attached to gasketed metal cover.



Cat. No.	Each	Std. Pkg.
TJ200	\$5.00	15

### Type TJD

Intended for use on poles or buildings along the right-of-way of a railroad, transmission line or canal. The line wires enter the conduit through a 2-wire porcelain cover. Furnished with 2-wire porcelain cover and jack support attached to gasketed metal cover.

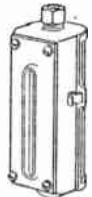


Cat. No.	Each	Std. Pkg.
TJD200	\$5.00	15

**Type LG Gauge Lamps**

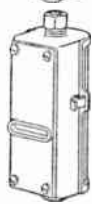
Schedule CR

Bottom tapped for 3/8-in. bolt for attaching to bracket on boiler head or in cab. Cast Aluminum; aluminum standard finish. Takes lamps in A17, S14, or S17 bulb. Lamp receptacle with lamp grip furnished.



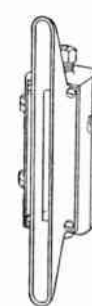
**Water Glass Lamps**  
Vertical Slot

Cat. No.	Each	Size Inches	Std. Pkg.
LG21	\$3.50	A-1/2	10
LG201	3.50	B-.220 to .260	10
LG22	3.50	B-.313 to .375	10
LG23	3.50	B-.375 to .438	10
LG24	3.50	B-.469 to .560	10
LG229	3.50	C-.406 to .453	10
LG232	3.50	C-.453 to .500	10
LG235	3.50	C-.500 to .547	10



Horizontal Slot

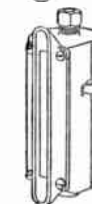
Cat. No.	Each	Size Inches	Std. Pkg.
LG51	\$3.50	A-1/2	10
LG501	3.50	B-.220 to .260	10
LG52	3.50	B-.313 to .375	10
LG53	3.50	B-.375 to .438	10
LG54	3.50	B-.469 to .560	10
LG529	3.50	C-.406 to .453	10
LG532	3.50	C-.453 to .500	10
LG535	3.50	C-.500 to .547	10



**Lubricator Lamps**

13-Inch Slot

Cat. No.	Each	Size Inches	Std. Pkg.
LG31	\$5.00	A-1/2	10
LG301	5.00	B-.220 to .260	10
LG32	5.00	B-.313 to .375	10
LG33	5.00	B-.375 to .438	10
LG34	5.00	B-.469 to .560	10
LG329	5.00	C-.406 to .453	10
LG332	5.00	C-.453 to .500	10
LG335	5.00	C-.500 to .547	10



8 1/2-Inch Slot

Cat. No.	Each	Size Inches	Std. Pkg.
LG41	\$4.20	A-1/2	10
LG401	4.20	B-.220 to .260	10
LG42	4.20	B-.313 to .375	10
LG43	4.20	B-.375 to .438	10
LG44	4.20	B-.469 to .560	10
LG429	4.20	C-.406 to .453	10
LG432	4.20	C-.453 to .500	10
LG435	4.20	C-.500 to .547	10

**Multiple Steam and Air Gauge Lamps**

Rectangular Opening



Cat. No.	Each	Size Inches	Std. Pkg.
LG61	\$4.25	A-1/2	10
LG601	4.25	B-.220 to .260	10
LG62	4.25	B-.313 to .375	10
LG63	4.25	B-.375 to .438	10
LG64	4.25	B-.469 to .560	10
LG629	4.25	C-.406 to .453	10
LG632	4.25	C-.453 to .500	10
LG635	4.25	C-.500 to .547	10

Rectangular Opening—Hooded



Cat. No.	Each	Size Inches	Std. Pkg.
LG71	\$4.25	A-1/2	10
LG701	4.25	B-.220 to .260	10
LG72	4.25	B-.313 to .375	10
LG73	4.25	B-.375 to .438	10
LG74	4.25	B-.469 to .560	10
LG729	4.25	C-.406 to .453	10
LG732	4.25	C-.453 to .500	10
LG735	4.25	C-.500 to .547	10

**Single Steam and Air Gauge Lamps**

Round Opening



Cat. No.	Each	Size Inches	Std. Pkg.
LG11	\$3.50	A-1/2	10
LG101	3.50	B-.220 to .260	10
LG12	3.50	B-.313 to .375	10
LG13	3.50	B-.375 to .438	10
LG14	3.50	B-.469 to .560	10
LG129	3.50	C-.406 to .453	10
LG132	3.50	C-.453 to .500	10
LG135	3.50	C-.500 to .547	10

A—Size of hub for 1/2-inch rigid conduit.  
B—Outside diameter of round cord or cable. Furnished with tapered bushing and gland nut.  
C—Outside diameter of flexible conduit or armored cable. Furnished with tapered split lead sleeve and gland nut.

**LD Series Tender Lamp Condulets**

Schedule CR

Cast ferrous. Cadmium-galvanized is standard finish.

**Types LDJ and LD**

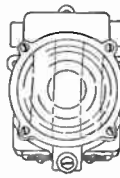
Used as back up lamps on rear of locomotive tenders. Weatherproof; front and side roundels gasketed. Provided with removable sliding door which is held in position by a cap screw.

The style with 2 round openings in the sides provides ground illumination so that the engineer can see that the lamp is burning. The style with rectangular opening in the bottom not only provides ground illumination, but also throws a light directly downward for coupling.

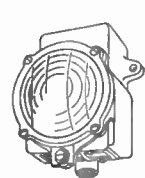
Takes any medium screw base lamp in A17, A19, A21, S17, S21, G18 1/2 or P19 bulb. Furnished with clear Spredlite Lens, lamp receptacle with lamp grip, and gaskets.

**Type LDJ**

With Rectangular Opening and Plain Glass in Bottom

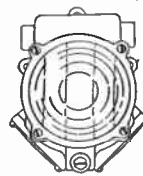


**Type LD**



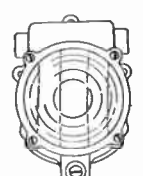
Cat. No.	Each	Size In.	Std. Pkg. Ast.	Cat. No.	Each	Size In.	Std. Pkg. Ast.
LDJ17	\$8.40	1/2	10	LD17	\$8.30	1/2	10
LDJ27	8.50	3/4	10	LD27	8.40	3/4	10

With 2 Round Openings and Semaphore Lens in Sides



Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
LDJ15	\$9.60	1/2	10	LD15	\$9.50	1/2	10
LDJ25	9.70	3/4	10	LD25	9.60	3/4	10

With Front Opening Only



Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
LDJ12	\$7.40	1/2	10	LD12	\$7.30	1/2	10
LDJ22	7.50	3/4	10	LD22	7.40	3/4	10

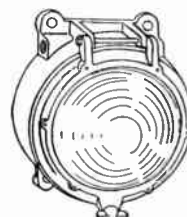
Can be furnished in aluminum at \$3.50 extra.

**Types LDBJ and LDBF**

Takes 30-34, 110, 115 or 120-volt, 100-watt, medium screw base G25 lamp. Furnished with 8-inch Semaphore Lens and lamp receptacle with lamp grip.

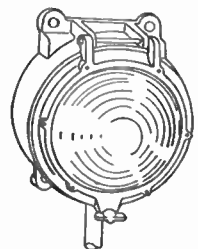
**Type LDBJ**

For Through Feed Horizontal Conduit



**Type LDBF**

For Vertical Conduit In Bottom



Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
LDBJ1	\$12.50	1/2	5	LDBF1	\$12.40	1/2	5
LDBJ2	12.60	3/4	5	LDBF2	12.50	3/4	5

Can be furnished in aluminum at \$4.50 extra.

## LE Series 2-Color Tender Lamp Condulets

Schedule CR

Provided with a red color screen that may be placed between the lamp and the lens when a red light is desired. In Type LEA, the door must be opened to operate color screen; in Types LEBJ and LEBF, it is operated by means of a lever on the outside of the case.

A single rectangular glass-covered opening in Type LEA, and 2 such openings in Types LEBJ and LEBF, throw a light downward for coupling and for ground illumination.

Doors, lenses and openings in the bottom are gasketed, making the condulets weatherproof.

Cast feraloy. Cadmium-galvanized is the standard finish.

### Type LEA

With Rectangular Opening and Plain Glass in Bottom



Takes any medium screw base lamp in A17 or S17 bulb. Furnished with 5 3/8-inch clear Spredlite Lens, color screen, C139 Keyless Lamp Receptacle with lamp grip, and gaskets.

Cat. No.	Each	Size In.	Std. Pkg. Astd.
LEA18	\$10.00	1/2	10
LEA28	10.00	3/4	10

Can be furnished with No. C131 Key Receptacle with lamp grip at 20 cents extra; or with the same key receptacle and an operating mechanism similar to that furnished with Type LEBJ Condulet at 70 cents extra. If furnished with key receptacle without the operating mechanism, the door must be opened to operate the key receptacle. Can be tapped for conduit in the back or at either side instead of at bottom. Can be furnished in aluminum at \$3.25 extra.

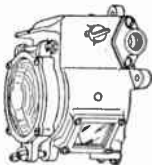
### Types LEBJ and LEBF

Take any medium screw base lamp in A17 or S17 bulb.

Furnished with GSG Removable Conduit Hub Plates, 5 3/8-inch clear Spredlite Lens, and color screen and key receptacle No. C123 with lamp grip. Key receptacle is controlled by a simple durable externally operated knob or button.

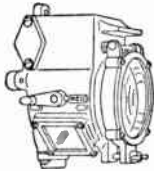
#### Type LEBJ

For Through Feed Horizontal Conduit



#### Type LEBF

For Vertical Conduit in Bottom



Cat. No.	Each	Size In.	Std. Pkg. Astd.	Cat. No.	Each	Size In.	Std. Pkg. Astd.
LEBJ18	\$14.25	1/2	5	LEBF18	\$14.20	1/2	5
LEBJ28	14.35	3/4	5	LEBF28	14.30	3/4	5

Can be furnished in aluminum at \$3.75 extra.

## Conduit Hub Plates

Schedule CR

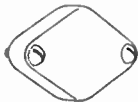
For Types LEBJ and LEBF Tender Lamp Condulets

Cast feraloy.

With One Hub



Blank



Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Std. Pkg.
GSG61	\$.25	1/2	25	GSG600	\$.20	25
GSG62	.30	3/4	25	.....	...	..
GSG63	.35	1	25	.....	...	..

## LG Series Locomotive Filler Hole and Stack Lamp Condulets

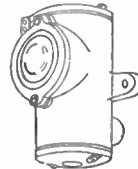
Schedule CR

Each type consists of a cylindrical housing enclosing receptacle for an incandescent lamp in A17 or S17 bulb and tapped for rigid conduit. Furnished with lamp receptacle with lamp grip and 3-inch clear semaphore lens.

Type LGUA is especially intended for oil burning locomotives to furnish light for taking on oil and water. It is provided with lugs for fastening bolts. Made of cast feraloy. Cadmium-galvanized is the standard finish.

Type LGUB is similar to Type LGUA except the hub comes out at an angle of about 30 degrees to the axis. No lugs are provided for fastening, the lamp being supported by the conduit. Made of cast aluminum. Aluminum is the standard finish.

### Type LGUA Filler Hole Condulet



Cat. No.	Each	Size In.	Std. Pkg. Astd.
LGUA1	\$4.25	1/2	10

### Type LGUB Stack Lamp Condulet



Cat. No.	Each	Size In.	Std. Pkg. Astd.
LGUB1	\$5.50	1/2	10

## LMK Series Engineer's Reading Light Condulets

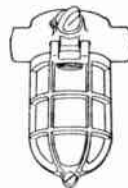
Schedule CR

Also suitable for use in railroad shops, roundhouses and railroad yards. Provided with a half shade and with or without a half guard. The shade is cast as part of the conduit, while guard is hinged to conduit.

The body and shade are cast feraloy; the guard is cast aluminum. Cadmium-galvanized is the standard finish.

Takes any lamp in A17 or S17 bulb. With key receptacle with lamp grip, and metal key operating mechanism.

### Type LMKJ



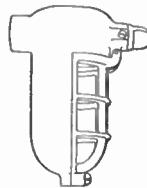
Cat. No.	Each	Size In.	Std. Pkg.
LMKJ225	\$3.50	3/4	10
LMKJ224	\$2.75	3/4	10

### Type LMKKA



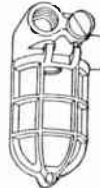
Cat. No.	Each	Size In.	Std. Pkg.
LMKKA225	\$3.40	3/4	10
LMKKA224	\$2.65	3/4	10

### Type LMKB



Cat. No.	Each	Size In.	Std. Pkg.
LMKB225	\$3.40	3/4	10
LMKB224	\$2.65	3/4	10

### Type LMKL



Cat. No.	Each	Size In.	Std. Pkg.
LMKL225	\$3.50	3/4	10
LMKL224	\$2.75	3/4	10

With Guard  
LMKB225 \$3.40 3/4 10  
Without Guard  
LMKB224 \$2.65 3/4 10  
\*Key Receptacle  
For Condulets of LMK Series

With Guard  
LMKL225 \$3.50 3/4 10  
Without Guard  
LMKL224 \$2.75 3/4 10  
\*Keyless Receptacle  
For Types LGUA and LGUB Condulets

Cat. No.	Each	RATING Watt	Volt	Std. Pkg.
C131	\$.70	250	250	50

\*With lamp grip. Composition base.



Cat. No.	Each	RATING Watt	Volt	Std. Pkg.
C129	\$.50	660	250	50



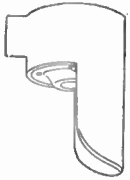
**LM Series Locomotive Deck Light Condulets**

*Schedule CR*

For locomotive gangways; provides illumination for coal passers. Consists of a condulet and half shade cast in one piece, and a weatherproof composition receptacle with lamp grip. The half shade is the correct length and size so that when used with a 25-watt, A17 or S17 lamp, the filament is not visible from any point over the rear end of the tender. The diameter of the half shade prevents the use of large headlight bulbs.

Cadmium-galvanized is the standard finish.

**Type LMG**



Cat. No.	Each	Size In.	Std. Pkg.
LMG125	\$1.80	1/2	10
LMG225	1.90	3/4	10

**Type LMD**



Cat. No.	Each	Size In.	Std. Pkg.
LMD125	\$1.80	1/2	10
LMD225	1.90	3/4	10

**Type LMA**



LMA125	\$1.80	1/2	10
LMA225	1.90	3/4	10

**Type LMH**



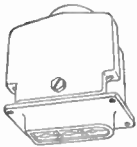
LMH125	\$1.80	1/2	10
LMH225	1.90	3/4	10

**Type MDA Connector Condulets**

*Schedule CR*

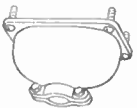
Furnished with connection block, wire hole cover and removable sliding cover.

Capacity, 100 amperes.



Size In.	Astd. Std. Pkg.	125-Volt 3-Pole		65-Volt 4-Pole	
		Cat. No.	Each	Cat. No.	Each
1 1/4	10	MDA438	\$8.15	MDA444	\$9.00
1 1/2	10	MDA538	8.35	MDA544	9.20

**Attachment for Flexible Conduit**

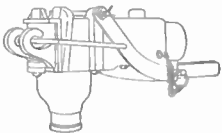


Size Flex. Cond. In.	Std. Pkg.	3-Pole		4-Pole	
		Cat. No.	Each	Cat. No.	Each
1 1/4	10	MDA39	\$1.50	MDA49	\$1.50

**Type MD Connector Condulets**

*Schedule CR*

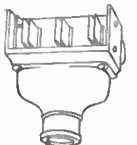
Furnished with plug No. MD03. Capacity, 200 amperes, 250 volts; 3-pole.



Cat. No.	Each	Size In.	Std. Pkg. Astd.
MD3	\$25.50	1	10
MD4	25.75	1 1/4	10
MD5	26.00	1 1/2	10

**Plug Only**

Capacity, 200 amperes, 250 volts; 3-pole.



Cat. No.	Each	Std. Pkg.
MD03	\$8.50	10

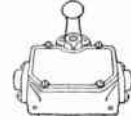
**LHS Series Locomotive Headlight Switch Condulets**

*Schedule CR*

34-Volt, 24-Ampere - 125-Volt, 6-Ampere - 250-Volt, 3-Ampere

Cadmium-galvanized is the standard finish.

**Type LHSJ**



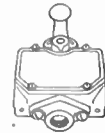
**3-Positions: Dim—Off—Bright**

Size In.	Std. Pkg.	Without Resistance		With Resistance	
		Cat. No.	Each	Cat. No.	Each
1/2	10	LHSJ1	\$11.50	LHSJ105	\$14.80
3/4	10	LHSJ2	11.60	LHSJ205	14.90
1	10	LHSJ3	11.70	LHSJ305	15.00

**3-Positions: Front Dim, Rear Bright—Off—Rear Dim, Front Bright**

1/2	10	LHSJ17	\$11.50	LHSJ175	\$14.80
3/4	10	LHSJ27	11.60	LHSJ275	14.90
1	10	LHSJ37	11.70	LHSJ375	15.00

**Type LHSA**



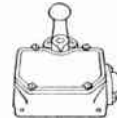
**3-Positions: Dim—Off—Bright**

1/2	10	LHSA1	\$11.40	LHSA105	\$14.70
3/4	10	LHSA2	11.50	LHSA205	14.80
1	10	LHSA3	11.60	LHSA305	14.90

**3-Positions: Front Dim, Rear Bright—Off—Rear Dim, Front Bright**

1/2	10	LHSA17	\$11.40	LHSA175	\$14.70
3/4	10	LHSA27	11.50	LHSA275	14.80
1	10	LHSA37	11.60	LHSA375	14.90

**Type LHSK**



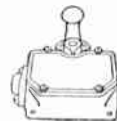
**3-Positions: Dim—Off—Bright**

1/2	10	LHSK1	\$11.40	LHSK105	\$14.70
3/4	10	LHSK2	11.50	LHSK205	14.80
1	10	LHSK3	11.60	LHSK305	14.90

**3-Positions: Front Dim, Rear Bright—Off—Rear Dim, Front Bright**

1/2	10	LHSK17	\$11.40	LHSK175	\$14.70
3/4	10	LHSK27	11.50	LHSK275	14.80
1	10	LHSK37	11.60	LHSK375	14.90

**Type LHSP**



**3-Positions: Dim—Off—Bright**

1/2	10	LHSP1	\$11.40	LHSP105	\$14.70
3/4	10	LHSP2	11.50	LHSP205	14.80
1	10	LHSP3	11.60	LHSP305	14.90

**3-Positions: Front Dim, Rear Bright—Off—Rear Dim, Front Bright**

1/2	10	LHSP17	\$11.40	LHSP175	\$14.70
3/4	10	LHSP27	11.50	LHSP275	14.80
1	10	LHSP37	11.60	LHSP375	14.90

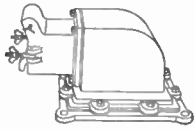
## UG Series Battery Charging Condulets

Schedule CR

Single receptacle battery charging condulets.

Furnished with 2-pole rectangular or round receptacle, spring door and gaskets. Rectangular receptacle No. BR100 is rated at 100 amperes, 80 volts and takes plugs Nos. BP100, BPB100 or BPF100. Round receptacle No. BRA100 is rated at 100 amperes, 125 volts and takes plugs Nos. BPA100, BPA105 or BPA100. Rectangular receptacle No. \*BR200 is rated at 200 amperes, 65 volts and takes 200-ampere plugs Nos. BPD200, BPD203, BPDF200 or BPB100 or 100-ampere plugs Nos. BP100 or No. BPF100.

Cadmium-galvanized is the standard finish. Standard package quantity is 5.



### Type UGEL

With Base Plate

Size In.	With Rectangular Receptacle *No. BR100		With Round Receptacle No. BRA100	
	Cat. No.	Each	Cat. No.	Each
1 1/4	UGEL1010	\$24.50	UGEL1020	\$27.25

Without Base Plate

1 1/4	UGEL101	22.00	UGEL102	24.75
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### Type UGEL—Surface Style

For 2 Conduits—With UGC Conduit

1 1/4	UGEL412	\$28.75	UGEL422	\$31.50
1 1/2	UGEL512	29.15	UGEL522	31.90
2	UGEL612	29.55	UGEL622	32.30

For 4 Conduits—With UGX Conduit

1 1/4	UGEL414	\$28.95	UGEL424	\$31.70
1 1/2	UGEL514	29.35	UGEL524	32.10
2	UGEL614	29.75	UGEL624	32.50

### \*\*Type UGEL—Underground Style

For 2 Conduits—With UGC Conduit

1 1/4	UGEL4126	\$36.50	UGEL4226	\$39.25
1 1/2	UGEL5126	36.90	UGEL5226	39.65
2	UGEL6126	37.30	UGEL6226	40.05

For 4-Conduits—With UGX Conduit

1 1/4	UGEL4146	\$36.70	UGEL4246	\$39.45
1 1/2	UGEL5146	37.10	UGEL5246	39.85
2	UGEL6146	37.50	UGEL6246	40.25

### Type UGEM

With Base Plate

1 1/4	UGEM1010	\$33.75	UGEM1020	\$39.25
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### Type UGEM

Without Base Plate

1 1/4	UGEM101	\$29.00	UGEM102	\$34.50
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### \*\*Type UGCD—Underground Style

For 2 Conduits—With UGC Conduit

1 1/4	UGCD41	\$42.00	UGCD42	\$47.50
1 1/2	UGCD51	42.40	UGCD52	47.90
2	UGCD61	42.80	UGCD62	48.30

### \*\*Type UGXD—Underground Style

For 4 Conduits—With UGX Conduit

1 1/4	UGXD41	\$42.20	UGXD42	\$47.70
1 1/2	UGXD51	42.60	UGXD52	48.10
2	UGXD61	43.00	UGXD62	48.50

### Type UGEN

For One Conduit

1 1/4	UGEN4101	\$18.50	UGEN4102	\$21.25
1 1/2	UGEN5101	18.75	UGEN5102	21.50
2	UGEN6101	19.00	UGEN6102	21.75

\*If specified on the order, 200-ampere rectangular receptacle BR200 can be substituted for receptacle No. BR100 at \$1.25 extra. When so arranged, the conduit is suitable for low voltage welding machines of 200-ampere capacity.

\*\*Furnished with hub plate and hub cover for 2-inch conduit stem. Conduit stem is not furnished.

## BRH Series Battery Charging Condulets

Schedule CR

For Flexible Cable

For storage battery charging outlets, particularly on railroad cars and electric vehicles.

Makes excellent outlets for electric welding systems. If one side of the welding circuit is permanently grounded, both terminals of the plug and receptacle can be connected to the same conductor, thereby making them single-pole and doubling the ampere capacity.

Made for flexible cable. Furnished with 2-pole rectangular or round receptacles which are interchangeable in all the condulets of the BRH Series, except BRHE which takes the round receptacle only.

Receptacles and plugs are polarized.

The receptacle housings are provided with a spring door.

Types BRHA and BRHE are furnished with improved M.C.B. Brackets and are pivoted so as to allow the receptacle to align itself with the direction of the pull on the plug when the latter is withdrawn. Both of these condulets comply with all the A.R.E.E. standards.

The housing of Type BRHE is inclined at an angle and the wires enter the conduit from the bottom. The wire openings can be sealed by wrapping tape around the wires where they enter the housing. The combination of these features prevents the collection of dust, cinders, and moisture within the receptacle. Another advantage of having the housing set at an angle is that there is no downward pull on the receptacle when the plug is jerked out by the car moving away. Receptacle No. BRA100, which is furnished with this conduit, has self-aligning contacts. Furthermore, that part of the housing around the opening of the receptacle is made extra long so that it and the plug handle will take the side strain.

Rectangular receptacle No. BR100 takes plug No. BP100. Round receptacle No. BRA100 takes plugs No. BPA100 or No. BPA105. Rectangular receptacle No. BR200 takes plugs Nos. BPD200, BPD203 or BP100.

Cadmium-galvanized is the standard finish.

Standard package quantity is 5.

### Type BRHE



Broken-Away View

Furnished with improved M.C.B. Bracket and 2-pole, round receptacle No. BRA100.

Cat. No.	Each	RATING Amp.	Volt
BRHE102	\$22.50	100	125

### Type BRHA

Furnished with improved M.C.B. Bracket and 2-pole, rectangular receptacle No. BR100.

Furnished with improved M.C.B. Bracket and 2-pole rectangular receptacle No. BR200.

BRHA101	\$17.50	100	80
BRHA201	\$18.75	200	65
BRHA102	\$20.25	100	125

### Type BRH

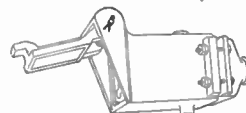
Housing for M.C.B. Bracket. Furnished with 2-pole rectangular receptacle No. BR100.

Furnished with 2-pole rectangular receptacle No. BR200.

BRH101	\$12.50	100	80
BRH201	\$13.75	200	65

Housing for M.C.B. Bracket. Furnished with 2-pole round receptacle No. BRA100.

BRH102	\$15.25	100	125
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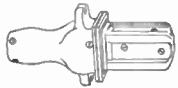
**Plugs**

Schedule CR

Aluminum is the standard finish for plug handles. Standard package quantity is 5.

**For Battery Charging Condulets of UG Series**

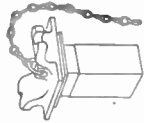
**Types BPF and BPFD**



Two-pole, rectangular for receptacles No. BR100 or No. BR200.

Cat. No.	Each	Rating
BPF100	\$12.00	*100-A., 80-V.
BPFD200	13.00	*200-A., 65-V.

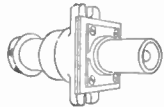
**Type BPB**



Two-pole, rectangular for receptacles No. BR100 or No. BR200.

BPB100	\$4.00	Short Circuiting
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**Type BPF A**



Two-pole, round for receptacle No. BRA100.

**BPF A100	\$9.50	*100-A., 125-V.
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**For Battery Charging Condulets of BRH and UG Series**

**Types BP and BPD**



Two-pole, rectangular for receptacles No. BR100 or No. BR200.

BP100	\$11.00	*100-A., 80-V.
BPD200	12.00	*200-A., 65-V.
BPD203	13.00	*200-A., 65-V.

**Type BPA**



Two-pole, round for receptacle No. BRA100.

**BPA100	\$8.50	*100-A., 125-V.
**BPA105	8.50	*100-A., 125-V.

**Plug Receptacles**

Schedule CR

**For Battery Charging Condulets of the BRH and UG Series—Type BR—Rectangular**



Cat. No.	Each	RATING A. V.	Takes Plugs	Std. Pkg.
BR 100	\$7.75	100 80	BP100, BPB100, BPF100.....	5
BR 200	9.00	200 65	BPD200, BPD203, BPFD200.....	5



**Type BRA—Round**

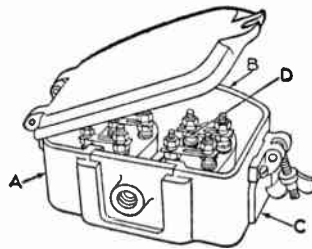
BRA100	\$10.50	100 125	BPA100, BPA105, BPF A100.....	5
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\*Sizes of conductors for plugs and plug receptacles: BP100 and BPF100 take No. 1 Duplex Cable. BPD200 and BPF D 200 take No. 0000 Duplex Charging Cable. BPD203 takes No. 00 Armored Mining Machine Cable, outside diameter 1 13/16 inches. BPA100 and BPF A100 take No. 1 Duplex Cable. BPA105 takes No. 1 Round Flexible Cable, outside diameter 1 3/16 to 1 1/8 inches. The wire terminals of receptacle BR100 are drilled 11/32 of an inch in diameter and will take any size cable up to and including No. 1, B & S gauge. The wire terminals of receptacle BRA100 are drilled 13/32 of an inch in diameter and will take any size cable up to and including No. 0, B & S gauge. The wire terminals of receptacle BR200 are drilled 5/8 of an inch in diameter and will take any size cable up to and including No. 0000, B & S gauge.

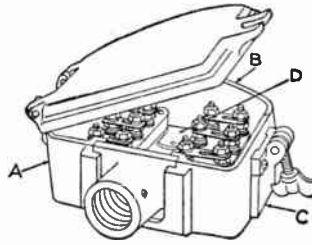
\*\*A spanner wrench will be furnished free with every shipment of BPA100 or BPA105 Plugs. If ordered separately or additionally, they can be furnished at 35 cents each.

**Type YE Cab Connection Condulets**

Schedule CR



For Rigid Conduit



For Flexible Conduit

Especially intended for use on locomotives. Provides an easy means for connecting the wiring system on the boiler to that in the cab.

A detachable hub plate is furnished which slides into grooves at the bottom of the condulet and may be quickly removed when door is open.

Also furnished with 4 bosses, any of which can be tapped for 1/2, 3/4 or 1-inch rigid conduit, but there are no hubs cast solid with the body.

The connection blocks furnished with these condulets are equipped with 14-24 R.S.A. Binding Nuts; 4-wire condulets are furnished with 2 connection blocks CB9222; 6-wire with two CB9223; 8-wire with

two CB9223 and one CB9222. The removable plates are made in 2 styles: One for rigid conduit and one for flexible conduit.

Positions of drilling and tapping in the bosses should be specified according to letters A, B, C, D, shown on cuts. A and C are the bosses on the left and right sides, B at the top and D at the back near the top. To order size by number: 1 is 1/2 inch, 2 is 3/4 inch, 3 is 1 inch. For example: YE1023-1233 (YE1023 is the catalogue number of the condulet with connection block).

Cadmium-galvanized is the standard finish.

No. of Wires	Size In.	Std. Pkg.	For Rigid Conduit		For Greenfield Double Strip Flexible Conduit	
			Cat. No.	Each	Cat. No.	Each
3	1/2	5	YE1023	\$6.20	YE1223	\$6.35
4	1/2	5	YE1024	6.80	YE1224	6.95
6	1/2	5	YE1026	7.50	YE1226	7.65
8	1/2	5	YE1028	8.60	YE1228	8.75
3	3/4	5	YE2023	6.25	YE2223	6.40
4	3/4	5	YE2024	6.85	YE2224	7.00
6	3/4	5	YE2026	7.55	YE2226	7.70
8	3/4	5	YE2028	8.65	YE2228	8.80
3	1	5	YE3023	6.30	YE3223	6.45
4	1	5	YE3024	6.90	YE3224	7.05
6	1	5	YE3026	7.60	YE3226	7.75
8	1	5	YE3028	8.70	YE3228	8.85
3	1 1/4	5	YE4023	6.35	YE4223	6.50
4	1 1/4	5	YE4024	7.00	YE4224	7.10
6	1 1/4	5	YE4026	7.70	YE4226	7.80
8	1 1/4	5	YE4028	8.80	YE4228	8.90

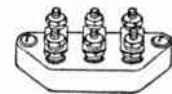
**Connection Blocks**

Schedule CR

**For Type YE Condulets**



2-Wire



3-Wire

Cat. No.	Each	Amp.	RATING Volt	No. of Wires	Std. Pkg.
CB9222	\$1.10	25	250	2	25
CB9223	1.30	25	250	3	25



## Condulet Reducers

Schedule CR



Used to reduce condulets from larger to smaller sizes.

Cadmium-galvanized is the standard finish.

Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
RE2818	\$.15	1/4 - 1/8	50	RE76	\$1.00	2 1/2 - 2	25
RE3818	.15	3/8 - 1/8	50	RE81	1.35	3 - 1/2	25
RE3828	.15	3/8 - 1/4	50	RE82	1.35	3 - 3/4	25
RE1108	.15	1/2 - 1/8	50	RE83	1.35	3 - 1	25
RE1208	.15	1/2 - 1/4	50	RE84	1.35	3 - 1 1/4	25
RE1308	.15	1/2 - 3/8	50	RE85	1.35	3 - 1 1/2	25
RE21	.15	3/4 - 1/2	50	RE86	1.35	3 - 2	25
RE31	.20	1 - 1/2	50	RE87	1.35	3 - 2 1/2	25
RE32	.20	1 - 3/4	50	RE91	2.00	3 1/2 - 1 1/2	10
RE41	.30	1 1/4 - 1/2	50	RE92	2.00	3 1/2 - 3/4	10
RE42	.30	1 1/4 - 3/4	50	RE93	2.00	3 1/2 - 1	10
RE43	.30	1 1/4 - 1	50	RE94	2.00	3 1/2 - 1 1/4	10
RE51	.40	1 1/2 - 1/2	50	RE95	2.00	3 1/2 - 1 1/2	10
RE52	.40	1 1/2 - 3/4	50	RE96	2.00	3 1/2 - 2	10
RE53	.40	1 1/2 - 1	50	RE97	2.00	3 1/2 - 2 1/2	10
RE54	.40	1 1/2 - 1 1/4	50	RE98	2.00	3 1/2 - 3	10
RE61	.50	2 - 1/2	25	RE101	2.75	4 - 1/2	10
RE62	.50	2 - 3/4	25	RE102	2.75	4 - 3/4	10
RE63	.50	2 - 1	25	RE103	2.75	4 - 1	10
RE64	.50	2 - 1 1/4	25	RE104	2.75	4 - 1 1/4	10
RE65	.50	2 - 1 1/2	25	RE105	2.75	4 - 1 1/2	10
RE71	1.00	2 1/2 - 1/2	25	RE106	2.75	4 - 2	10
RE72	1.00	2 1/2 - 3/4	25	RE107	2.75	4 - 2 1/2	10
RE73	1.00	2 1/2 - 1	25	RE108	2.75	4 - 3	10
RE74	1.00	2 1/2 - 1 1/4	25	RE109	2.75	4 - 3 1/2	10
RE75	1.00	2 1/2 - 1 1/2	25	.....	.....	.....	..

## Type UNY Condulet Unions

Schedule CE



For connecting conduit to a condulet.

Made of steel. Cadmium-galvanized is the standard finish.

Cat. No.	Each	Size In.	Std. Pkg.	Cat. No.	Each	Size In.	Std. Pkg.
UNY1M2	\$.50	1/2	50	UNY5M2	\$2.30	1 1/2	25
UNY2M2	.65	3/4	50	UNY6M2	3.65	2	10
UNY3M2	.95	1	25	UNY7M2	5.50	2 1/2	10
UNY4M2	1.90	1 1/4	25	UNY8M2	7.30	3	5

## Gaskets for Obround Series Condulets

Schedule CR



For use between condulets and metal covers or Obround adapters.

CATALOGUE NUMBERS			Each	Size Inches	Std. Pkg.
Rubber	Cork	Vellumoid			
Gask 571	Gask 671	Gask 771	\$.10	1/2	200
Gask 572	Gask 672	Gask 772	.10	3/4	100
Gask 573	Gask 673	Gask 773	.15	1	50
Gask 574	Gask 674	Gask 774	.20	1 1/4	25
Gask 575	Gask 675	Gask 775	.20	1 1/2	25
Gask 576	Gask 676	Gask 776	.25	2	25
Gask 578	Gask 678	Gask 778	.40	2 1/2 or 3	25
Gask 579	Gask 679	Gask 779	.50	3 1/2 or 4	25

## Threadless Condulet Reducers

Schedule CR

For Threadless Condulets



To assemble threadless reducer with a threadless condulet, remove grip ring from nut of the condulet, and substitute reducer for it.

Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	Thick Wall Cat. No.	Each	Thin Wall Cat. No.	Each
3/4 - 1/2	50	RE291	\$.29	RE241	\$.29
1 - 1/2	50	RE391	.38	RE341	.38
1 - 3/4	50	RE392	.43	RE342	.43
1 1/4 - 1/2	50	RE491	.51	RE441	.51
1 1/4 - 3/4	50	RE492	.54	RE442	.54
1 1/4 - 1	50	RE493	.58	RE443	.58
1 1/2 - 1/2	50	RE591	.57	RE541	.57
1 1/2 - 3/4	50	RE592	.64	RE542	.64
1 1/2 - 1	50	RE593	.67	RE543	.67
1 1/2 - 1 1/4	50	RE594	.81	RE544	.81
2 - 1/2	25	RE691	.75	RE641	.75
2 - 3/4	25	RE692	.85	RE642	.85
2 - 1	25	RE693	.92	RE643	.92
2 - 1 1/4	25	RE694	1.02	RE644	1.02
2 - 1 1/2	25	RE695	1.08	RE645	1.08

## Type UCA Threadless Connectors

For Screwing into the Threaded Hub of a Condulet



Type UCA Connector is for connecting a threaded condulet to a piece of threadless conduit. In cases where combinations of threaded and threadless condulets are used, it offers a simple method of branching from a threaded condulet to threadless conduit. In other cases where threadless condulets of a desired type are not available, threaded condulets can be used with Type UCA Connector, in order that threadless conduit may be used.

Cadmium-galvanized is the standard finish.

Thick Wall Schedule CR

Cat. No.	Each	Size Inches	Std. Pkg.	Cat. No.	Each	Size Inches	Std. Pkg.
UCA1	\$.14	1/2	200	UCA6	\$1.75	2	5
UCA2	.21	3/4	100	UCA7	2.52	2 1/2	5
UCA3	.48	1	50	UCA8	3.30	3	5
UCA4	.63	1 1/4	25	UCA9	4.50	3 1/2	5
UCA5	.78	1 1/2	10	UCA10	6.10	4	5

Thin Wall Schedule CM Regular

Cat. No.	NET PER 100			Size Inches	Std. Pkg.	Carton
	Std. Pkg.	Carton	Less Carton			
UCA3874	\$8.60	\$9.10	\$9.60	3/8	200	50
UCA174	5.55	5.90	6.25	1/2	200	50
UCA274	7.65	8.15	8.65	3/4	100	25
UCA374	12.95	13.75	14.65	1	50	10
UCA474	29.40	31.25	33.25	1 1/4	25	5
UCA574	37.65	40.00	42.65	1 1/2	10	5
UCA674	58.80	58.80	62.50	2	5	5
Watertight						
UCA164	\$6.10	\$6.50	\$6.95	1/2	200	50
UCA264	8.45	9.00	9.60	3/4	100	25
UCA364	14.45	15.40	16.40	1	50	10

\*Threaded end is 1/2 inch; threadless end is 3/8 inch.

## Type UCT Threadless Adapters

Schedule CR

Thin Wall



Type UCT Adapters make available all types of threaded condulets, covers, and wiring devices for use with electrical metallic tubing.

They may also be used to connect the tubing to condulet elbows, condulet unions, condulet reducers, threaded pipe, couplings, or to any fitting that has a standard female tapered thread of the corresponding size. Thus, for example, a standard conduit coupling and two Type UCT Adapters make a coupling suitable for use with electrical metallic tubing.

Cadmium-galvanized is the standard finish.

Cat. No.	Each	Size Inches	Std. Pkg.
UCT1	\$.06	1/2	200
UCT2	.08	3/4	100
UCT3	.12	1	50

**Type UCC Threadless Conduit Unions or Couplings**

For Connecting Threaded or Threadless Conduit

Cadmium-galvanized is the standard finish.

**Thick Wall**  
*Schedule CR*

Cat. No.	Each	Size Inches	Std. Pkg.
UCC1	\$.23	1/2	200
UCC2	.34	3/4	100
UCC3	.45	1	50
UCC4	.79	1 1/4	25
UCC5	1.10	1 1/2	10
UCC6	2.00	2	5
UCC7	3.07	2 1/2	5
UCC8	4.90	3	5
UCC9	6.95	3 1/2	5
UCC10	9.40	4	5



**Thin Wall**  
*Schedule CM*

**Regular**

Cat. No.	NET PER 100			Size Inches	Std. Pkg.	Carton
	Std. Pkg.	Car-ton	Less Carton			
UCC384	\$8.60	\$9.10	\$9.60	*3/8	200	50
UCC14	6.60	7.00	7.50	1/2	200	50
UCC24	8.80	9.40	10.00	3/4	100	25
UCC34	12.95	13.75	14.65	1	50	10
UCC44	29.40	31.25	33.25	1 1/4	25	5
UCC54	37.65	40.00	42.65	1 1/2	10	5
UCC64	58.80	58.80	62.50	2	5	5

**Watertight**

UCC164	\$7.15	\$7.65	\$8.15	1/2	200	50
UCC264	9.65	10.25	10.95	3/4	100	25
UCC364	14.45	15.40	16.40	1	50	10

\*Threaded end is 1/2 inch; threadless end is 3/8 inch.

**Type UCE Threadless Conduit End Bushings**

*Schedule CR*



An easily applied and simple means of bushing the end of either threadless or threaded conduit. Provided with a composition bushing to protect wires leaving end of conduit.

Cadmium-galvanized is the standard finish.

Size In.	Std. Pkg.	Thick Wall		Thin Wall	
		Cat. No.	Each	Cat. No.	Each
1/2	100	UCE19	\$.35	UCE14	\$.35
3/4	75	UCE29	.45	UCE24	.45
1	50	UCE39	.65	UCE34	.65
1 1/4	40	UCE49	.90	UCE44	.90
1 1/2	20	UCE59	1.25	UCE54	1.25
2	15	UCE69	1.80	UCE64	1.80
2 1/2	10	UCE79	2.55	.....	.....
3	5	UCE89	5.15	.....	.....
3 1/2	5	UCE99	6.50	.....	.....
4	5	UCE109	8.75	.....	.....

**Type UCB Threadless Box Connectors**

*Schedule CR*

**Thick Wall**



Type UCB Threadless Box Connector is for use in connecting threadless conduit to outlet boxes, panel boxes and switch boxes. Assembles to box with a chase bushing which provides shallow and smoothly bushed outlet for wires on inside of box.

Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	Cat. No.	Each
1/2	200	UCB1	\$.14
3/4	100	UCB2	.21
1	50	UCB3	.48
1 1/4	25	UCB4	.63

**Condulet Self-Threading Connectors and Unions**

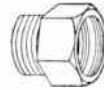
*Schedule CR*

Type CCT Self-Threading Connectors and CCU Self-Threading Unions are provided with a male pipe threaded nipple at one end to fit a condulet hub or other standard threaded device. The other end is provided with an especially designed fine thread that cuts its own thread on to the pipe with a water and gastight connection, making a perfect ground bond with the strength of pipe threads.

Cadmium-galvanized is the standard finish.

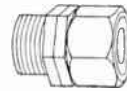
**Type CCT Connectors**

Cat. No.	Each	Size Inches	Std. Pkg.
CCT1	\$.25	1/2	25
CCT2	.30	3/4	25
CCT3	.35	1	25
CCT4	1.10	1 1/4	10
CCT5	1.40	1 1/2	10



**Type CCU Unions**

Cat. No.	Each	Size Inches	Std. Pkg.
CCU1	\$.75	1/2	25
CCU2	.85	3/4	25
CCU3	1.00	1	25
CCU4	3.50	1 1/4	10
CCU5	4.50	1 1/2	10



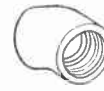
**45-Degree Condulet Elbows**

**Female**

*Schedule CE*

Cadmium-galvanized is the standard finish.

Cat. No.	Each	Size In.	Std. Pkg.
EL1	\$.20	1/2	200
EL2	.25	3/4	100
EL3	.30	1	50
EL4	.65	1 1/4	25
EL5	.75	1 1/2	10
EL6	1.20	2	5
EL7	2.70	2 1/2	5
EL8	3.15	3	5
EL9	4.95	3 1/2	5
EL10	5.55	4	5



**90-Degree Condulet Elbows**

*Schedule CE*



**Male**

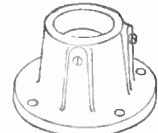
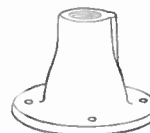
**Female**

Cadmium-galvanized is the standard finish.

Size Inches	Std. Pkg.	Male		Female	
		Cat. No.	Each	Cat. No.	Each
1/2	200	EL195	\$.25	EL19	\$.25
3/4	100	EL295	.35	EL29	.35
1	50	EL395	.45	EL39	.45
1 1/4	25	EL495	.75	EL49	.75

**Condulet Pedestals**

*Schedule CR*



**Threaded**

**Not Threaded**

A rigid support for condulets mounted on conduit that projects through the floor.

Cadmium-galvanized is the standard finish.

Size In.	Std. Pkg.	3 Inches High		6 Inches High	
		Cat. No.	Each	Cat. No.	Each
3/4	25	Ped223	\$1.20	.....	.....
1	25	Ped333	1.45	.....	.....
1 1/4	25	Ped443	1.70	.....	.....
1/2	25	Ped13	\$.95	Ped16	\$1.75
3/4	25	Ped23	1.20	Ped26	2.00
1	25	Ped33	1.45	Ped36	2.25
1 1/4	25	Ped43	1.70	Ped46	2.50
1 1/2	25	Ped53	1.95	Ped56	2.75
2	15	Ped63	2.20	Ped66	3.00
2 1/2	15	Ped73	2.45	Ped76	3.25

## Bryant New Wrinkle Key Socket Bodies



**No. 10, Single-Pole**

Cat. No.	Per 100	Watts	Volts	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
10	\$18.94	250	250	25	250	44

**No. 12, Single-Pole High Capacity**

12	\$52.12	660	250	25	250	44
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**No. 13 Bryant New Wrinkle Keyless Socket Bodies**



660 Watts, 250 Volts

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
13	\$16.84	25	250	35

**No. 15 Bryant New Wrinkle Single-Pole Pull Socket Bodies**



250 Watts, 250 Volts

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
15	\$25.26	25	250	42

**No. 34 Bryant New Wrinkle Single-Pole Push Button Socket Bodies**



660 Watts, 250 Volts

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
34	\$21.06	25	250	34

## Bryant New Wrinkle Pull Switch Bodies

**No. 20 Single-Pole**  
3 Amperes, 125 Volts  
1 Ampere, 250 Volts

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
20	\$78.70	10	20	4

**No. 50 Single-Pole**  
6 Amperes, 125 Volts  
3 Amperes, 250 Volts

50	\$92.00	10	20	4
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**No. 25 Single-Pole**  
3 Amperes, 125 Volts  
1 Ampere, 250 Volts

25	\$82.64	10	20	4
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**No. 27 Electrolier**  
3 Amperes, 125 Volts  
1 Ampere, 250 Volts

27	\$123.24	10	20	4
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**No. 29 Bryant New Wrinkle Spartan Receptacle Bodies**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
29	\$33.42	5	20	2

**No. 631 Bryant Keys for Brylock Sockets**



Cat. No.	Per 100	Car- ton	Weight Pounds per Carton
631	\$50.50	1	.....

## Bryant New Wrinkle Brass Caps



**No. AA**

**No. AA 1/8-Inch Female**

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
AA	\$8.42	25	250	13



**No. AB**

**No. AB 1/4-Inch Female**

AB	\$26.14	25	25	2
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**No. AC**

**No. AC 3/8-Inch Female**

AC	\$11.02	25	100	6
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**No. AD**

**No. AD 1/2-Inch Female**

AD	\$31.04	25	50	4
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**No. AG**

**No. AG 3/4-Inch Male**

AG	\$26.14	25	50	2
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**No. AM**

**No. AM 1/2-Inch Female Angle**

AM	\$34.30	25	50	3
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**No. AP**

**No. AP 3/8-Inch Female Angle**

AP	\$39.18	25	25	2
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**No. AQ**

**No. AQ Cord Grip**

AQ	\$22.28	25	100	8
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**No. AT**

**No. AT Pendant Cap**

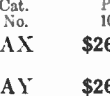
AT	\$8.42	25	250	8
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**No. AU**

**No. AU Strain Relief Pendant Cap**

AU	\$14.84	25	100	4
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**No. CX**

**No. CX 1/2-Inch Female**

CX	\$10.42	25	100	5
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## Bryant New Wrinkle Brass Bases

**No. BL 3/4-Inch Box Base**



Cat. No.	Per 100	O. D. Base In.	Support- ing Screw Spacings Inches	Car- Std. ton Pkg.	Wt., Lbs. Std. Pkg.
BL	\$54.94	3 3/8	2, 2 3/4	10	50 25

**No. BM 4-Inch Box Base**

BM	\$99.48	4 1/2	2 3/4, 3 1/2	5	50 45
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## Bryant New Wrinkle Porcelain Bases



**No. AX**



**No. AZ**

**No. AX Slotted Base**

Cat. No.	Per 100	O. D. Base Inches	Support- ing Screw Spacing Inches	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
AX	\$26.72	2 1/16	1 1/8	10	100	19

**No. AY Small Concealed Base**

AY	\$26.72	2 1/16	1 1/8	10	100	18
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**No. AZ Large Concealed Base**

AZ	\$34.16	2 3/4	2 3/4	10	100	32
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**No. AW Bryant New Wrinkle Porcelain Cleat Bases**



Supporting screw spacing, 2 5/8 inches.

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
AW	\$34.16	10	100	29

**No. BA Bryant New Wrinkle Porcelain Angle Concealed Bases**



Screw spacings, 1 1/8 inches.

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
BA	\$34.16	10	100	22



**Hemco Brass Shell Sockets**  
Standard Size



No. HT10

No. HA30

No. HA15

**Key Sockets**  
250 Watts, 250 Volts

Cat. No.	PER 100			Style Cap	Car-ton	Std. Pkg.	Pkg. Lbs.
	Brush Brass	Bright Dipped	Nickel or Gun Metal				
HA10	\$17.90	\$16.90	\$21.90	1/8-Inch Cap..	25	250	53
HT10	17.90	16.90	21.90	Pendent Cap..	25	250	46
HX10	19.90	18.90	23.90	1/8-Inch Cap, Side Outlet.	25	250	53

**Turn Knob Sockets**

250 Watts, 250 Volts							
HA30	\$17.90	\$16.90	\$21.90	1/8-Inch Cap..	25	250	53
HT30	17.90	16.90	21.90	Pendent Cap..	25	250	46
HX30	19.90	18.90	23.90	1/8-Inch Cap, Side Outlet.	25	250	53

**Pull Sockets**

250 Watts, 250 Volts							
HA15	\$23.16	\$22.16	\$27.16	1/8-Inch Cap..	25	250	52
HT15	23.16	22.16	27.16	Pendent Cap..	25	250	48
HX15	25.16	24.16	29.16	1/8-Inch Cap, Side Outlet.	25	250	56

**Push Sockets**

250 Watts, 250 Volts							
HA32	\$18.94	\$17.94	\$22.94	1/8-Inch Cap..	25	250	45
HT32	18.94	17.94	22.94	Pendent Cap..	25	250	41
HX32	20.94	19.94	24.94	1/8-Inch Cap, Side Outlet.	25	250	56



No. HA13



Nos. HX32 and HX34

**Keyless Sockets**

660 Watts, 250 Volts							
HA13	\$15.78	\$14.78	\$19.78	1/8-Inch Cap..	25	250	46
HT13	15.78	14.78	19.78	Pendent Cap..	25	250	42
HX13	17.78	16.78	21.78	1/8-Inch Cap, Side Outlet.	25	250	51

**Push Sockets**

660 Watts, 250 Volts							
HA34	\$20.00	\$19.00	\$24.00	1/8-Inch Cap..	25	250	45
HT34	20.00	19.00	24.00	Pendent Cap..	25	250	41
HX34	22.00	21.00	26.00	1/8-Inch Cap, Side Outlet.	25	250	56

No bodies or caps are sold separately.

**Bryant Wrinklet Electrolier Socket Bodies**

**No. 80 Single-Pole Key**



No. 80

250 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
80	\$18.94	25	250	35

**No. 81 Single-Pole Push-Button**



No. 81

660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
81	\$21.06	25	250	30

**No. 85 Single-Pole Pull**

250 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
85	\$25.26	25	250	35

**No. 95 Single-Pole Keyless Short Pattern**

660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
95	\$14.74	25	250	23



No. 85



No. 95

**Bryant Wrinklet Electrolier Caps**



No. WA

**No. WA 1/8-Inch Female**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WA	\$8.42	25	250	10



No. WB

**No. WB 1/4-Inch Female**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WB	\$26.14	25	250	2



No. WC

**No. WC 3/8-Inch Female**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WC	\$17.90	25	50	3



No. WE

**No. WE 1/8-Inch Male**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WE	\$16.34	25	25	1



No. WG

**No. WG 3/8-Inch Male**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WG	\$26.14	25	25	1



No. WM

**No. WM 1/8-Inch Female Angle**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WM	\$34.30	25	50	3



No. WP

**No. WP 3/8-Inch Female Angle**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WP	\$39.18	25	25	2



No. WT

**No. WT Pendent Cap**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WT	\$8.42	25	50	2

With 1 1/2-inch hole.

**No. WX 1/8-Inch Female**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
WX	\$10.42	25	50	2

With side entrance bushing.

**Hemco Brass Shell Sockets**  
Electrolier Size



No. HA95



Nos. HX81 and HX82

**Keyless Sockets**  
660 Watts, 250 Volts

Cat. No.	PER 100			Style Cap	Car-ton	Std. Pkg.	Pkg. Lbs.
	Brush Brass	Bright Dipped	Nickel or Gun Metal				
HA95	\$13.68	\$12.68	\$17.68	1/8-Inch Cap..	25	250	32
HT95	13.68	12.68	17.68	Pendent Cap..	25	250	32
HX95	15.68	14.68	19.68	1/8-Inch Cap, Side Outlet.	25	250	32

**Push Sockets**  
660 Watts, 250 Volts

250 Watts, 250 Volts							
HA81	\$20.00	\$19.00	\$24.00	1/8-Inch Cap..	25	250	42
HT81	20.00	19.00	24.00	Pendent Cap..	25	250	42
HX81	22.00	21.00	26.00	1/8-Inch Cap, Side Outlet.	25	250	42
HA82	\$18.94	\$17.94	\$22.94	1/8-Inch Cap..	25	250	42
HT82	18.94	17.94	22.94	Pendent Cap..	25	250	42
HX82	20.94	19.94	24.94	1/8-Inch Cap, Side Outlet.	25	250	42

**Bryant Twin Sockets**

**Keyless Sockets**  
Each Outlet 660 Watts, 250 Volts



No. 46750

Length of sockets, 2 1/16 inches.

Cat. No.	Per 100	Bushing In.	Car-ton	Std. Pkg.	Wt., Lbs.
46750	\$80.80	1/8	10	10	2
46751	80.80	3/8	10	10	2

**Pull Sockets**

Length, 3 3/16 inches.

Combined Load 250 Watts, 250 Volts  
Both outlets controlled simultane-ously.

Cat. No.	Per 100	Bushing In.	Car-ton	Std. Pkg.	Wt., Lbs.
4051	\$119.18	1/8	10	10	3
4052	131.30	3/8	10	10	3

Each Outlet 250 Watts, 250 Volts

First pull, outlet No. 1 alone; 2nd pull, both outlets in multiple; 3rd pull, No. 1 off, No. 2 on; 4th, both off.

Cat. No.	Per 100	Bushing In.	Car-ton	Std. Pkg.	Wt., Lbs.
4005	\$135.34	1/8	10	10	3
4006	147.46	3/8	10	10	3



Nos. 4051 and 4005

## Bryant Brass Titan Socket Caps and Bodies



The connection between the socket body and cap is effected by means of a threaded ring which engages with a corresponding thread in the shell.



The threaded ring is packed with the socket body.



No. TA-4315 Showing Method of Fastening Shell to Cap

Each cap will fit all bodies.



No. TA



No. TT

### Titan Brass Caps

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std.
TA	\$8.08	1/8-Inch Cap	25	250	17
TB	\$19.80	1/4-Inch Cap	25	100	12
TC	\$14.14	3/8-Inch Cap	25	100	12
TJ	\$18.38	Cord Grip 1/4 to 3/8-Inch Cap	25	100	7
TQ	\$18.38	Cord Grip 3/8 to 1/2-Inch Cap	25	100	7
TT	\$8.08	Pendent Cap	25	250	13

### Titan Brass Socket Bodies with Rings (without Caps)

250 Watts, 250 Volts

4310	\$28.28	Key, Single-Pole	25	250	44
4315	\$40.40	Pull, Single-Pole	25	250	41

### High Capacity—660 Watts, 250 Volts

4312	\$48.22	Key, Single-Pole	25	250	48
4313	\$25.26	Keyless	25	250	35
4314	\$28.28	Push-Button	25	250	40

## Bryant Templus Titan Socket Bodies and Caps



No. LA



No. LC



No. LG



No. LT

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std.
LA	\$8.08	1/8-Inch Female Cap	10	100	5
LC	\$14.14	3/8-Inch Female Cap	10	100	6
LG	\$18.38	Cord Grip Cap for 3/8 to 1/2-Inch Cord	10	100	4
LT	\$8.08	Pendent Cap	10	100	6

### Titan Bodies with Rings (without Caps)

250 Volts



No. 4710



No. 4713



No. 4714



No. 4715

4710	\$28.28	Key, 250 Watts	10	100	19
4712	\$48.22	Key, S.P. High Cap, 660 Watts	10	100	19
4713	\$25.24	Keyless, 660 Watts	10	100	18
4714	\$28.28	Push, 660 Watts	10	100	17
4715	\$40.40	Pull, 250 Watts	10	100	19

## Bryant Electrolier Keyless Sockets

660 Watts, 250 Volts



No. 66237

The cap and shell screw together. Standard finish is brush brass.

Cat. No.	Per 100	Cap In.	Carton	Std. Pkg.	Wt., Lbs. Std.
66237	\$56.56	1/8	50	250	39
50766	\$65.04	3/8	10	100	17

## Bryant Interchangeable Cold Molded Black Composition Socket Caps and Bodies

These sockets, made of black composition, are suitable for installation in many cases where metal shell sockets may not prove satisfactory. Each cap will fit either body.

### Socket Caps



FA



FQ



FT

Wash nickel is standard finish on exposed metal parts.

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std.
FA	\$22.62	1/8-Inch Metal Bushing	10	100	14
FC	\$27.14	3/8-Inch Metal Bushing	10	100	15
FQ	\$28.28	Cord Grip 3/8 to 1/2-Inch	10	100	17
FT	\$11.32	Pendent Cap	10	100	11



No. 3770

### Socket Bodies

With Groove for Weatherproof Shade-Holders



No. 3773

3770	\$29.42	Key, 250 Watts, 250 Volts	10	100	26
3773	\$26.02	Keyless, 660 Watts, 250 Volts	10	100	17

## Bryant Bayonet (Edi-Swan) Medium Base Devices

660 Watts, 250 Volts, (Not N. E. C.)

### Keyless Socket with Shade-Holder Ring

Complete with 1/8-inch French thread cap (11 m/m 7 1/2 threads per c/m).

Regular finish is plain brass dipped, which will be furnished when no finish is specified. All other finishes, including brush brass and polished brass are special.

Brush brass will be charged at same price as polished brass.



Cat. No.	Per 100	Carton	Std. Pkg.	Wt., Lbs. Std.
567	\$42.42	25	250	30

### Composition Attachment Plug

570	\$24.24	25	100	10
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### Ediswan to Spartan Composition Adapter

707	\$24.24	25	100	5
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## No. 3707 Bryant Porcelain Lined Aluminum Heavy Duty Sockets

With Shade-Holder Threads  
660 Watts, 660 Volts

The aluminum shell is threaded on the end to receive a special shadeholder, No. 3700.

This device is fitted with lanced screw shell which prevents loosening of lamps from vibration.

Diameter of body, 1 1/2 inches.

Length, 2 1/2 inches.

Diameter of shade-holder flange, 1 1/2 inches.

Carton, 10. Standard package, 50; weight, 20 pounds.

No. 3707, 1/2-Inch Female Cap. per 100 \$70.70



Unassembled

**Bryant Candelabra Sockets**

75 Watts, 125 Volts

**Pull Candle Socket**

Composition with Paper Jacket and Female Thread Bushing

The bushing of this socket is threaded for 1/8-inch iron pipe, .405-inch outside diameter, 27 threads per inch.

The standard chain is No. 3 size and extends 5 inches below the composition. The standard finish of chain is brush brass, but polished or dull nickel finish will be furnished without extra charge.

Outside diameter, 1 3/16 inch. Length over all, 2 15/32 inches. Regularly supplied with a paper insulating jacket which covers the mechanism and screw shell. Outside diameter of jacket, 2 9/32 inch.



With Jacket On

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
540	\$106.06	25	50	4

**Key Socket with Wrinkle Style Shell Fastening**

With 1/8-Inch Cap



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
434	\$48.42	25	100	10

**Keyless Socket with Threaded Shell Fastening**

With 1/8-Inch Cap



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
321	\$41.10	25	100	7

**Pull Socket with Wrinkle Style Shell Fastening**

With 1/8-Inch Cap



The standard length of chain is 4 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
386	\$77.78	10	50	5

**Composition Decorative Socket With Pendant Cap**

Made in green composition and fitted with 6 inches of No. 18 B. & S. green braid, stranded rubber-covered wire.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
323	\$24.88	25	100	4

**Porcelain Keyless Socket With Male Thread Stud**

Supporting stud is 5/16 inch outside diameter, 27 threads per inch.

Outside diameter of porcelain, 1 1/16 inch. Length of porcelain, 1 1/8 inches; length over all, 1 3/8 inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
328	\$29.70	50	100	4

**With Female Thread Bushing**

Bushing is threaded for 1/8-inch iron pipe, .405-inch outside diameter, 27 threads per inch.

Outside diameter of porcelain, 1 1/16 inch. Length of porcelain 1 1/8 inches; length over all, 1 25/32 inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
347	\$23.02	50	100	5

**Bryant Miniature and Candelabra Receptacles**

75 Watts, 125 Volts  
Cleft Base  
Candelabra

Outside diameter of base, 1 1/32 inches. Thickness of base, 1/2 inch. Height, 1 1/8 inches. Supporting screw spacing, 1 1/16 inches.



No. 367

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
367	\$18.66	25	100	10

**Miniature**

Outside diameter of base, 1 3/16 inches. Thickness of base, 9/32 inch. Height, 3/4 inch. Supporting screw spacing, 1 5/16 inch.



No. 9445

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*9445	\$14.00	25	200	9

**Candelabra**

Outside diameter of base, 1 11/32 inches. Thickness of base, 5/16 inch. Height, 7/8 inch. Supporting screw spacing, 1 1/16 inches.



No. 325

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9446	\$14.00	25	200	13

**Candelabra with Oblong Base**

Base, 1 9/16 x 1 inch. Thickness of base, 1 7/32 inch. Height, 1 9/32 inch. Supporting screw spacings, 1 1/32 by 1 1/32 inch.

**Porcelain Base**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
325	\$15.56	25	100	10

**Composition Base**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*612	\$35.36	10	100	9

**Miniature for Metal Signs**

The hole required for this receptacle is 2 1/32 inch in diameter.

Depth, 1 3/16 inch. Supporting screw spacing, 1 1/16 inches.



No. 612

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
387	\$28.00	10	100	8

**Candelabra for Metal Signs**

Size hole required, 3/4 inch in diameter. Depth, 1 inch. Screw spacing, 1 1/16 inches.

The wires clear the supporting surface by 1 1/16 inch.



No. 388

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
388	\$28.00	10	100	8

**With Removable Ring for Metal Signs**

**Miniature**

Size hole required, 3/4 inch in diameter. Diameter, 1 3/16 inches. Depth, 5/8 inch. Thickness of ring, 1/4 inch.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
389	\$31.10	25	100	8

**Candelabra**

Size hole required, 3/4 inch in diameter. Diameter, 1 3/16 inch. Depth, 7/8 inch. Thickness of ring, 1/4 inch.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
390	\$28.28	25	100	9

**Candelabra for Wooden Signs**

Size hole required, 1 5/16 inch in diameter. Thickness of back, 5/8 inch. Diameter of back, 1 3/8 inches. Length of neck, 7/8 inch. Supporting screw spacing, 1 5/32 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*25705	\$37.32	10	100	12



No. 25705

\*Not listed as standard by Underwriters' Laboratories.

**Bryant Insulating and Splicing Links**



No. 811



No. 513

Standard finish is brush brass, which will be supplied when no other finish is specified.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
513	\$11.32	Insulating Link for No. 3 or No. 6 Chain.....	100	100	1/2
810	3.54	Splicing Link to Connect No. 6 Chain to Small Cord.....	200	200	1/4
811	3.54	Splicing Link for No. 3 Chain..	200	200	1/2



## Bryant Intermediate Base Sockets

### Socket Caps

### Green Templus Pendent Sockets 75<sup>3</sup>/<sub>4</sub> Watts, 250 Volts



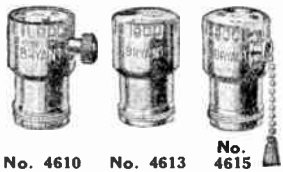
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
1A	\$12.12	25	100	3
1T	\$12.12	25	100	2
1M	\$29.70	25	50	4

1/8-Inch

Pendent

1/8-Inch Angle

### Socket Bodies



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
4610	\$36.30	25	100	8
4613	\$25.26	25	100	8

Key

75 Watts, 125 Volts

Keyless

75 Watts, 250 Volts

Pull

75 Watts, 125 Volts

4615	\$58.58	25	100	7
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Above caps and bodies are Wrinkle type and are interchangeable.

Standard finish is brush brass. Standard length of chain on pull socket bodies is 4 1/2 inches.

### Candle Pull Sockets

75 Watts, 125 Volts



Composition, with paper jacket.

Has 1/8-inch female thread bushing.

Outside diameter of sleeve, 2 3/8 inch; over-all length, 2 1/2 inches. Standard length of chain, 5 inches.

9640	\$106.06	25	100	8
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### Keyless Candle Sockets

75 Watts, 250 Volts



Composition.

Has 1/8-inch female thread bushing.

Adjustable, 3 1/2 to 5 inches long. Outside diameter of paper jacket, 1/2 inch.

9652	\$20.20	25	100	9
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Weatherproof. Has 5-inch leads of No. 18 stranded rubber covered weatherproof wire.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
9650	\$16.96	25	100	4

### Porcelain Cleat Receptacles 75 Watts, 250 Volts



For surface wiring. Diameter base, 1 1/2 in.; over lugs, 1 7/8 in.; overall height, 1 1/8 in.; screw spacing, 1 1/16 in.

9653	\$16.96	25	100	15
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### Porcelain Sign Receptacles

75 Watts, 250 Volts  
No. 9663



For metal signs. Two screw mounting, screw terminals.

Fits 1-inch holes. Depth of back, 1 3/8 in. Equipped with No. 8-32, 1/2-in. long, bronze supporting screws spaced 1 3/8 in.

9663	\$16.96	25	100	13
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No. 9690



For metal signs. Screw ring, screw terminals.

Fits 1 1/16-in. holes; outside diameter of both screw ring and body, 1 3/8 in. Depth of back, 1 inch.

9690	\$16.96	25	100	15
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### Adapters



Medium base to intermediate base adapter.

9691	\$14.14	25	100	4
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## Bryant Prefocusing Sockets and Receptacles

These devices are used with low voltage lamps, for instance, 12 volts for airplane installation and 32 volts for landing fields. Other lamps used are 110-watt 115-volt T8 1/2 bulb and 200-watt 115-volt T10 bulb coiled coil-filament projection lamps.



No. 3740



No. 3741

These wattages represent the largest demand.

### For Medium Prefocusing Lamps

660 Watts, 250 Volts  
Black Composition, for Surface or Concealed Wiring

Cat. No.	Per 100	Height Over All Inches	Screw Centers Inches	Diam. Inches	Car-ton	Std. Pkg.	Wt. Lbs.
3740	\$127.26	1 7/8	2	...	10	100	30
3741	\$94.74	2 5/16	...	1 3/4	10	100	38
3742	90.80	1 7/8	1 5/16	1 3/4	10	100	38

### For Mogul Prefocusing Lamps 2500 Watts, 250 Volts



No. 3841



No. 3842

Cat. No.	Per 100	Black	Lacquered	Porcelain	Height Over All Inches	Screw Centers Inches	Diam. Inches	Car-ton	Std. Pkg.	Wt. Lbs.
3841	\$353.50	4	...	*2 5/16	4	...	5	50	64	64
3842	353.50	2 13/16	3	...	2 13/16	3	5	50	50	50

\*Diameter including flare, 2 13/16 inches.

## Bryant Marine, Railway and Industrial Lamp Receptacles

### Heavy Duty

With Templus Base and Lamp Grip  
Diameter of base, 2 inches. Height, 1 13/16 inches. Supporting screw spacing, 1 3/8 inches.

Key receptacle, center of base to end of key, 1 11/16 inches.

Single Pole Key, 250 Watts, 250 Volts  
Regularly supplied with two 1-inch 8x32 round head pointed brass screws.

Center of base to end of key, 1 11/16 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
4160	\$49.50	10	100	25

### Keyless, 660 Watts, 250 Volts

Regularly supplied with two 3/4-inch 8x32 round head pointed brass screws.

4161	\$35.36	10	100	24
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### Templus Screw Shell Insulator

For Nos. 4160 and 4161.

4260	\$31.82	10	100	6
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### Watertight Keyless Receptacle

With Composition Base  
660 Watts, 250 Volts

Has one binding screw on each terminal.

Diameter, 2 3/4 inches. Height over all 1 3/4 inches. Height above mounting surface, 7/8 inches. Supporting screw spacing, 2 5/16 inches. There are four supporting screw holes spaced 90° apart. Screws for mounting not furnished.

Regularly furnished without sealing compound over terminal plates and fastening screws.

4146	\$49.50	10	100	36
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No. 4146

**Bryant Porcelain Socket Bodies**



No. 70

**No. 70 Single-Pole Key**

250 Watts, 250 Volts					
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
70	\$29.42	10	100	26	



No. 71

**No. 71 Push-Button**

660 Watts, 250 Volts					
71	\$41.00	10	100	30	



No. 73

**No. 73 Keyless**

660 Watts, 250 Volts					
73	\$26.02	10	100	16	



No. 75

**No. 75 Single-Pole Pull**

250 Watts, 250 Volts					
No. 513 Insulating Link is inserted in the chain.					
75	\$66.74	10	100	31	

**Bryant Porcelain Caps**



No. PA

**No. PA 1/4-Inch Female Brass**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
PA	\$22.62	10	100	13	



No. PC

**No. PC 3/8-Inch Female Brass**

PC	\$27.14	10	100	14	
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No. PD

**No. PD 1/2-Inch Female Brass**

PD	\$38.18	10	100	12	
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No. PP

**No. PP 3/8-Inch Female Brass Angle**

PP	\$85.00	10	100	23	
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No. RW

**No. RW 1/2-Inch Female Brass Angle**

RW	\$90.00	10	100	28	
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**No. PQ Cord Grip**

For from 3/8 to 1/2-inch cord.

PQ	\$28.28	10	100	18	
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No. PT

**No. PT Pendent**

With 1 1/2-inch cord hole.

PT	\$11.32	10	100	11	
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**No. RT Pendent**

With 1/2-inch cord hole.

RT	\$11.32	10	100	13	
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**Bryant Porcelain Bases**



No. PZ



No. RL

**No. PZ Concealed Base**

This base will fit Type No. 500 Adaptibox.

Cat. No.	Per 100	O. D. Inches	Supporting Screw Spacings Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
PZ	\$21.22	2 3/4	1 1/8, 2 1/4	10	100	37	

**No. RL 3 1/4-Inch Box Base**

RL	\$33.94	3 5/8	2 3/4	10	50	22	
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**No. RM 3 1/4 and 4-Inch Box Base**

RM	\$45.24	4 1/16	2 3/4, 3 1/2	5	50	37	
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**Bryant Surface and Outlet Box Receptacles**

**With Binding Screws**



No. 4104

These receptacles are flat on the back and are therefore suitable for use either on outlet boxes or without them. They are also approved for use on walls or ceilings containing metal lathing and upon metal surfaces.

**For 3 1/4-Inch Outlet Boxes**

Diameter of base, 3 5/8 inches. Height, 1 17/32 inches. Supporting screw spacing, 2 3/4 inches.

Cat. No.	Per 100	Description	Watts	Volts	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
4102	\$70.00	Keyless.....	660	250	1	50	29	

**For 3 1/4 and 4-Inch Outlet Boxes**

Diameter of base, 4 1/2 inches. Height, keyless, 1 17/32 inches; pull, 2 inches. Supporting screw spacings, 2 3/4 and 3 1/2 inches.

4100	\$84.84	Keyless.....	660	250	1	50	43	
4104	183.82	Pull.....	250	250	1	50	60	

**Bryant Porcelain Outlet Box Receptacles With Shade-Holder Groove**



No. 4278

Can be mounted on standard 3 1/4 and 4-inch outlet boxes.

Diameter of base, 4 5/8 inches. Height, 2 5/8 inches. Supporting screw spacing, 2 3/4 to 3 1/2 inches on centers.

Pull chain receptacles are fitted with nickel chains and tassel pendants but will be furnished with brush brass chains at no extra charge.

**Keyless—600 Watts, 250 Volts**

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
4273	\$78.78	Keyless Receptacle.....	1	50	62	

**Pull—250 Watts, 250 Volts**

4275	\$137.36	6 1/2-Inch Chain.....	1	50	58	
4278	141.40	6 1/2-Inch Chain, 4-Foot Cord.....	1	50	56	

**Bryant Porcelain Receptacles for Outlet Boxes**

660 Watts, 600 Volts



The hole required for this receptacle is 1 11/16 inches in diameter.

Diameter over lugs, 2 5/8 inches.

Depth, 1/2 inch.

Supporting screw spacing, 2 1/8 inches.

Furnished with 6 inch wire leads.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
59107	\$20.20	10	100	34	

## Bryant Porcelain Receptacles for 3 1/4-Inch Outlet Boxes

660 Watts, 600 Volts

Furnished with 6-inch wire leads.

Longer wire leads furnished at 9 cents extra per foot each conductor.

Machine screws for mounting are furnished.



No. 4110

### With Black Japanned Flat Cover

Cat. No.	Per 100	Out. Diam., In.	Screw Spacings, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4110	\$21.06	3 1/2	2 3/4	1	100	58

## Bryant Porcelain Receptacles for 4-Inch Outlet Boxes

660 Watts, 600 Volts

Furnished with 6-inch wire leads. Longer wire leads furnished at 9 cents extra per foot each conductor.

Machine screws for mounting are furnished.



No. 4113

### With Black Japanned Raised Cover

Cat. No.	Per 100	Outside Diam., In.	Screw Spacings, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4113	\$23.16	4 7/8	3 1/2	1	100	78

## Hemco Outlet Box Receptacles



No. H73



No. H227

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
H73	\$15.78	With Binding Screws, for 3 1/4-Inch Box.....	10	100	49
H74	17.90	With Binding Screws, for 4-Inch Box.....	5	100	63
H227	16.84	For 3 1/4-Inch Box.....	5	100	62
H228	21.06	For 4-Inch Box.....	5	50	43



No. H167



No. H188

### For 3 1/4-Inch Outlet Box

H165	\$27.36	6-Inch Chain, Fluted Ring.....	10	50	40
H167	31.58	Chain and Ins., Fluted Ring.....	10	50	37
H168	31.58	Chain and Cord, Fluted Ring..	10	50	38

### For 4-Inch Outlet Box

H185	\$38.00	6-Inch Chain, Fluted Ring.....	10	50	64
H187	42.00	Chain and Ins., Fluted Ring...	10	50	66
H188	42.00	Chain and Cord, Fluted Ring..	10	50	66

## No. 50717 Bryant Pony Wall Keyless Sockets With Base for Concealed Work

660 Watts, 250 Volts

Diameter of base, 2 inches. Height, 2 inches. Supporting screw spacing, 1 1/4 inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
50717	\$37.12	10	100	22

## Bryant Porcelain Cleat Receptacles

With Shade-Holder Groove  
660 Watts, 250 Volts

Length, 3 1/16 in. Width, 1 in. Height, 2 1/4 in. Supporting screw spacings, 7/16 by 3/16 in.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
58300	\$43.56	5	100	55

## Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

With Shade-Holder Groove

Diameter main base, 2 1/16 inches; over lugs, 2 7/8 inches. Height, 1 1/16 inches. Screw spacing, 2 5/16 inches.



No. 4013

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4013	\$34.22	10	100	32

Without Shade-Holder Groove

Diameter main base, 2 1/16 inches; over lugs, 2 7/8 inches. Height, 1 1/16 inches. Screw spacing, 2 5/16 inches.



No. 9403

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9402	\$26.44	10	100	37

With Brass Shell for Uno and Other Shade-Holders

Diameter main base, 2 1/16 inches; over lugs, 2 7/8 inches. Height, 1 5/8 inches. Screw spacing, 2 5/16 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9403	\$42.00	10	100	32

## No. 59275 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

Raises wires 1 inch from surface.

Diameter over lugs, 2 1/16 inches. Height, 1 19/32 inches. Supporting screw spacing, 2 inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
59275	\$35.36	10	100	35

## No. 4229 Bryant Porcelain Receptacles

660 Watts, 250 Volts

For Cleat or Concealed Wiring

Diameter base, 2 1/8 inches. Height, 1 7/8 inches. Holes for supporting screws are elongated to provide 1 3/8 to 1 5/8 in. on centers.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4229	\$22.00	10	100	35

## Bryant Porcelain Wood Molding Receptacles

660 Watts, 250 Volts

Length, 2 5/16 inches. Width, 2 1/8 inches. Height, 1 11/16 inches. Supporting screw spacing, 1 13/16 inches.



No. 42453

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
42453	\$38.88	10	100	46

With Shade-Holder Groove

Length, 2 7/8 inches. Width, 1 11/16 inches. Height, 1 11/16 inches. Supporting screw spacing, 2 29/32 inches.



No. 4026

4026	\$54.44	10	100	31
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**No. 9171 Bryant Porcelain Cleat Receptacles**

660 Watts, 250 Volts, Not N. E. C.



Diameter of base,  $1\frac{5}{16}$  inches.  
Height,  $1\frac{1}{2}$  inches.  
Supported by one screw in the center.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9171	\$12.64	10	100	24

**Bryant Double End Porcelain Receptacles For Concealed, Cleat, or Molding Work**

660 Watts, 250 Volts



No. 4248



No. 4249

For use with metal reflectors. The receptacle will take up to 100-watt lamps, and, when used with No. 4249 Sub-Base, up to 150-watt lamps.

Mounting screw holes are staggered, centers 1 inch on width and  $1\frac{1}{8}$  inches on length.

**Medium Base, Keyless**

Size of base,  $2\frac{1}{4} \times 1\frac{3}{4}$  inches. Height,  $2\frac{1}{2}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4248	\$56.56	10	100	60

**Porcelain Sub-Base**

Size of base,  $2\frac{1}{4} \times 1\frac{3}{4}$  inches. Thickness,  $\frac{3}{8}$  inch.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4249	\$10.60	10	100	12

**Bryant Outlet Box Receptacles**

660 Watts, 250 Volts



No. 9397



No. 9514

Base,  $2 \times 1\frac{3}{8}$  inches. Height,  $1\frac{1}{2}$  inches. Supporting screw spacing,  $1\frac{1}{2}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*9397	\$24.04	10	100	15

**2-Piece, Flush**

Hole required,  $1\frac{1}{16}$  inches in diameter. Flange,  $2\frac{1}{4}$  inches in diameter,  $\frac{11}{32}$  inch thick. Depth from back of flange,  $1\frac{25}{32}$  inches. Supporting screw spacing,  $1\frac{1}{8}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9514	\$42.42	10	100	32

**With Marine Screw Shell**

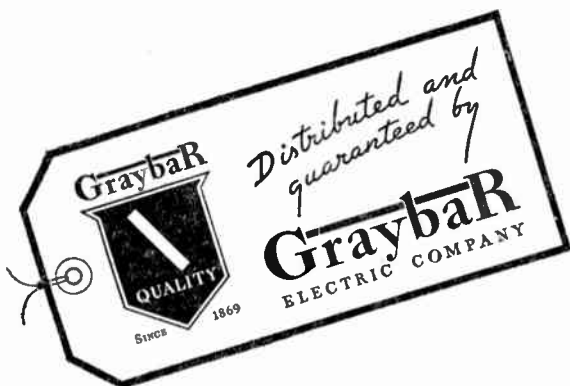
Outside diameter of base,  $2\frac{5}{8}$  inches. Supporting screw spacings, 2 to  $2\frac{3}{16}$  inches. The marine screw shell is formed of a coil of wire and has the advantage of holding the lamp base firmly in places subject to vibration.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*22287	\$59.90	10	100	37

\*Not listed as standard by Underwriters' Laboratories.



No. 22287



**Bryant Porcelain Weatherproof Sockets**

With Die Cast Caps

660 Watts, 250 Volts

Carton, 10. Standard package, 100.

**With Straight Cap**

Cat. No.	Per 100	Cap In.	Diam. In.	Length Bodies In.	Length Over All In.	Pkg. Wt. Lbs.
9418	\$18.94	$\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{1}{4}$	14
9419	18.94	$\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{1}{4}$	14
9420	22.10	$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{1}{4}$	11
9421	18.94	$\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{1}{4}$	12



No. 9454

**With Angle**

Cat. No.	Per 100	Cap In.	Diam. In.	Length Bodies In.	Length Over All In.	Pkg. Wt. Lbs.
9422	\$27.36	$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{13}{16}$	12
9423	27.36	$\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{13}{16}$	16

**With Hexagon Straight Cap**

Cat. No.	Per 100	Cap In.	Diam. In.	Length Bodies In.	Length Over All In.	Pkg. Wt. Lbs.
9454	\$35.36	$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{1}{4}$	16

**Bryant Porcelain Weatherproof Sockets**

660 Watts, 600 Volts

These devices are regularly fitted with 6-inch leads of No. 14 A.W.G. stranded rubber covered wire.

Main diameter,  $1\frac{1}{2}$  inches. Flange diameter,  $1\frac{5}{8}$  inches. Length of porcelain,  $1\frac{15}{16}$  inches.



No. 399

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
399	\$13.68	10	100	26

**With Shade-Holder Groove**

Main diameter,  $1\frac{1}{2}$  inches. Flange diameter,  $1\frac{5}{8}$  inches. Length of porcelain,  $1\frac{3}{4}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9366	\$20.00	10	100	28

**Bryant Porcelain Weatherproof Bragdon Sockets**

660 Watts, 600 Volts

**With Shade-Holder Groove**

Main diameter,  $1\frac{5}{8}$  inches. Diameter of skirt,  $2\frac{11}{16}$  inches. Length,  $2\frac{29}{32}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
50997	\$77.78	10	100	52

**Bryant Composition Weatherproof Sockets**

660 Watts, 600 Volts

**With Shade-Holder Groove**

Main diameter tapers from  $1\frac{1}{16}$  to  $1\frac{1}{16}$  inches. Flange diameter,  $1\frac{5}{8}$  inches. Length of composition,  $2\frac{3}{16}$  inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
60666	\$19.00	10	100	26



No. 43310

**Pony Size, With Shade-Holder Groove**

Main diameter,  $1\frac{1}{16}$  inches. Flange diameter,  $1\frac{5}{8}$  inches. Length of composition, 2 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
43310	\$18.00	10	100	21

**No. H310 Hemco Templus Weatherproof Sockets**

Pony Size

With Shade-Holder Groove

660 Watts, 600 Volts

With 6-inch leads.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
H310	\$12.00	10	100	13



## Bryant Porcelain Receptacles

For Outlet Boxes, Metal Signs and Lighting Units



No. 61988

The hole required for each of these receptacles is  $1\frac{1}{2}$  inches in diameter. Diameter of receptacles,  $1\frac{3}{4}$  inches. Diameter of rings,  $1\frac{3}{4}$  inches.

Carton, 10. Standard package, 100.

**Deep Receptacles with Shallow ( $\frac{1}{2}$ -Inch) Ring and 1 Lug**  
660 Watts, 600 Volts

Cat. No.	Per 100	Description	Separation In.	Depth Back In.	Wt., Lbs. Std. Pkg.
61988	\$16.16	With Binding Screws...	1	$1\frac{1}{4}$	27

**Shallow Receptacles with Deep ( $\frac{5}{8}$ -Inch) Ring and 1 Lug**



No. 59108



No. 4109 with Button Unscrewed



No. 4132

Cat. No.	Per 100	Description	Separation In.	Depth Back In.	Wt., Lbs. Std. Pkg.
59108	\$16.16	With Binding Screws...	$\frac{5}{8}$	$1\frac{1}{16}$	23
4109	25.00	Binding Screws Covered.	$\frac{5}{8}$	$1\frac{3}{32}$	28
4003	\$22.00	With 6-Inch Wires...	$\frac{27}{32}$	$\frac{27}{32}$	27

660 Watts, 600 Volts

**Shallow Receptacles with Deep ( $\frac{5}{8}$ -Inch) Ring and 5 Lug Slots**

Cat. No.	Per 100	Description	Separation In.	Depth Back In.	Wt., Lbs. Std. Pkg.
59106	\$16.16	With Binding Screws...	$\frac{5}{8}$	$1\frac{1}{16}$	23

660 Watts, 250 Volts  
With Deep ( $\frac{5}{8}$ -Inch) Screw Ring and 1 Lug



No. 4133



No. 4133 with No. 433 Shade-Holder



No. 4135

With groove for Weatherproof Shade-Holders and recess for Emergency Shade-Holders.

Cat. No.	Per 100	Description	Separation In.	Depth Back In.	Wt., Lbs. Std. Pkg.
4133	\$21.00	With Binding Screws...	$\frac{5}{8}$	$1\frac{1}{16}$	20
4135	\$19.20	With 6-Inch Wires...	$\frac{27}{32}$	$\frac{27}{32}$	27

660 Watts, 250 Volts  
660 Watts, 600 Volts

**Porcelain Screw Rings for Above Receptacles**

Cat. No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.
3803	\$6.06	Shallow, $\frac{1}{2}$ -Inch Ring...	25	100	12
3804	6.06	Deep $\frac{5}{8}$ -Inch Ring...	25	100	13
3805	10.10	Shade-Holder Ring...	25	100	10

## No. 4063 Bryant Porcelain Receptacles

For Metal Signs, Border Lights and Cove Troughs  
660 Watts, 600 Volts



With binding screw terminals, grooved back. Screw shell replaced with disconnecting wire. Hole required,  $1\frac{3}{8}$  in.; diameter,  $1\frac{1}{2}$  in.; depth,  $1\frac{1}{2}$  in.; screw spacing,  $1\frac{1}{16}$  in.

Cat. No.	Per 100	Carton Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.
4063	\$14.74	10	100	23

## No. 1700 Bryant Receptacles for Wooden Signs

660 Watts, 250 Volts (Not N.E.C. Standard)

Hole required,  $1\frac{1}{16}$ -inch diameter. Screw hole spaced  $1\frac{1}{8}$  inches.

Diameter of back,  $1\frac{1}{8}$  inches; thickness of back,  $\frac{3}{16}$  inch; length of neck,  $1\frac{1}{32}$  in.



Cat. No.	Per 100	Carton Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.
1700	\$24.04	10	100	23

## Hemco Sign Receptacles



No. H100



No. H101



No. H114

Cat. No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.
H100	\$10.52	With Binding Screws...	25	250	23
H101	12.64	With Covered Back...	25	250	25
H114	13.16	With 9-Inch Leads No. 14 Stranded Wire...	25	250	25
H118	10.52	With 9-Inch Leads No. 18 Code Fixture Wire...	25	250	25
H119	11.52	No Leads...	25	250	20

## Hemco Cleat and Pull Receptacles



No. H715



No. H978

Cat. No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.
H715	\$8.42	Templus Pony Cleat Receptacle	10	100	28
H975	21.06	Pull, with $6\frac{1}{2}$ -Inch Chain...	10	100	40
H976	21.06	Pull, with 4-Foot Cord...	10	100	40
H977	23.16	Pull, with $6\frac{1}{2}$ -Inch Chain, Insulator...	10	100	40
H978	23.16	Pull, with $6\frac{1}{2}$ -Inch Chain, and 4-Foot Cord...	10	100	40

## Bryant Porcelain Concealed Receptacles

660 Watts, 250 Volts

Outside diameter of base,  $2\frac{3}{8}$  inches. Height,  $1\frac{15}{16}$  inches. Supporting screw spacing,  $1\frac{1}{2}$  inches.



No. 4000

Cat. No.	Per 100	Carton Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.
4000	\$38.88	10	100	35

With Shade-Holder Groove

4001	\$46.66	10	100	35
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With Brass Shell for Uno and Other Standard Shade-Holders



No. 4002

Outside diameter of base,  $2\frac{5}{16}$  inches. Height,  $1\frac{1}{8}$  inches. Supporting screw spacing,  $1\frac{5}{8}$  inches.

4002	\$54.44	10	100	30
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With Removable Porcelain Ring



No. 50744

Outside diameter of base,  $2\frac{1}{32}$  inches. Height,  $1\frac{1}{8}$  inches. Supporting screw spacing,  $1\frac{1}{4}$  inches.

50744	\$46.66	10	100	35
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## No. 9407 Bryant Weatherproof Porcelain Receptacles

660 Watts, 600 Volts

Outside diam. of base,  $2\frac{1}{16}$  in. Thickness of base, 1 in. Height,  $2\frac{1}{8}$  in. Holes for screws spaced  $2\frac{3}{16}$  in.

Cat. No.	Carton Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Per 100
9407	10	100	66	\$35.36



**Bryant Mogul Sockets**

1500 Watts, 600 Volts

3/8-Inch Aluminum Caps      1/2-Inch Aluminum Caps



Cat. No.	Per 100	Car-ton	Std. Pkg.	Pkg. Wt.
SA	\$30.30	10	50	4

Body with Binding Screws



Cat. No.	Per 100	Car-ton	Std. Pkg.	Pkg. Wt.
SB	\$30.30	10	50	4

Body with Loop Terminals



Cat. No.	Per 50	Std. Pkg.	Pkg. Wt.
4123	\$42.10	5	50

Body with 15-Inch Wire Leads



Cat. No.	Per 50	Std. Pkg.	Pkg. Wt.
4088	\$55.56	5	50

Body with Side Connections



Cat. No.	Per 50	Std. Pkg.	Pkg. Wt.
4081	\$70.70	5	50

Length of all bodies, 2 1/2 in. Screw spacing: Nos. 4123 and 4088 bodies, 1 1/8 in.; Nos. 4081 and 4062 bodies, 1 1/2 to 1 1/2 in.

Main diameter, 2 1/4 in. Flange diameter, 2 1/2 in.

Cat. No.	Per 50	Std. Pkg.	Pkg. Wt.
4062	\$55.56	5	50

**Bryant Mogul Keyless Sockets**

1500 Watts, 600 Volts

Brass Shell



No. 4021

Brass shell sockets have asbestos shell linings and paper cap linings.

Fitted with lanced screw shells to prevent loosening of the lamps due to vibration.

Diameter, 2 inches. Length, 3 3/4 inches.

Carton 5. Standard package, 50.

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
4021	\$212.10	3/8" Cap.....	30
4022	212.10	1/2" Cap.....	30

**Bryant Double Filament Lamp Sockets**

1500 Watts, 600 Volts



No. 4556

Main diameter, 2 1/4 inches. Length with cap or yoke, 3 1/6 inches. Length of body only, 2 3/6 inches. Body mounting screw centers, 1 1/6 inches.

Carton, 5. Standard package, 50.

Cat. No.	Per 50	Description	Wt., Lbs. Std. Pkg.
4556	\$105.00	3/8" Brass Cap	36
4557	95.00	3/8" Yoke.....	29
4558	85.00	Body Only...	21

**Bryant Porcelain Mogul Cleat Receptacles**

1500 Watts, 250 Volts



No. 4073

Diameter over lugs, 3 1/2 inches. Diameter of neck, 2 1/4 inches. Height, 2 3/6 inches. Diameter of main part of base, 2 5/8 inches. Supporting screw spacings, 2 7/8 inches.

Carton, 5. Standard package, 50.

Cat. No.	Per 40
4073	\$75.76

**Bryant Porcelain Rosettes**

Junior 2-Piece with Cleat Base

Main diameter, 2 3/32 inches; over lugs, 2 31/32 inches. Height, 1 11/16 inches. Screw spacing, 1 3/8 inches.



No. 1501

With Fusible Cap 2 Amperes, 125 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1501	\$26.32	10	100	37

With Fuseless Cap 660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
297	\$13.68	10	100	40

Junior 2-Piece with Concealed Base

Outside diameter of base, 2 11/32 inches. Height, 2 1/8 inches. Supporting screw spacing, 1 5/8 inches.



No. 1502

With Fusible Cap 2 Amperes, 125 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1502	\$26.32	10	100	47

With Fuseless Cap 660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
298	\$13.68	10	100	51

Junior 1-Piece with Cleat and Concealed Base Combined

Main diameter, 2 7/32 inches; over lugs, 2 27/32 inches. Height, 1 3/8 inches. Screw spacing, 1 1/4 inches.



No. 1999

With Fuseless Cap 660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1999	\$9.48	10	100	22

1-Piece Fuseless for Outlet Boxes

660 Watts, 250 Volts

For 3/4-Inch Box

Outside diameter, 3 1/2 inches. Height, 1 inch. Screw spacing, 2 3/4 inches.



No. 572

Cat. No.	Per 10	Std. Pkg.	Wt., Lbs. Std. Pkg.	
572	\$10.52	10	50	25

With Binding Screw Terminals

Cat. No.	Per 10	Std. Pkg.	Wt., Lbs. Std. Pkg.	
574	\$33.26	10	50	26

For 3/4 and 4-Inch Box

Outside diameter, 4 23/32 inches. Height, 1 inch.

Screw spacing, 3 1/2 inches.



No. 574

Cat. No.	Per 5	Std. Pkg.	Wt., Lbs. Std. Pkg.	
573	\$14.74	5	50	46

With Binding Screw Terminals

Cat. No.	Per 5	Std. Pkg.	Wt., Lbs. Std. Pkg.	
575	\$45.48	5	50	47

**Bryant Socket Reducers**



No. 391

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
421	\$35.36	Mogul to Medium.	10	100	19



No. 392

Cat. No.	Per 25	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
392	12.00	Medium to Candelabra.....	25	100	6

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
391	8.48	Candelabra to Miniature.....	100	100	1







### Hubbell Pull Sockets

250 Watts, 250 Volts

Sockets have interchangeable shells and caps. Regularly equipped with 6½-inch chains.

Cat. No.	Per 100	Cap In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3618	\$33.68	1/8	25	250	54
3620	33.68	Pend.	25	250	54



### Hubbell Key Sockets

250 Watts, 250 Volts

Sockets have interchangeable shells and caps. Standard length of key, one inch.

Cat. No.	Per 100	Cap In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3664	\$27.36	1/8	25	250	55
3665	29.96	3/8	25	250	51
3666	27.36	Pend.	25	250	53



### Hubbell Keyless Sockets

660 Watts, 250 Volts

Cat. No.	Per 100	Cap In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3667	\$25.26	1/8	25	250	50
3668	27.86	3/8	25	250	50
3669	25.26	Pend.	25	250	45



### Hubbell Standard Bodies

Socket Bodies

#### Pull

Regularly equipped with 6½-inch chains.

250 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
60	\$25.26	25	250	42



660 Watts, 250 Volts

178	\$29.46	25	250	47
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#### Key

Standard length of key, 1 inch.

250 Watts, 250 Volts

61	\$18.94	25	250	45
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660 Watts, 250 Volts

75	\$52.12	25	250	46
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#### Keyless

660 Watts, 250 Volts.

62	\$16.84	25	250	36
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No. 62



### Pull Switch Bodies

3 Amperes, 125 Volts

1 Ampere, 250 Volts

Regularly equipped with short chain and 4-foot black cords.

#### Fixture

63	\$78.70	10	20	3
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#### Rosette

65	\$82.64	10	20	4
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### Hubbell Standard Socket Caps



No. 14



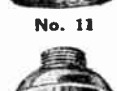
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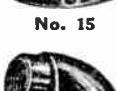
No. 362



No. 11



No. 15



No. 18



No. 18

#### Pendent

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
14	\$8.42	25	250	9

### Porcelain Strain Relief Bushing

55	\$14.84	25	100	5
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### Pendent Socket Caps With Cord Grip

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
362	\$22.28	3/8" to 1/2" Cord	25	100	12
363	22.28	1/4" to 3/8" Cord	25	100	16

#### 1/8-Inch Female

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
11	\$8.42	25	250	13

#### 1/4-Inch Female

12	\$26.14	5	25	2
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#### 3/8-Inch Female

13	\$11.02	25	100	6
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#### 1/8-Inch Male

15	\$16.34	5	25	2
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#### 3/8-Inch Male

17	\$26.14	25	50	4
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#### 1/8-Inch Angle

18	\$34.30	25	50	5
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#### 3/8-Inch Angle

20	\$39.18	5	25	2
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### Hubbell Standard Socket Bases

#### Small Concealed—Solid

Supporting screw holes are spaced 1½ inches on centers.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
25	\$26.72	10	100	20



No. 25

#### Small Concealed—Slotted

Supporting screw holes are spaced 1½ inches on centers.

57	\$26.72	10	100	20
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No. 57

#### Surface Wiring

Supporting screw holes are spaced 2½ inches on centers.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
27	\$34.16	10	100	30



No. 27

#### Small Covered Concealed

Screw holes spaced 1¾ inches on centers.

26	\$41.58	10	100	20
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No. 26

#### Insulated Ceiling



No. 38 or No. 40

#### For 3¼-Inch Outlet Boxes

Screw holes spaced 25/16 and 2¾ inches on centers.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
38	\$54.94	10	50	26

#### For 4-Inch Outlet Boxes

Screw holes spaced 25/16, 2¾ and 3½ inches on centers.

40	\$99.48	5	50	50
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**Hubbell Brass Shell Threaded-Catch Sockets**



No. 1639 and 1636



No. 1637



No. 1638

Threaded ring is included as part of socket body. Standard finish is brush brass.

A heavy threaded ring holds the cap and shell together securely and will not pull apart from strain or vibration. This ring holds with a strong grip and will sustain the weight of the heaviest reflector.



No. 1630

Cat. No.		Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
1637	\$28.28	Key Body	25	250	44	
1639	40.40	Pull Body	25	250	41	



No. 1632

Cat. No.		Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
1636	\$86.26	Pull Body	25	250	42	
1638	25.26	Keyless Body	25	250	35	



No. 1634

Cat. No.		Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
1630	\$8.08	1/8-inch Cap	25	250	17	
1631	19.80	1/4-inch Cap	25	50	8	
1632	14.14	3/8-inch Cap	25	100	12	
1633	24.04	1/2-inch Cap	25	50	8	
1634	8.08	Pendent Cap	25	250	13	
1635	11.32	Strain Relief Pendent Cap	25	100	12	



No. 2502

Cat. No.		Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
2236	\$53.74	For 3/8-inch Pipe Pendent Chain Link Fixture Cap	10	100	18	
2502	\$18.38	For .375 and .500-inch Cord Pendent Cap, Cord Grip	25	100	7	

**Hubbell Bakelite Threaded-Catch Sockets**



No. 3988



No. 3984



No. 3986



No. 3980

Cat. No.		Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
3984	\$28.28	Key Body	10	100	19	
3988	40.40	Pull Body	10	100	19	
3990	51.72	Pull with Ins. Chain	10	100	18	
3986	\$25.26	660 Watts—250 Volts Keyless Body	10	100	18	
3987	28.28	Push Body	10	100	17	



No. 3983

Cat. No.		Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
3980	\$8.08	1/8" Cap	10	100	5	
3981	14.14	3/8" Cap	10	100	6	
3982	8.08	Pendent Cap	10	100	6	
3983	18.38	Pendent Cap with Cord Grip	10	100	4	



No. 3979

Cat. No.		Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
3979	\$10.10	Bakelite Finishing Ring	10	100	3	
3992	\$33.94	Brown Porcelain Socket Base	10	50	36	
3993	45.24	4" Box Base	5	50	40	



No. 3992

A threaded ring is included as part of Socket Bodies and Bases.

Brown Bakelite is standard. Parts of Bakelite and Brass Shell Threaded Catch Sockets do not interchange.

**Hubbell Socket Parts**

**Medium Base**

Brush brass is standard finish on all exposed metal parts and will be furnished unless otherwise specified. Carton quantity is considered one-fifth standard package.

Description	Per 100	Std. Pkg.
Shells, All Kinds, without Linings	\$10.00	250
Cap, 1/8-Inch without Lining	9.50	250
Cap, 1/4-Inch without Lining	15.50	250
Cap, 3/8-Inch without Lining	15.50	250
Cap, Pendent, without Bushing or Lining	8.50	250
Linings, Shell, All Kinds	.70	250
Linings, Cap, All Sizes	.50	250
Bushings, Pendent Cap, Composition	1.00	250
Interior, Keyless, (Medium Base M-300)	14.34	250
Interior, Keyless, Short Shell (M-103)	12.24	250
Interior, Push, with Non-Removable Buttons (M-412)	18.56	250
Interior, Key, 250 Watts (M-200)	16.44	250
Interior, Key, 660 Watts (M-202)	49.62	250
Interior, Pull, 250 Watts, with Chain Eyelet, but without Chain or Tassel (MA-100)	19.16	250
Interior, Pull, 250 Watts, without Chain, Tassel and Chain Eyelet (MB-100)	18.76	250
Interior, Pull, 250 Watts, with Chain, Tassel and Chain Eyelet (M-100)	22.76	250
Interior, Pull, 250 Watts, without Chain Eyelet, but with Chain and Pendent	22.36	250
Interior, Pull, 660 Watts, with Chain Eyelet, Chain and Tassel (M-109)	26.96	250
Standard Chain Eyelet for Pull Sockets (D-7500)	5.00	250
Electrolier Chain Eyelet for Pull Sockets (D-7501)	5.00	250
7-Inch Chain with Tassel	13.00	250
Tassel for Pull Chain	6.00	250
Screw Shells, All Kinds	3.50	250

**Acorn Brass Shell Fixture Sockets**



No. 2618

Devices not sold in less than standard package quantities; nor cap or body sold separately. Thread and bead shells are standard, but shells with thread only can be supplied on special order.



No. 2664

**Standard Size Pull—250 Watts—250 Volts**

Cat. No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
2618	\$23.16	With 1/8-inch Cap	25	250	52
2620	23.16	With Pendent Cap	25	250	48
2619	22.16	With Flat Cap	25	250	48
<b>Turn Knob—250 Watts—250 Volts</b>					
2625	\$17.90	With 1/8-inch Cap	25	250	53
2626	17.90	With Pendent Cap	25	250	46
2627	16.90	With Flat Cap	25	250	46
<b>Key—250 Watts—250 Volts</b>					
2664	\$17.90	With 1/8-inch Cap	25	250	53
2666	17.90	With Pendent Cap	25	250	46
2629	16.90	With Flat Cap	25	250	46
<b>Keyless—660 Watts—250 Volts</b>					
2667	\$15.78	With 1/8-inch Cap	25	250	46
2669	15.78	With Pendent Cap	25	250	42
2639	14.78	With Flat Cap	25	250	42

**Electrolier Size Push Thru—250 Watts—250 Volts**

Cat. No.	Per 100	Description	Carton Pkg.	Std. Pkg.	Wt. Lbs.
2950	\$18.94	With 1/8-inch Cap	25	250	52
2920	18.94	With Pendent Cap	25	250	48
2919	17.94	With Flat Cap	25	250	48
2999	20.94	With Side Outlet Cap	25	250	48
<b>Keyless Short Shell—660 Watts—250 Volts</b>					
2899	\$13.68	With 1/8-inch Cap	25	250	46
2820	13.68	With Pendent Cap	25	250	42
2879	12.68	With Flat Cap	25	250	42

## Hubbell Candelabra Sockets

75 Watts, 125 Volts  
With 1/8-inch caps.  
Standard finish is brush brass.



No. 5742

### Candelabra Base

Cat. No.	Per 100	Pull, \$	Quick Catch Shell Fastening		Wt., Lbs. Std. Pkg.
			Car-ton	Std. Pkg.	
5742		\$77.78	10	50	6
5753		\$41.10	25	100	10

### Bayonet Base

Cat. No.	Per 100	Pull, \$	2-Screw Lock Shell Fastening		Wt., Lbs. Std. Pkg.
			Car-ton	Std. Pkg.	
5792		\$127.26	10	50	7

Pull sockets furnished with chain over 4 inches in length, add to price \$10.00 per 100 feet. For pull sockets equipped with 1/8-inch extension eyelets, add to price \$10.00 per 100. Separate extension eyelets, \$15.00 per 100.

Special finishes take same additional prices as standard sockets.



No. 5792

## Hubbell Adjustable Candle Sockets

### Pull—Complete

250 Watts, 250 Volts

Cat. No.	Per 100	Length, In.		Car-ton	Std. Wt., Lbs.	
		Min.	Max.		Pkg.	Std. Pkg.
3965	\$28.42	3 3/4	4 5/8	10	100	30
3966	28.42	4 3/4	5 5/8	10	100	31
3967	28.42	5 3/4	6 5/8	10	100	32



No. 3969

### Keyless—Complete

660 Watts, 250 Volts

Cat. No.	Per 100	Length, In.		Car-ton	Std. Wt., Lbs.	
		Min.	Max.		Pkg.	Std. Pkg.
3969	\$8.42	3 3/4	4 5/8	25	250	36
3970	8.42	4 3/4	5 5/8	25	250	38
3971	8.42	5 3/4	6 5/8	10	100	21

No. 3965

## Hubbell Porcelain Keyless Candle Sockets

660 Watts, 250 Volts



No. 3394



No. 3921

### With Hickey

Cat. No.	Per 100	Bush-ing Inches	Length Inches	Car-ton	Std. Pkg.	Wt., Lbs.	
						Std. Pkg.	Std. Pkg.
3394	\$7.36	1/8	2 13/16	25	250	30	30

### Without Hickey

3921	\$7.36	1/8	2 1/16	25	250	30	30
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## Hubbell Keyless Pony Wall Sockets

660 Watts, 250 Volts

Supporting screw holes are spaced 1 1/16 inches on centers.

Standard finish is brush brass.



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.	
					Std. Pkg.	Std. Pkg.
50717	\$37.12	Solid Base	10	100	24	24
50718	37.12	Slotted Base	10	100	24	24

## Hubbell Socket Accessories

### Socket Chain, Cord, Acorns and Tassels



No. 5382



No. 3946



No. 5919



No. 7015



No. 3436

Standard finish is brush brass. For special finishes on chain add \$2.00 per 100 feet or fraction.

Pull chains less than 6 1/2 inches in length with tassels attached take the same price as regular 6 1/2-inch chain, or \$13.00 per 100.

Pull sockets furnished with short chain and 4 feet of cord, complete with tassel instead of 6 1/2-inch chain, add \$2.00 per 100.

Separate chain cut to length with tassel, or chain sold as part of a device, takes a price of \$10.00 per 100 feet or fraction thereof.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.	
					Std. Pkg.	Std. Pkg.
5382	*\$7.08	No. 6 Standard Socket Chain				
			*200	*1000	15	
5535	*7.08	No. 3 Candelabra Chain	*100	*500	20	
6563	*1.42	Black Linen Cord	*200	*1000	10	
3436	19.80	6-Foot Cord with Short Chain and Tassel for No. 60 Body		50	250	10
3321	29.70	6 1/2-Inch Pull Chain Complete with Fiber Insulator and Tassel for No. 60 Body		50	250	10
3946	8.48	Tassel, Standard Detachable		50	250	5
3947	8.48	Tassel, Candelabra Detachable		10	50	1
†6561	16.96	6-Foot Cord Only with Tassel		50	250	10
†6562	22.62	10-Foot Cord Only with Tassel		50	250	15
**5919	8.48	Tassel, Adjustable for Linen Cord		50	250	5
7015	25.26	Acorn, Detachable Luminous		25	50	†9

\*Feet, and price per 100 feet.

\*\*Furnished in black finish to match cord.

†Ounces.

‡Can be supplied with white cord at no extra price.

### Detachable Nuclasp Insulating Links



No. 7026



No. 6999



No. 6814

Easy to attach and detach. Neat in appearance.

Standard finish is brush brass. All other finishes on insulators and connectors, add \$2.00 per 100 to price.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Oz.	
					Std. Pkg.	Std. Pkg.
6999	\$12.72	Detachable Insulator	20	100	16	
7026	4.24	Detachable Chain Connector		100	200	8
*6814	11.32	Detachable Insulating Link		20	100	8
1650	3.54	Splicing Link for No. 3 Chain		40	200	8
1651	3.54	Splicing Link for No. 6 Chain		40	200	8
1652	8.48	Porcelain Pendant		50	100	2

\*This device is fitted with slotted catches for chain.





**Hubbell Standard Porcelain Sockets**

Standard finish of exposed brass parts is wash nickel. For special plated finishes on exposed brass parts except on cap, add \$2.00 per 100. Standard length of porcelain keys is 7/8 inch. Standard length of chain, 6 1/2 inches. Sockets with chains over 6 1/2 inches in length, add to price \$10.00 per 100 feet or fraction thereof. Machine screws for mounting furnished with socket bases. All porcelain sockets are wired from the cap.



No. 160



No. 161



No. 162



No. 150



No. 151



No. 153



No. 155



No. 157



Nos. 158 or 159

**Socket Bodies**

**Pull Bodies**

250 Watts, 250 Volts	
Cat. No.	Per 100
160	\$66.74
1606	\$114.54

**Key Bodies**

250 Watts, 250 Volts	
Cat. No.	Per 100
161	\$29.42
1616	\$41.00

**Keyless Bodies**

660 Watts, 250 Volts	
Cat. No.	Per 100
162	\$26.02

**Socket Caps**

**Pendant**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
150	\$11.32	10	100	11

**1/8-Inch Brass**

151	\$22.62	10	100	12
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**3/8-Inch Brass**

153	\$27.14	10	100	16
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**1/2-Inch Brass**

191	\$38.18	10	100	20
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**3/4-Inch Angle Brass**

175	\$85.00	10	100	26
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**Socket Bases Concealed Type**

Supporting screw holes are spaced 1 1/8 and 2 3/16 inches on centers. Outside diameter, 2 3/4 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
156	\$21.22	10	100	40

**Cleat Type**

Supporting screw holes are spaced 1 1/16 inches on centers. Outside dimensions, 2 7/8 x 2 3/16 inches.

157	\$19.80	10	100	21
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**Ceiling Bases for Outlet Boxes For 3/4-Inch Boxes**

Supporting screw holes spaced 2 3/4 inches on centers. Outside diameter, 3 1/16 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
158	\$33.94	10	50	26

**For 4-Inch Boxes**

Screw holes spaced 3 1/2 inches on centers. Outside diameter, 4 1/16 inches.

159	\$45.24	5	50	36
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**Hubbell Aluminum Shell Weatherproof Keyless Sockets**

660 Watts, 600 Volts



No. 3121



No. 3122



No. 3138

The two piece type sockets have binding screws in the caps, the cap porcelain being permanently fastened in the cap. Two piece sockets are wired and assembled from the front and have threaded shells to take the weather-proof non-ventilated shade-holders.

Both types are furnished with screw shells having lamp grips.

**Two Piece Type**

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3120	\$70.70	With 3/8" Cap..	10	50	22
3121	70.70	With 1/2" Cap..	10	50	22

**Shade Holders**

3122	\$28.28	2 1/4 Inch.....	10	50	6
3123	42.42	3 1/4 Inch.....	10	50	7
3133	72.00	4 Inch.....	10	50	10

**One Piece Type**

3138	\$56.56	With 3/8" Nipple	10	50	20
3139	56.56	With 1/2" Nipple	10	50	20

**Hubbell Porcelain Pull Receptacles**

250 Watts, 250 Volts



No. 998



No. 999

Standard gasket is of special packing compound to withstand heat. Asbestos gasket supplied without additional cost. Hole required, 1 1/2 inches.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
998	\$23.16	Short Chain and 4 Ft. Cord.....	10	100	40

999	35.36	3-Ft. Chain.....	10	100	40
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Standard finishes are brush brass and nickel plate. Brush brass furnished unless otherwise specified. For other finishes on No. 998, add \$2.00 per 100; No. 999, add \$10.00 per 100.

For chain longer than 6 1/2 inches, add \$10.00 per 100 feet or fraction thereof. Extra length cord, \$1.00 per 100 feet. For insulators, add \$8.00 per 100.

Receptacle can be furnished on request with an extra chain eyelet which can be riveted or spun on shell of ceiling fixture or outlet box cover without extra cost. When sold separately, price of extra chain eyelet is \$4.00 per 100. These devices can be furnished on special order with 6-inch leads of No. 14 B. & S. stranded rubber covered wire at \$8.00 additional price per 100.

**No. 9402 Hubbell Porcelain Cleat Receptacles**

**Cleat Binding Screws**  
660 Watts, 250 Volts



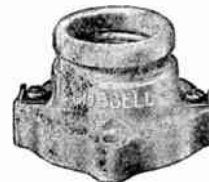
Holes for supporting screws are spaced 2 3/8 inches on centers. Outside dimensions of base, 2 15/16 x 2 23/32 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9402	\$26.44	10	100	40

**No. 4013 Hubbell Porcelain Cleat Receptacles**

660 Watts, 250 Volts

**With Shade Holder Groove**



Holes for supporting screws are spaced 2 3/8 inches on centers.

Dimensions of base, 2 5/16 x 2 23/32 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4013	\$34.22	10	100	38

## Hubbell Brass Covered Surface and Outlet Box Ceiling Receptacles

### Keyless

660 Watts, 250 Volts

No. 4100 is for 3¼ and 4-inch outlet boxes. Screw spacings, 2¾ and 3½ inches.

No. 4102 is for use on 3¼-inch boxes. Screw spacings, 2¾ inches.

Standard finish is brush brass.



No. 4100

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Per 100
4100	Keyless	10	50	47	\$84.84
4102	Keyless	10	50	30	70.00

### Pull

250 Watts, 250 Volts

No. 4104 is for 3¼ and 4-inch outlet boxes. Screw spacings, 2¾ and 3½ inches.

It is equipped with short chain, 10 feet of black linen cord and small composition ball.

Standard finish is brush brass.



Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Per 100
4104	Pull	10	50	60	\$183.82

## Hubbell Porcelain Receptacles

### Ceiling Receptacles

For 3¼ and 4-Inch Outlet Boxes  
660 Watts, 250 Volts



No. 3922

Holes for supporting screws in No. 3922 are spaced 2¾ inches on centers; in No. 3923 spaced 3½ inches on centers.

Cat. No.	Per 100	Size In.	Receptacle, Inches		Car-ton	Std. Wt., Lbs. Pkg. Std. Pkg.	
			Height	Outside Diameter		Std. Pkg.	Std. Pkg.
3922	\$16.84	3¼	1¾	3¼	5	100	80
3923	21.06	4	1¾	4¼	5	50	42

### Pull Receptacles

With Flush Back

Pull—250 Watts, 250 Volts

Keyless—660 Watts, 250 Volts



No. 829

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
829	\$141.40	Pull, Short Chain and Cord	10	24	31
830	141.40	Pull, Short Insulated Chain	10	24	32
855	141.40	Pull, Close-Up Porcelain Pendant	10	24	30
860	78.78	Keyless	10	24	30

## Hubbell Weatherproof Outlet Box Receptacles

With Removable Metal Cover  
With Screw Terminals  
660 Watts, 250 Volts



No. 456

Cadmium finish steel covers. Height, 1¾ inches.

For 3¼-Inch Outlet Boxes

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
456	\$15.78	10	100	53
457	\$17.90	5	100	72

## Hubbell Porcelain Pull and Keyless Receptacles

With Removable Rings for 3¼ and 4-Inch Boxes  
With Flush Back

250 Watts, 250 Volts



No. 4010

The 3¼ inch size: Diameter of base, 3¼ inches; height over all, 2¼ inches. Holes for supporting screws are spaced 2¾ inches on center.

The 4-inch size: Diameter of base, 4¾ inches; height over all, 2¼ inches. Holes for supporting screws are spaced 3½ inches on center.

Carton, 10. Standard package, 50.

### With Fluted Porcelain Rings

Cat. No.	Per 100	Description	Box In.	Wt., Lbs. Std. Pkg.
4010	\$31.58	With 7-inch Chain and Insulator	3¼	41
4040	42.00	With 7-inch Chain and Insulator	4	60
40101	27.36	With 7-inch Chain Only	3¼	41
40401	38.00	With 7-inch Chain Only	4	60
40102	31.58	With Short Chain, Long Cord	3¼	41
40402	42.00	With Short Chain, Long Cord	4	60

### With Grooved Shade Holder Rings

Cat. No.	Per 100	Description	Box In.	Wt., Lbs. Std. Pkg.
4026	\$31.58	With 7-inch Chain and Insulator	3¼	41
4046	42.00	With 7-inch Chain and Insulator	4	60
40261	27.36	With 7-inch Chain Only	3¼	41
40461	38.00	With 7-inch Chain Only	4	60
40262	31.58	With Short Chain, Long Cord	3¼	41
40462	42.00	With Short Chain, Long Cord	4	60

## No. 50715 Hubbell Porcelain Pony Cleat Receptacles

Binding Screws  
660 Watts, 250 Volts



Holes for supporting screws spaced 1½ inches on centers. Dimensions of base, 2½x2¾ inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
50715	\$8.42	10	100	25

## Hubbell Porcelain Sign Receptacles

These receptacles require a hole 1¾ inches in diameter. Holes for supporting screws are spaced 1½ inches on centers.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.	
				Std. Pkg.	Std. Pkg.
<b>Binding Screws</b>					
4063	\$14.74	10	100	100	22
<b>Loop Terminals</b>					
4064	\$14.74	10	100	100	22

## Hubbell Porcelain Sign Receptacles

With Bronze Washer—Head Spring—Stud and Screw

A coil spring makes the holding stud self-adjusting for use on varying thickness of metal. The receptacle is snapped into place by means of the stud, then the holding screw is run in from the front.

A 1½-inch punch is required.

Holes for supporting screws are spaced 1½ inches on centers.



### Binding Screws

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
4067	\$14.74	25	250	60	
<b>Loop Terminals</b>					
4068	\$14.74	25	250	60	

**Acorn Porcelain Screw Ring Sign Receptacles**

Unglazed—660 Watts, 250 Volts



No. 4112



No. 4114—No. 4118



No. 4113

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4112	\$10.52	Exposed Terminals.....	25	250	51
4113	12.64	Enclosed Terminals.....	25	250	64
4114	13.16	With 9-inch Leads of No. 14 R. C. Wire.....	25	250	73
4118	10.52	With 9-inch Leads of No. 18 R. C. Wire.....	25	250	71

**Hubbell Porcelain Sign Receptacles**

660 Watts, 250 Volts

**Deep—With 9/16-Inch Ring and 6-Inch No. 14 Wires**



No. 4003

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4003	\$22.00	10	100	28

**Shallow—With 3/8-Inch Ring and 6-Inch No. 14 Wires**

4035	\$22.00	10	100	28
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**With 9/16-Inch Ring Covered Terminals**



No. 4109

With porcelain button which covers the line terminal screw. Porcelain piece is attached in place by one center screw.

4109	\$25.00	10	100	27
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**Shallow—With 9/16-Inch Ring**

**Binding Screws**



No. 59108

59108	\$16.16	10	100	22
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**Loop Terminals**

59109	\$16.16	10	100	22
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**Deep—With 3/8-Inch Ring**

**Binding Screws**



No. 61988

61988	\$16.16	10	100	21
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**Hubbell Porcelain Sign Receptacles**

**Special Features and Separate Rings**

660 Watts, 250 Volts

All receptacles without leads have 8 notches and are easy to install. A notch in the side of hole punched in metal sign, engages one of the slots in porcelain preventing turning. No. 1197 pliers are used for forming these notches or lugs.

Separate fluted glazed porcelain rings, \$6.00 per 100. Standard package, 100. Separate grooved glazed porcelain rings, \$10.00 per 100. Standard package, 100.

Catalogue numbers 4003 and 4035 can be furnished with longer wire leads, on special order, at \$4.50 additional per 100 feet per conductor.

Sign receptacles with removable rings require a hole 1 1/2 inches in diameter.

Receptacles can be supplied with anti-paint discs assembled, when so ordered without extra charge. Discs sold separately at 20 cents per 100.

**Hubbell Weatherproof Sockets**

**Composition**

660 Watts, 600 Volts

Each socket is furnished with 6 inches of No. 14 B. & S. stranded rubber-covered wire.

**With Shade Holder Groove**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
60666	\$19.00	10	100	25

**Without Shade Holder Groove**

43310	\$18.00	10	100	25
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**Mica Compound**

**With Moulded in Leads and Shade Holder Groove**

660 Watts 600 Volts

Furnished with 6 inches of moulded in No. 14 B. & S. stranded rubber-covered wire.

43320	\$18.00	10	100	25
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**Bakelite**



No. 43320



No. 60666-B

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
60666-B	\$19.00	With Groove	10	100	25
43310-B	18.00	Without Groove	10	100	25

Longer wire supplied on large orders only. Extra charge \$4.50 per 100 feet for each conductor.



No. 310

310	\$12.00	With 6" Leads	10	100	22
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**Acorn—Bakelite**

**Pony Size**

660 Watts, 600 Volts

310	\$12.00	With 6" Leads	10	100	22
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**Hubbell Porcelain Mogul Sockets**

1500 Watts, 600 Volts

**Keyless**

**With Aluminum Cap**

Cat. No.	Per 100	Size Cap Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3390	\$101.00	3/8	2	50	75
3391	101.00	1/2	2	50	75

**With Cast Iron Yoke**

3289	\$85.86	3/8	2	50	85
3290	85.86	1/2	2	50	85

**Keyless, One-Piece Porcelain**

**With Aluminum Cap**

3468	\$85.86	3/8	2	50	36
3469	85.86	1/2	2	50	36

**With Cast Iron Yoke**

3471	\$70.70	3/8	2	50	60
3472	70.70	1/2	2	50	60

**Cleat Receptacles**

Screws spaced 2 7/8 inches.

Diameter of base, 3 1/2 inches.



No. 3289



No. 3468



No. 3464

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3464	\$75.76	2	50	45



## P & S-Despard Switches and Receptacles

The P & S-Despard units listed below, when combined or interchanged with one another, enable the contractor to assemble over 59244 different wiring device combinations.

P & S-Despard units are easily assembled in the mounting straps. A small screwdriver is all that is needed to lock each device securely in place. The correct style of mounting strap is furnished with each plate.

P & S-Despard Switches are fully capable of controlling

Type C lamp loads. The mechanism contains only 4 moving parts, including a laminated insulating disc which acts as an arc snuffer.

Receptacles or convenience outlets contain contacts of entirely new design. Contacts grip both sides of plug cap fingers and are formed so that the spring action is at bottom of the receptacle. This insures constant spring tension and prevents loose plug caps.

### Flush Tumbler Switches



Made of brown bakelite including lever which is doubly insulated. Strap is insulated from switch. Front and back are enclosed, making a thoroughly dust-proof unit.

Any P & S-Despard tumbler flush switch can be quickly and easily converted into a lock switch by use of lock switch hood No. 1315.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
			125-V.	250-V.			
1311	\$32.00	*S.P.	10	5	10	100	11
1312	84.00	†D.P.	..	10	10	10	2½
1313	50.00	‡3-Way	10	5	10	50	8
1314	280.00	‡4-Way	5	2	10	10	2½

### Lock Switch Hoods and Keys



Fits over switch lever and is fastened to wall plate by 2 small holding screws fitting into knockouts provided in all bakelite plates. Special notched screws for fastening plates to box are also provided to prevent unauthorized removal—cannot be removed without use of a special key Cat. No. 1316. This same key also used in operating switch installed with lock switch hood.

Cat. No.	Brown			Wt. Lbs. Std. Pkg.	Cat. No.	Alabar			Wt. Lbs. Std. Pkg.
	Per 100	Car-ton	Std. Pkg.			Per 100	Car-ton	Std. Pkg.	
1315	\$45.00	10	20	3	1415	\$56.00	10	10	2

### Key Only



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1316	\$20.00	1	1	¼

### Standard Tumbler Lock Switches



Made of brown bakelite including the lever which is doubly insulated. Strap is insulated from the switch. Front and back are enclosed, making a thoroughly dust-proof unit.

One Cat. No. 1499 Key furnished with each lock switch.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
			125-V.	250-V.			
1311-L	\$95.00	*S.P.	10	5	10	100	11
1312-L	147.00	†D.P.	..	10	10	10	2½
1313-L	113.00	‡3-Way	10	5	10	50	8
1314-L	343.00	‡4-Way	5	2	10	10	2½

### Key Only

For No. 1311-L Type Lock Switch.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1499	\$20.00	1	1	¼

### Replacement Switches



Capable of controlling Type C lamp circuits. Made small to make wiring room larger. All bakelite enclosed dust-proof housing.

One No. 1499 Key furnished with each switch. Supporting screw spacing, 3¾ inches.

Length of body, 1½ inches; width, ⅞ inch; depth, 1⅛ inches.

Standard Cat. No.	Per 100	Lock Type Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
					125-V.	250-V.			
1815-D	\$32.00	1815-DL	\$95.00	S.P., Ind.	10	5	10	100	20
1825-D	84.00	1825-DL	147.00	D.P., Ind.	..	10	10	50	13
1835-D	50.00	1835-DL	113.00	3-Way...	10	5	10	50	13
1844-D	280.00	1844-DL	343.00	4-Way....	5	2	10	10	4

\*Length, 1½ inches; width, ⅞ inch; depth, 1⅛ inches.  
 †Length, 1⅝ inches; width, ⅞ inch; depth, 1⅛ inches.

### Convenience Outlets

15 Amp., 125 Volts; 10 Amp., 250 Volts  
 For use with switch radio outlet or any other P & S-Despard device.  
 Single parallel slots.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1320	\$15.00	10	100	7
1341	\$25.00	10	30	4

### Insulating Adapters

Supplied with No. 1671-R Brass Plate, but can be furnished separately. Designed to fit over the neck of outlet Nos. 1320 and 1341 and into round opening in brass plate.



1327	\$10.00	10	50	4
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### Triplex Convenience Outlets

15 Amp., 125 Volts; 10 Amp., 250 Volts  
 With Constant Tension Contact

Three convenience outlets in place of the usual two. Has easy finding slots, constant tension contacts which grip both sides of plug cap blades, 4 binding screws for feed-thru circuits and one-piece brown bakelite body. Furnished complete with wall plate.

1325	\$39.00	10	100	25
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### Attachment Plug Caps

#### Self-Locating



Either regular or polarized with finger-grip feature and parallel blades. Finger grip feature enables thumb and finger to get a good grip to pull cap from receptacle or insert it. Due to their rectangular shape they are self-locating. Has ½-inch cord hole.

Cat. No.	Brown			Wt. Lbs. Std. Pkg.	Cat. No.	Alabar			Wt. Lbs. Std. Pkg.
	Per 100	Car-ton	Std. Pkg.			Per 100	Car-ton	Std. Pkg.	
1321	\$5.50	10	100	7	1421	\$11.00	10	100	4
*1326	5.50	10	100	7	*1426	11.00	10	100	4

\*Polarized.

### Radio Outlets

Can be installed in any outlet box singly, in multiples or with P & S-Despard devices. For antenna and ground connections.



Cat. No.	Brown			Wt., Lbs. Std. Pkg.
	Per 100	Car-ton	Std. Pkg.	
1322	\$38.50	10	50	4
1324	\$77.00	10	30	8

Complete with Box Divider and Cap

### Radio Caps

Cap blades set at an angle which prevents insertion in power slots. For antenna and ground connections. Has ½-inch cord hole.



Cat. No.	Brown			Wt., Lbs. Std. Pkg.
	Per 100	Car-ton	Std. Pkg.	
1323	\$12.50	10	50	4
1423	\$17.50	10	50	4

### Box Dividers

Keeps antenna and ground wires separate from any circuit entering same box.

For 1½, 2 or 2½-inch switchboxes.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1346	\$26.00	10	10	3

**The P & S-Despard Line**  
**Pilot Light Receptacles**  
 75 Watts, 125 Volts



A signal device which acts as a warning to indicate when circuit is open or closed. A 6-watt, 120-volt red mazda lamp and hood are furnished with each receptacle.

Cat. No.	Per 100	Style Hood	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
1340	\$95.50	Chromium-Plated.	10	30	5
1340-B	95.50	Brush Brass.....	10	30	5

**Night Light Receptacles**  
 75 Watts, 125 Volts



For use in bedrooms, hallways, nurseries, hospitals, over bell push at entrances, etc. Gives sufficient light to outline walls or furniture. A 6-watt, 120-volt clear mazda lamp is used. Lamp and reflector furnished with each receptacle.

1339	\$95.50	Chromium-Plated.	10	30	5
1339-B	95.50	Brush Brass.....	10	30	5

**Blank Inserts or Cord Holes**



Can be placed in any one of the openings of a P & S-Despard Plate. Also used to fill unused openings in plates. Made with knockout which can be punched through for use as a cord hole or telephone outlet.

Cat. No.	Per 100	Alabar	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
1345	\$9.50	1445	\$20.50	10	10	1

**Bell Pushes**

For 6 to 12-Volt Circuits



Can be placed in same box with P & S-Despard switch, outlet or night light. Made of bakelite.

1344	\$23.50	1444	\$37.50	10	10	1
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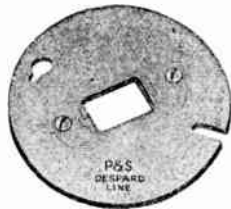
**Name Plates**

Consists of a rust-proof frame, a transparent window and white card.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
1330	\$15.50	Stainless Steel.	10	30	1/4
1330-1	15.50	Brush Brass...	10	30	1/4

**Metal Box Covers**

For mounting any one P & S-Despard device directly on a 3 1/4-inch outlet box, or any one or two P & S-Despard devices on a 4-inch outlet box.



Especially adapted for surface or exposed work. Cadmium-plated.

1361	\$12.50	For 3/4-Inch Box Single Opening.	10	100	25
1362	\$15.50	For 4-Inch Box Single Opening.	10	100	33
1363	20.00	Two-Opening..	10	50	18

**Mounting Straps**

For P & S and P & S-Despard Brass and Bakelite Plates

The correct style of mounting strap is packed with each P & S-Despard brass or bakelite plate, but can be ordered separately.

**Single Opening Mounting Strap**

Length, 4 3/8 in.; width, 1 1/16 in. Screw hole spacing, 3 1/8 in.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
1347	\$4.00	10	50	5

**Three Opening Mounting Strap**

Length, 4 3/8 inches; width, 1 1/2 in. Screw hole spacing, 3 1/8 in.



1348	\$4.00	10	50	5
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**Appliance Strap**

Fastening holes tapped for 6-32 screws.



1354	\$3.50	10	100	3
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**P & S-Despard Plates**  
**Two-Purpose, Plain Mat Finish Bakelite Wall Plates**

Especially adapted for the application of paint or lacquer. For use when plates are specified to match either the wall surface, hardware or wood trim. The polished bevel should be lightly sandpapered, then either linseed or pyroxlyn base paints can be applied. Plates are not furnished with a painted surface.

**1-Gang**

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1650	\$10.50	*For 1 Device	10	100	16
1651	10.50	†For 1 Device	10	100	16
1652	15.00	For 2 Devices	10	50	8
1653	21.00	For 3 Devices	10	30	6

**Sectional Plates**

When multi-gang or combination plates are required, they can be quickly and economically assembled as needed by using the various plate sections. Each plate is furnished complete with the correct style mounting strap. Special screws for fastening mounting strap to switch box are supplied with each sectional plate.

**End Section**

1654-1	\$15.00	†For 1 Device	10	50	10
1654-2	15.00	For 2 Devices	10	50	10
1654-3	21.00	For 3 Devices	10	30	8

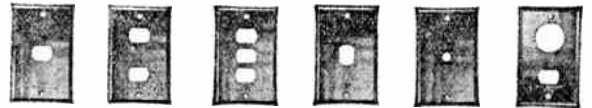
**Center Section**

1655-1	15.00	†For 1 Device	10	50	9
1655-2	15.00	For 2 Devices	10	50	9
1655-3	21.00	For 3 Devices	10	30	7

**Brown Bakelite Head Plate Screws**

1367	\$1.00	.....	20	100	1/2
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**P & S and P & S-Despard Brass Plates**



Brass plates for use with P & S-Despard wiring devices are available in .060 metal only. Brush brass is standard finish and will be furnished unless otherwise specified. Can be furnished in a variety of special finishes. Special combination plates can be furnished on order.

Furnished complete with the necessary straps for mounting P & S-Despard wiring devices.

The installation of P & S-Despard convenience outlets, Cat. Nos. 1320 and 1341, in brass plates is not recommended unless installed in Cat. No. 1671-R Brass Plate which is furnished complete with round bakelite insulating adapter designed to fit over the neck of these receptacles. No. 1325 Triplex Outlet Body only not recommended for use with brass plates.

Carton quantity is 10G.

Cat. No.	Per 100	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.
1671-A	\$22.10	†1-Gang, For 1 Device.....	100G	36
1671-B	26.60	2-Gang, For 2 Devices.....	50G	18
1671-C	32.60	3-Gang, For 3 Devices.....	30G	12
1671-G	22.10	*1-Gang, For 1 Device.....	100G	36
1671-J	31.10	Blank Plate.....	50G	25
1671-N	33.94	Telephone Plate, 3/8" Bushing.	50G	18
1671-R	36.60	‡Combination Plate.....	50G	18

\*Vertical opening.

†Horizontal opening.

‡With bakelite insulating adapter for installing P & S-Despard receptacle in combination with switch and pilot light.

**Unlacquered Brass Plates**

P & S and P & S-Despard unlacquered brass plates can be supplied in two ways: 1.—Polished, not lacquered. 2.—Unfinished and unlacquered.

**Special Metal Plates**

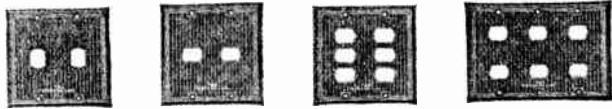
Plates with openings for either P & S or P & S-Despard devices can be supplied in the following special metals: Benedict metal (nickel silver) polished or brushed, .060 or .040 in. thick; aluminum, brushed, .060 in. thick; aluminum, polished, .060 in. thick; bronze (genuine) brushed, .060 or .040 in. thick; bronze (genuine) polished, .060 or .040 in. thick. Can be furnished only in .060 metal for use with P & S-Despard devices.

## P & S-Despard Plates

### Bakelite and Alabar (Ivory) Wall Plates



No. 1331    No. 1381    No. 1332    No. 1333    No. 1334



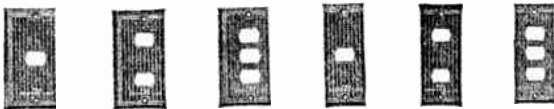
No. 1335    No. 1382    No. 1336    No. 1337

These plates have strong sections, and the wiring device strap furnished with each plate has been designed to form a metal backing or reinforcement for the plate. Plate fastening screws are located at extreme ends near the bevel. Plates will not warp or crack.

Carton quantity is 10.

For No. Devices	Cat. No.	Brown		1-Gang		Alabar		Wt., Lbs. Std. Pkg.
		Per 100	Std. Pkg.	Wt., Lbs. Std. Pkg.	Cat. No.	Per 100	Std. Pkg.	
*1	1331	\$10.50	100	16	1431	\$18.00	100	16
†1	1381	10.50	100	16	1481	18.00	100	16
2	1332	15.00	50	8	1432	25.00	50	10
3	1333	21.00	30	6	1433	28.50	30	6
<b>2-Gang</b>								
4	1334	\$30.00	30	9	1434	\$50.00	30	9
*2	1335	30.00	50	16	1435	50.00	30	10
†2	1382	21.00	50	16	1482	35.00	30	10
6	1336	42.00	20	5	1436	56.00	20	5
<b>3-Gang</b>								
6	1337	\$60.00	20	6	1437	\$80.50	20	6

### Sectional Plates



No. 1388-1    No. 1388-2    No. 1388-3    No. 1389-1    No. 1389-2    No. 1389-3

When multi-gang or combination plates other than those listed are required, they can be quickly and economically assembled as needed by using the various plate sections illustrated. Special screws for use in fastening mounting strap to switch box are supplied with each sectional plate. These flat head screws permit easy adjustment of mounting strap to obtain proper alignment of plates.

Carton quantity is 10.

### End Section

For No. Devices	Std. Pkg.	Wt., Lbs. Std. Pkg.	Brown		Alabar	
			Cat. No.	Per 100	Cat. No.	Per 100
†1	50	10	1388-1	\$15.00	1488-1	\$25.00
2	50	10	1388-2	15.00	1488-2	25.00
3	30	8	1388-3	21.00	1488-3	28.50
<b>Center Section</b>						
†1	50	9	1389-1	\$15.00	1489-1	\$25.00
2	50	9	1389-2	15.00	1489-2	25.00
3	30	7	1389-3	21.00	1489-3	28.50

\*Vertical opening.

†Horizontal opening.

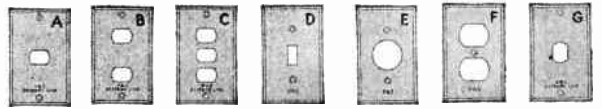
### Plate Screws

Brown bakelite plates are furnished as standard with brown plated screws.

Alabar plates are furnished as standard with alabar head screws.

Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Cat. No.	Per 100	Cat. No.	Per 100
20	100	1/2	1367	\$1.00	1467	\$1.50

## P & S and P & S-Despard Combination Brass Plates



Combination brass plates for P & S wiring devices can be made up in either .040 or .060 metal.

Combination brass plates for P & S-Despard devices can be finished only in .060 metal.

When a combination plate is desired punched with openings for both P & S wiring devices and P & S-Despard devices, such plates can be supplied in .060 metal only.

When combination plates are punched with openings for P & S-Despard devices the correct mounting strap for that particular section of the plate is supplied.

A combination plate must be made up of two or more different symbols.

Standard finishes: .040 metal plates are furnished in either brush brass or Passmour finish; .060 metal plates furnished only in brush brass finish. Can be furnished in a number of special finishes.

The number of gangs, thickness of plate and finish (either brush brass or Passmour) are denoted by the basic catalogue number.

The device openings are designated by symbols following the basic catalogue number. These symbols must be listed after the basic catalogue number in order of arrangement desired reading from left to right when looking at face of plate.

Example: When a 3-gang .060 brush brass plate is specified for 4 P & S-Despard switches and a duplex receptacle, the order should read as follows: 1-1673-BBF.

### Basic Catalogue Numbers for Combination Plates

No. of Gangs	.040		.060
	Brush brass Cat. No.	Passmour Cat. No.	Brush Brass Cat.No.
2	1772	L-1772	1672
3	1773	L-1773	1673
4	1774	L-1774	1674
5	1775	L-1775	1675
6	1776	L-1776	1676

### Combination Symbols

Symbol	Description
*A	1-Gang, Horizontal, for 1 P & S-Despard Device.
*B	2-Gang, for 2 P & S-Despard Devices.
*C	3-Gang, for 3 P & S-Despard Devices.
D	For Tumbler Switch.
E	For Single Convenience Outlet.
F	For Duplex Convenience Outlet.
*G	1-Gang, Vertical, for 1 P & S-Despard Device.
H	Blank, Fastening Screws on 2 3/8-Inch Centers (P & S).
*J	Blank, Fastening Screws on 3 13/16-Inch Centers, (P & S-Despard).
K	For 2-Button Push Switch.
*L	For 1-Button Momentary Contact Switch.
*M	For 30-Ampere Polarized Receptacle.
*N	Telephone Plate with 3/8-Inch Bushing.
*R	Combination Plate with Bakelite Insulating Adapter for Installing P & S-Despard Receptacle in Combination with Switch or Pilot Light.

\*Combination plates available in .060 metal only.



**P & S Porcelain Interchangeable  
1-Screw Sockets and Parts**

Key and Pull—250 Watts, 250 Volts  
Keyless—660 Watts, 250 Volts

P & S porcelain 1-screw socket parts are not interchangeable with P & S 2-screw socket parts. Standard finish of brass caps and chain is nickel flash, but brush brass can be supplied on special order.

**Assembled Sockets**

Parts assembled are PA pendant cap and S-26 key body.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
61317	\$40.72	10	100	45

**Socket Bodies**

**Key**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
S-26	\$29.42	10	100	33
S-38 Shurlok	59.72	10	100	31

**Keyless**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
S-27	\$26.02	10	100	19
S-39 Shurlok	56.32	10	100	20

**Pull**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
S-47	\$66.74	10	100	30
S-57 Shurlok	97.04	10	100	33

Above sockets have insulated chain and brass pendant.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
S-4700	\$69.78	10	100	33
S-5700 Shurlok	100.08	10	100	33

Above sockets have insulated chain and porcelain pendant.

**Caps**

**Pendant for Reinforced Cord**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
PA	\$11.32	..	10	100	13

**Pendant with Cord Grip**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
PY	\$28.28	1/2	10	100	19

**Straight Nipple—Brass**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
PC	\$22.62	1/8	10	100	17
PE	27.14	3/8	10	100	17
PZ	38.18	1/2	10	100	26

**Straight Nipple—Aluminum**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
PG	\$38.18	1/2	10	100	14

**90 Degree Angle—Brass**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
PO	\$85.00	3/8	10	100	28
PU	90.00	1/2	10	100	37

**Bases**

**Flat Back**

For 3/4-Inch Boxes

Diam. base, 3 1/2 in.  
Screw spacing, 2 3/4 in.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
PM	\$33.94	10	50	28

For 4-Inch Boxes

Diam. base, 4 1/2 in.  
Screw spacing, 2 3/4 in.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
PN	\$45.24	5	50	36



No. PM

**P & S Porcelain Interchangeable  
2-Screw Sockets and Parts**

P & S 2-screw porcelain socket parts are not interchangeable with P & S 1-screw porcelain socket parts.

The standard finish of brass caps and brass chain for porcelain pull sockets is nickel flash, but brush brass can be supplied on special order.

**Socket Bodies**

Key—250 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-26	\$29.42	10	100	30
O-38 Shurlok	59.72	10	100	31

Keyless—660 Watts, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-27	\$26.02	10	100	20
O-39 Shurlok	56.32	10	100	20

Pull—250 Watts, 250 Volts

Has brass chain and pendant.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-47	\$66.74	10	100	28

**Caps**

**Pendant for Reinforced Cord**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-PA	\$11.32	..	10	100	13

**Straight Nipple—Brass**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-PC	\$22.62	1/8	10	100	17
O-PE	27.14	3/8	10	100	17
O-PZ	38.18	1/2	10	100	26

**Straight Nipple—Aluminum**

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-PG	\$38.18	1/2	10	100	17

**Bases**

Flat Back—For 3/4-Inch Boxes

Diameter base, 3 1/2 in.

Screw spacing, 2 3/4 in.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-PM	\$33.94	10	50	28

Recessed Back

For 4-Inch Boxes

Diam. base, 4 1/2 in.

Screw spacing, 3 1/2 inches.

Recess, 1/4 in. deep.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
O-PN	\$45.24	5	50	37



No. O-26



No. O-27



No. O-47



No. O-PA



No. O-PC



No. O-PM

**No. S-62 P & S Porcelain Reflector  
Socket Bodies**

660 Watts, 600 Volts

Designed for use in fixtures and reflectors, suitable for Type C medium base lamps.

Diameter, 1 3/4 in.; length of body, 2 1/4 in. Supporting screws spaced 1 3/16 in. on centers.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
S-62	\$28.42	10	100	36

**No. 487 P & S Aluminum  
Shell Sockets**

Weatherproof Bayonet Type

660 Watts, 600 Volts

The terminals are easily reached when the body is seated in the cap.

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
487	\$56.56	1/2	10	50	17

**No. 8000 P & S Aluminum  
Shell Sockets**

Weatherproof—1-Piece Body

660 Watts, 600 Volts

Designed for use either with or without reflectors. Threaded portion fits Benjamin Benco reflector threads.

Cat. No.	Per 100	Cap. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
8000	\$70.70	1/2	10	50	11



## P & S Porcelain Mogul Sockets



1500 Watts, 600 Volts

Diameter  $2\frac{5}{16}$  inches.  
 Height,  $3\frac{1}{8}$  inches.  
 Height without cap,  $2\frac{9}{16}$  inches.  
 Holes for 8-32 supporting screws are spaced  $1\frac{5}{16}$  inches on centers.

No. 1553

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1553	\$44.22	With $\frac{3}{8}$ -Inch Cap.	10	50	30
1554	50.52	With $\frac{1}{2}$ -Inch Cap.	10	50	32
S-1514	40.00	Body Only	10	50	28

## P & S 3-Wire Porcelain Mogul Sockets



For 2-Filament Lamps

1500 Watts, 250 Volts

Diameter,  $2\frac{5}{16}$  inches.  
 Height,  $3\frac{1}{8}$  inches.  
 Height without cap,  $2\frac{9}{16}$  inches.  
 Holes for 8-32 supporting screws are spaced  $1\frac{5}{16}$  inches on centers.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
1555	\$105.00	With $\frac{3}{8}$ -Inch Cap.	5	50	32
1556	105.00	With $\frac{1}{2}$ -Inch Cap.	5	50	34
1557	85.00	Body Only	5	50	30

## P & S Porcelain Surface Receptacles

660 Watts, 600 Volts

Equipped with rugged terminals and has ample wiring room.

The removable collar is threaded on to the lamp shell. It cannot become loose nor turn because of vibration or jar.

The base is slotted to accommodate either open or concealed wiring.

Outside diameter,  $1\frac{1}{8}$  inches; height,  $1\frac{1}{8}$  inches.

Holes for supporting screws are spaced  $2\frac{3}{4}$  inches on centers.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
598	\$22.00	10	100	27

## P & S Porcelain Concealed Receptacles

For Outlet Boxes and Ceiling Plates

660 Watts, 600 Volts

Holes for supporting screws are spaced  $1\frac{1}{8}$  inches on centers.

Outside diameter of base,  $2\frac{5}{16}$  inches.

Height of receptacle,  $1\frac{5}{16}$  inches.

The base is cupped  $\frac{3}{16}$  inch.

Ample wiring room and rugged terminals.

Base is secured to the outside shell by twin screws in the lamp base.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4000	\$38.88	10	100	36

## P & S Brass-Covered Outlet Box Receptacles



No. 428

Brush brass is standard finish. No. 428 is furnished with short chain, long cord and ball.

For  $3\frac{1}{4}$  and 4-Inch Boxes  
 250 Watts, 250 Volts

Outside diameter  $4\frac{1}{16}$  inches; height over all,  $2\frac{1}{4}$  inches. Holes for supporting screws are spaced  $2\frac{3}{4}$  and  $3\frac{1}{2}$  inches on centers.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
428	\$183.82	Pull	10	50	69

660 Watts, 250 Volts

Outside diameter,  $4\frac{1}{16}$  inches; height over all,  $1\frac{1}{2}$  inches. Holes for supporting screws are spaced  $2\frac{3}{4}$  and  $3\frac{1}{2}$  inches on centers.

1010	\$84.84	Keyless	10	50	46
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For  $3\frac{1}{4}$ -Inch Boxes

660 Watts, 250 Volts

Outside diameter,  $3\frac{1}{16}$  inches; height over all,  $1\frac{1}{2}$  inches. Holes for supporting screws are spaced  $2\frac{3}{4}$  inches on centers.

1009	\$70.00	Keyless	10	50	32
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## P & S Porcelain Outlet Box Receptacles

660 Watts, 600 Volts



No. 40

Nos. 40 and 122 are equipped with 6-inch leads of No. 14 stranded rubber covered wire. Longer wire leads can be supplied at slight additional charge.

For  $3\frac{1}{4}$ -Inch Boxes

Outside diameter,  $3\frac{1}{2}$  inches; height over all,  $1\frac{1}{8}$  inches. Holes for supporting screws spaced  $2\frac{3}{4}$  inches on centers.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
40	\$40.40	Weatherproof	10	100	76
41	16.84	Keyless	10	100	60

For 4-Inch Boxes

Outside diameter,  $4\frac{1}{2}$  inches; height over all,  $1\frac{5}{16}$  inches. Holes for supporting screws spaced  $3\frac{1}{2}$  inches on centers.

110	\$21.06	Keyless	10	50	48
122	48.48	Weatherproof	10	50	56

## P & S Outlet Box Receptacles

With Removable Metal Covers



No. 442

Equipped with cadmium plated steel covers which have keyhole slot for quick installation. Can be supplied with black japanned covers without extra charge.



No. 457

Nos. 442 and 443 are equipped with 6-inch leads of No. 14 stranded rubber covered wire. Longer leads can be supplied at slight additional charge.

For  $3\frac{1}{4}$ -Inch Boxes

Outside diameter,  $3\frac{1}{16}$  inches; height over all,  $1\frac{1}{16}$  inches. Holes for supporting screws are spaced  $2\frac{3}{4}$  inches on centers.

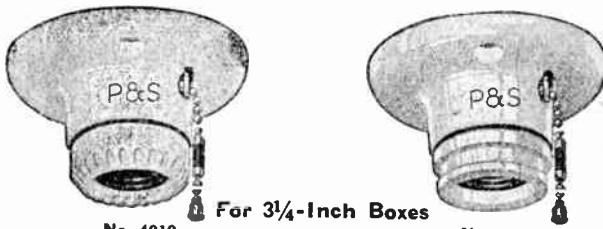
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
442	\$21.06	Weatherproof	10	100	60
456	15.78	With Screw Terminals	10	100	53

For 4-Inch Boxes

Outside diameter,  $4\frac{1}{16}$  inches, height over all  $1\frac{1}{8}$  inches. Holes for supporting screws are spaced  $2\frac{3}{4}$  inches on centers.

443	\$23.16	Weatherproof	5	100	72
457	17.90	With Screw Terminals	5	100	63

**P & S Porcelain Pull Receptacles**  
**With Flush Back**  
 250 Watts, 250 Volts



No. 4010 For 3 1/4-Inch Boxes No. 4026

Diameter of base, 3 3/8 inches; height over all, 1 1/2 inches. Holes for supporting screws are spaced 2 3/4 inches on centers.

With Plain Porcelain Ring					
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4010	\$31.58	Insulated Nickel Chain.....	10	50	41
4010-1	27.36	Short Chain Only.....	10	50	41
4010-2	31.58	Short Chain, Long Cord....	10	50	41
With Shade-Holder Groove Ring					
4026	\$31.58	Insulated Nickel Chain.....	10	50	41
4026-1	27.36	Short Chain Only.....	10	50	41
4026-2	31.58	Short Chain, Long Cord....	10	50	41

When a similar device is desired in keyless style, order P & S 41.

**For 4-Inch Boxes**

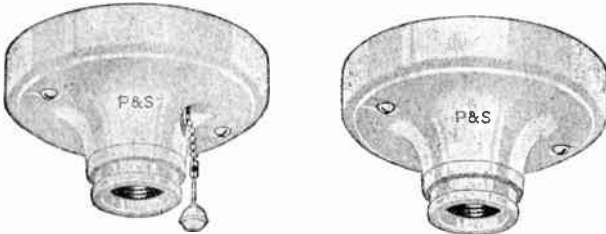
Diameter of base, 4 3/4 inches; height over all, 2 3/16 inches. Holes for supporting screws are spaced 3 1/2 inches on centers.

With Plain Porcelain Ring					
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4040	\$42.00	Insulated Nickel Chain.....	10	50	60
4040-1	38.00	Short Chain Only.....	10	50	60
4040-2	42.00	Short Chain, Long Cord....	10	50	60
With Shade-Holder Groove Ring					
4046	\$42.00	Insulated Nickel Chain.....	10	50	60
4046-1	38.00	Short Chain Only.....	10	50	60
4046-2	42.00	Short Chain, Long Cord....	10	50	60

When a similar device is desired in keyless style, order P & S 110.

**P & S Porcelain Receptacles**  
**With Recessed Back**

Pull—250 Watts, 250 Volts; Keyless—660 Watts, 250 Volts



No. 4011 No. 4058

Designed with deep recessed back to simplify installation when boxes are tilted or project from the wall.

Regularly supplied with shadeholder groove ring, but may be furnished with flared porcelain ring.

Pull type is equipped with short chain and long cord as standard, but can be supplied with 7-inch nickel chain, insulator and pendant without extra charge.

Receptacles are provided with necessary screws, straps and lock nuts for mounting on boxes.

**For 3 1/4-Inch Boxes**

Diameter of base, 4 inches; height over all, 2 inches. Holes for supporting screws spaced 2 3/4 inches on centers.

For Mounting on Boxes with Ears					
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4011	\$63.16	Pull, Short Chain, Long Cord.	10	50	50
4058	52.69	Keyless.....	10	50	50

**For 4-Inch Boxes**

Diameter of base, 4 3/4 inches; height over all, 2 inches. Holes for supporting screws spaced 3 1/2 inches on centers.

For Mounting on Boxes with Ears					
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4012	\$73.68	Pull, Short Chain, Long Cord.	10	50	65
4057	63.16	Keyless.....	10	50	65

**P & S Porcelain Pull Receptacles**  
**For Lighting Fixtures**

250 Watts, 250 Volts



No. 998

These receptacles are fitted with porcelain clamping rings and gaskets, and are for use with units having 1 1/2-inch throat.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
995	\$21.06	With 7-Inch Chain.....	10	100	35
997	23.16	With 7-Inch Insulated Chain..	10	100	35
998	23.16	With Short Chain, Long Cord.	10	100	35
99700	26.30	With 7-Inch Insulated Chain and Porcelain Pendant.....	10	100	35

**P & S Porcelain Screw Ring Receptacles**  
**For Signs, Fixtures and Outlet Boxes**  
**Shallow Back**



No. 4100

Length of back, 1 1/8 inches.

Punch required, 1 1/2 inches.

660 Watts, 600 Volts With Screw Terminals				
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*4100	\$10.52	25	250	52

**With Screw Terminals Enclosed**

*4101	\$12.64	25	250	66
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**With 9-Inch No. 14 Rubber Covered Wire Leads**

*4114	\$13.16	25	250	60
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**With No. 18 Heat Resisting Wire Leads**

*4118	\$7.52	25	250	55
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With Screw Terminals 660 Watts, 250 Volts				
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
59108	\$16.16	25	100	22

**Porcelain Ring Only for No. 59108**

61990	\$6.06	10	100	8
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\*Furnished with unglazed shell and ring.

**No. 6878 P & S Intermediate Base Porcelain Screw Ring Receptacles**

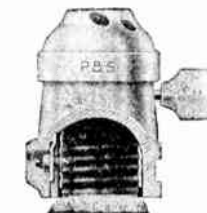
For Metal Signs, Decorative Lighting Etc.  
 75 Watts, 250 Volts

Has removable ring.  
 Hole required, 1 1/16 inches.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Per 100
6878	25	250	37	\$16.96



**P & S Porcelain Shurlok Sockets and No. 1245 Shade Holders**



The illustration shows how P & S Shurlok Sockets prevent the loss of lamps. The special screw can be operated only with P & S No. 1299 Key.

P & S No. 1299 Keys for use with all Shurlok devices are supplied only when ordered.

The price is 50 cents each net regardless of quantity.

P & S No. 1245 Shade Holders can be used with all porcelain Shurlok devices.





## P & S Bakelite Weatherproof Sockets

660 Watts, 600 Volts

Resists high temperature and rough handling.

### With Shadeholder Groove

Equipped with 6-inch wire leads of No. 14 stranded rubber-covered wire.

No. 630 is the same as No. 540, without shurlok.



No. 540 Shurlok

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
540 Shurlok	\$85.34	10	100	20
630	55.04	10	100	21

### With 3/8-Inch Female Nipple

Equipped with 6-inch leads of No. 18 rubber-covered fixture wire.

542	\$84.84	10	100	25
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No. 542

## No. 43310 P & S Composition Weatherproof Sockets

### With Shadeholder Groove

660 Watts, 600 Volts

Resists high temperature and rough handling. Equipped with 6-in. leads of No. 14 stranded rubber-covered wire.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
43310	\$12.00	10	100	26



## No. 5464 P & S Bakelite Sockets Weatherproof—Pin Type

660 Watts, 250 Volts

For use in temporary decorative lighting work. It is not necessary to strip the wires when using this socket. May be disconnected from wire and used again and again.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5464	\$18.95	10	100	13



## No. 6000 P & S Intermediate Base Bakelite Weatherproof Sockets

75 Watts, 250 Volts

This socket will resist high temperature and rough handling. Equipped with 6-inch leads of No. 18 rubber-covered fixture wire.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6000	\$16.96	25	100	6



## P & S Porcelain Sign Receptacles For Metal Signs—Candelabra Base

75 Watts, 125 Volts

Approved for indoor use only. Punch required, 25/32 inch in diameter. Length of back, 5/8 inch. Wires, 3/4 inch from surface. Porcelain ring and gasket.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Per 100
878	25	100	10	\$28.28



## No. 422 P & S Miniature Base Porcelain Weatherproof Sockets

75 Watts, 125 Volts

This socket will resist high temperature and rough handling. Equipped with 6-inch leads of No. 18 rubber-covered fixture wire.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
422	\$24.88	25	100	7



## P & S Porcelain Suspension Cleats

### Weatherproof

660 Watts, 600 Volts



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
430	\$9.90	Wires 3/4 In. Apart	10	100	10
291	16.96	Wires 2 1/2 In. Apart	10	100	22

## Benco Weatherproof Sockets

With Type S (1 1/16-Inch Diam.) Screw Thread

National Electrical Code Standard



No. 4200

Benco Sockets are made for industrial or heavy duty use. They have highly insulated, rugged interior and strong metal casing. Thread on casing may be used for attaching reflectors with S holder and Benco holders.

### Keyless Type—Medium Base

660 Watts, 600 Volts

Keyless sockets have a porcelain interior and lamp grip. Standard package, 50; carton, 10; weight, 17 pounds.

Casing Material	Finish	Tapped for 1/2-Inch I. P. Connection		Tapped for 3/8-Inch I. P. Connection	
		Cat. No.	Per 100	Cat. No.	Per 100
Aluminum	Pol. Alum.	*4200	\$70.70	*4201	\$70.70
Brass	Brush Brass	4202	85.00	4203	85.00
Copper	Nat. Copper	*4204	70.70	*4205	70.70

\*Also furnished in lots of 1000 at \$58.00 per 100.

### Pull Chain Type—Medium Base

660 Watts, 250 Volts

The inner-pull is a big feature of these Benco Sockets. It is a means to make them weather-proof and the chain action is unobstructed.

Molded composition interior and Benjamin Lamp Grip.

Standard package, 50; carton, 10; weight, 17 pounds.

Pull socket interior packed 50 in a standard package; carton, 10; weight, 13 pounds.



No. 4207

Casing Material	Finish	Tapped for 1/2-Inch I. P. Connection		Tapped for 3/8-Inch I. P. Connection	
		Cat. No.	Per 100	Cat. No.	Per 100
Aluminum	Pol. Alum.	4225	\$140.00	4226	\$140.00
Brass	Brush Brass	4207	140.00	4208	140.00
Copper	Nat. Copper	4236	140.00	4237	140.00

No. 4209, Pull Socket Interior Only.....per 100 \$90.00

## Benjamin Benco Threaded Holders

With Type S (1 1/16-Inch Diam.) Screw Thread

Benco Holders provide an easy means for attaching shades or reflectors to the Benco Sockets and Outlet Box Fittings. These holders are made to fit any glass or metal reflectors with standard neck sizes.

It should be noted, while considering the Benco Holders, that Benjamin Porcelain Enamelled Steel Reflectors are furnished with holders for attachment to Benco Sockets and Outlet Box Fittings.

### Polished Aluminum Holders—Weatherproof

	Cat. No.	Per 100	Size In.	Std. Pkg.	Car-ton	Wt., Lbs. Std. Pkg.
2 1/4-Inch Holder	4215	\$28.28	2 1/4	50	10	3
	4217	42.42	3 1/4	50	10	4



### Copper Holders—Weatherproof

	Cat. No.	Per 100	Size In.	Std. Pkg.	Car-ton	Wt., Lbs. Std. Pkg.
3 1/4-Inch Holder	4370	\$28.28	2 1/4	50	10	8
	4372	42.42	3 1/4	50	10	9
	4373	72.00	4	50	10	10



### Brushed Brass Holders

	Cat. No.	Per 100	Size In.	Std. Pkg.	Car-ton	Wt., Lbs. Std. Pkg.
4-Inch Holder	4377	\$28.28	2 1/4	50	10	8
	4379	42.42	3 1/4	50	10	9
	4380	72.00	4	50	10	10



**Benjamin Aluminum Weatherproof Sockets**

**For Use Without Shade Holders**  
National Electrical Code Standard  
660 Watts, 600 Volts



Especially designed for exterior and heavy duty service where no shade holder or reflector is required.

Keyless, medium base socket interior is one-piece porcelain of easy-to-wire design and high insulating properties. The strong aluminum casing protects the porcelain interior and makes the socket entirely weatherproof. Casing is separable for removal of porcelain interior for wiring.

Polished aluminum finish.

Standard package, 50; carton, 10; weight, 17 pounds.

- No. 4121, Tapping  $\frac{3}{8}$ -Inch.....per 100 \$56.56
  - No. 4123, Tapping  $\frac{1}{2}$ -Inch.....per 100 56.56
- Also furnished in 1000 lots at \$52.00 per 100.

**No. 91 Benjamin Medium Base Socket Extensions**

660 Watts, 250 Volts



This medium base socket extension is equipped with a bead for shade holder and provides a means of attaching glassware to flush sockets or ceiling receptacles.

In long narrow shades where the lamps are set too high for the best effects, No. 91 may be used to lower the lamps  $\frac{3}{8}$  inch.

Standard finish is lacquered brass.

Cat. No.	Description	Std. Pkg.	Car-ton	Wt., Lbs. Std.	Per 100
91	With Bright Brass Casing Having Uno Shade Holder Bead.....	50	10	10	\$17.00

**H & H Bakelite Cleat Receptacle**



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Pkg. Lbs.
50715-C	\$10.00	Pony Size.....	10	100	12	

**Federal Porcelain Clamp Sockets**

**Weatherproof Outlet Box Receptacles**

Standard package, 100.



Cat. No.	Description	Price
304B	Edison Socket, Screw Contact	\$ .50
303B	Weatherproof Socket, with 6-Inch Leads.....	.60

**Bryant Shade-Holders Ventilated Uno**

Uno Shade-Holders attach directly to the threaded bead on medium base sockets and receptacles. Because of the wedge thread, the fit between socket-shell and holder is rigid.



No. 501



No. 504



No. 533

**With Screws to Hold Shade**

Cat. No.	Finished	Unfinished	Size In.	Car-ton	Std. Pkg.	Wt., Lbs. Std.
501	\$8.40	\$7.70	2 1/4	50	500	22
505	24.24	21.30	3 1/4	25	250	27
511	33.58	29.96	4	10	100	17

**With Spring Grip to Hold Shade**

Cat. No.	Finished	Unfinished	Size In.	Car-ton	Std. Pkg.	Wt., Lbs. Std.
502	\$12.96	\$12.26	2 1/4	50	250	15
504	25.96	23.18	2 1/4	25	100	11

**Solid Uno**

**With Spring Grip to Hold Shade**

Cat. No.	Finished	Unfinished	Size In.	Car-ton	Std. Pkg.	Wt., Lbs. Std.
533	\$14.78	\$13.06	2 1/4	50	250	15

**Bryant Emergency Shade-Holders**

Emergency Shade-Holders made with spring grip only, are designed for medium screw base porcelain sockets and receptacles. They are not approved for use on circuits exceeding 250 volts. The screw shell of the shade-holder is insulated from the body of the shade-holder and screws over the shell of the socket or receptacle without interfering with the lamp.



No. 443

Cat. No.	Per 100	Size In.	Car-ton	Std. Pkg.	Wt., Lbs. Std.
443	\$31.10	2 1/4	25	100	7

**Bryant Uno Fixture Ring**

This ring is provided with the Uno thread and is used for attaching ornamental pieces to sockets.



No. 549

Cat. No.	Per 100	Size In.	Car-ton	Std. Pkg.	Wt., Lbs. Std.
549	\$8.84	...	50	200	4

**Bryant Weatherproof Shade-Holders**

Used with any medium base porcelain or composition socket or receptacle provided with a shade-holder groove.



Cat. No.	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Price per 100 Finished
628	2 1/4	25	250	15	\$15.80
629	3 1/4	10	100	9	22.98

**Hubbell Pull Socket Attachments**



Special finishes same advance as socket caps.

**For Brass Shell Pull Sockets**

Cat. No.	Per 100	For Reflectors Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std.
5828	\$38.88	8, 10 and 12	25	100	8
5829	38.88	14	25	100	9

**For Porcelain Pull Sockets**

Cat. No.	Per 100	For Reflectors Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std.
5957	\$38.88	8, 10 and 12	25	100	8
5958	38.88	14	25	100	9

**Composition Bushing**



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.
5380	\$ .80	1/8-Inch Socket Bushing....	200	1000	3
5381	2.12	3/8-Inch Socket Bushing....	200	1000	10



## Hubbell Direct Threading 3-Screw Type Shade Holders



No. 501



No. 505

These shade holders can be furnished less screws, untapped and unfinished. Prices quoted upon application. Standard finish is brush brass.

Cat. No.	Size Inches	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price per 100
501	2 1/4	Finished, Ventilated...	50	500	28	\$8.40
501	2 1/4	Unfinished, Ventilated...	50	500	28	7.70
505	3 1/4	Finished, Ventilated...	25	250	30	24.24
505	3 1/4	Unfinished, Ventilated...	25	250	30	21.30

## Hubbell 3-Screw Type Shade Holders

With Contractile Collars



No. 5339



No. 5594

Hubbell Shade Holders with contractile collar will fit threaded shell sockets equally as well as the beaded shell, but will not fit combination threaded and beaded shells.

The contractile collar type is recommended where absolute security is desired.

Standard finish, brush brass.

Cat. No.	Per 100	Size Inches	Description	Car-ton	Std. Pkg.	Wt., Lbs.
5339	\$7.70	2 1/4	Ventilated, Finished...	50	500	28
5594	12.02	2 1/4	Solid Top, Finished...	50	500	30
5340	24.24	3 1/4	Ventilated, Finished...	25	250	25
5596	22.48	3 1/4	Solid Top, Finished...	25	250	27
5595	29.06	4	Ventilated, Finished...	25	100	14

No. D1675, Finished, Separate Split Rings, Standard Package, 200.....per 100 \$2.82

## No. 5528 Hubbell Shade Holders Locking Spring Type



Ventilated. Size, 2 1/4 inches. Carton, 50. Standard package, 250. Weight, 16 pounds. Standard finish, brush brass.

Price, Finished.....per 100 \$14.78

## Hubbell Shade Holders

For Medium Base Weatherproof Sockets



No. 6633



No. 6634

Standard finish is brush brass.

Cat. No.	Per 100	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs.
6633	\$15.80	2 1/4	25	200	13
6634	22.98	3 1/4	10	100	15
6635	45.24	4	10	100	20

## Hemco Cube-Taps, Twin-Lite, and Thru-Lite Plugs



No. H17  
Cube-Tap



No. H18  
Cord Cube-Tap



No. H20  
Twin-Lite



No. H204  
Thru-Lite

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
H17	\$7.36	Templus Cube-Tap.....	20	100	10
H18	8.42	Templus Cord Cube-Tap.....	20	100	9
H20	13.00	Templus Twin-Lite.....	10	100	12
H204	22.00	Templus Thru-Lite.....	10	100	16

## No. H706 Hemco Templus Plug Bodies



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
H706	\$3.80	50	500	18

## Hemco Templus and Rubber Handle Caps



No. HF

### Templus Handle Caps

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
HF	\$4.60	With 1/2-Inch Hole.	25	100	5



Nos. HRE and HRF

### Rubber Handle Caps

Cat. No.	Price	Hole Size	Car-ton	Std. Pkg.	Wt., Lbs.
HRA	\$10.00	.312 to .390-In. Hole	25	100	7
HRB	10.00	.260 to .312-In. Hole	25	100	7
HRE	10.00	.312 to .390-In. Hole	25	100	14
HRF	10.00	.260 to .312-In. Hole	25	100	14
HRS	30.00	.578-Inch Hole.....	25	100	6



No. HRD

HRD 10.50 With .425-Inch Hole 50 100 9



Nos. HUT and HUX

### Templus Caps

Cat. No.	Price	Hole Size	Car-ton	Std. Pkg.	Wt., Lbs.
HUT	\$3.30	3/32 x 3/8-Inch Hole....	50	500	19
HUX	3.30	1/4 x 3/16-Inch Hole....	50	500	19

## No. 345 Bryant Attachment Plugs Molded Weatherproof, Fuseless 660 Watts, 600 Volts

No. 345 plug is fitted with 6 inches of No. 14 B. & S. stranded rubber covered wire. Longer wires on special order. Extra charge, 9 cents list per foot each conductor.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
345	\$31.10	10	250	44





**No. JX Bryant Composition Caps**

With Cord Grip

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

$\frac{1}{8}$ -inch cord hole.

Steel armored cap, cadmium-plated.

With cord grip.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
JX	\$32.00	10	50	6

**No. KG Bryant Composition**

Motor Attachment Caps

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Has  $\frac{1}{32}$ -inch cord hole.

Base is  $1\frac{1}{32}$  inches in diameter and  $\frac{1}{16}$  inches thick. Screw spacings, 1 inch.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
KG	\$15.76	10	50	4

**No. TW Bryant Double T Caps**

With Cord Grip—For Heavy Duty

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Armored cadmium-plated cap.

Has  $\frac{1}{32}$ -inch cord hole.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
TW	\$53.32	10	30	4

**No. TV Bryant Double T Caps**

For Heavy Duty

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Brown Templus cap.

Has  $\frac{1}{32}$ -inch cord hole.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
TV	\$46.66	10	50	3

**No. KL Bryant Composition Adapters**

660 Watts, 250 Volts

Diameter,  $1\frac{1}{16}$  inches.

Length,  $1\frac{1}{32}$  inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
KL	\$36.36	10	50	7

**No. UR Bryant Spartan Flush Motor Plug Caps**

Back Connected

15 Amps., 125 Volts; 10 Amps., 250 Volts

Diameter of cup,  $1\frac{1}{2}$  inches. Depth,  $\frac{1}{4}$  inches. Screw hole spacing,  $1\frac{1}{16}$  in.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
UR	\$36.36	10	50	7

**No. KE Bryant Composition Pilot Caps**

15 Amperes, 125 Volts

Furnished with brass guard and lamp for 125 volts.

Diameter,  $1\frac{3}{8}$  inches.

Length,  $3\frac{1}{2}$  inches.

Extra lamp, No. 618, for this cap is listed on another page.

When No. 618 lamp is omitted deduct \$35.00 per 100 lamps from price of No. K.E.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
KE	\$106.66	10	10	2

**No. 105 Bryant Porcelain Receptacles**

Concealed Base

15 Amperes, 125 Volts

10 Amperes, 250 Volts

Diameter of base is  $2\frac{3}{32}$  inches. Height,  $1\frac{3}{8}$  inches. Screw spacing,  $1\frac{1}{2}$  inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
105	\$40.00	10	50	15

**No. 112 Bryant Porcelain Outlet Box Receptacles**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Base diameter,  $1\frac{3}{4}$  inches. Top diameter,  $1\frac{13}{32}$  inches. Height,  $1\frac{1}{2}$  inches. Screw spacing,  $\frac{5}{8}$  inch.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
112	\$40.00	10	50	13

**No. 114 Bryant Porcelain Outlet Box Cover Receptacles**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Requires hole  $1\frac{1}{16}$  in. in diam. Diam. is  $1\frac{1}{16}$  in.; projects  $\frac{1}{2}$  in. above and 1 in. below cover; distance from back of cover to bottom of wire grooves,  $\frac{1}{16}$  in.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
114	\$40.00	10	50	14

**No. 103 Spartan Composition Cord Connector Bodies**

15 Amperes, 125 Volts  
10 Amperes, 250 Volts

Diameter,  $1\frac{3}{8}$  inches. Cord hole,  $1\frac{1}{32}$  inch. Length,  $1\frac{3}{8}$  inches.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
103	\$36.36	10	50	6

**No. H130 Hemco Cord Connector Bodies**

Templus



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
H130	\$13.00	25	50	4

**Bryant Receptacles**

For Mounting in Canopies

15 Amps., 125 Volts; 10 Amps, 250 Volts

No. 724 Templus



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
724	\$30.30	With 6-Inch Wires	10	50	4

No. 724-C White Porcelain

724C	\$18.18	Without Wire Leads	10	50	6
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**No. 113 Bryant Composition Outlet Box Bodies**

For  $\frac{1}{2}$ -Inch Knockouts

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Does not have tandem slots  
Will not take polarity caps.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
113	\$33.34	10	50	6

## Bryant Templus Flush Receptacles For Plates without Doors

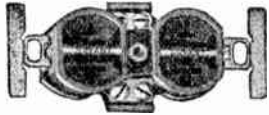
15 Amps., 125 Volts; 10 Amps., 250 Volts Each Outlet



### Top Wiring Terminals No. 4810 Single

Depth,  $2\frac{7}{32}$  in.

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4810	\$29.00	10	100	15



### No. 4812 Duplex

Depth,  $2\frac{9}{32}$  in.

4812	\$38.38	10	100	15
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### Side Wiring Terminals No. 4831 Single

Depth,  $2\frac{1}{32}$  in.

4831	\$22.00	10	100	14
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### No. 4832 Duplex

Common Feed, Common Ground  
Two binding screws in each side wiring terminal.

Depth,  $2\frac{7}{32}$  in.

4832	\$29.00	10	100	18
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### No. 4832X Duplex

Separate Feed, Separate Ground

Depth,  $2\frac{7}{32}$  in.

4832X	\$35.06	10	100	18
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### No. 4832Y Duplex

Separate Feed, Common Ground

Depth,  $2\frac{7}{32}$  in.

4832Y	\$35.06	10	100	18
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No. 770 for Tumbler Switch Plate  
For use with Templus plates only. Depth,  $\frac{1}{8}$  in.

770	\$22.22	10	100	14
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## Hemco Templus Receptacles



No. H141



No. H142

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
H141	\$9.48	Single Receptacle...	10	100	12
H142	12.64	Duplex Receptacle...	10	100	14

## Bryant Top Wired Duplex Flush Receptacles

With Templus Plate Having Integral Bosses

15 Amps., 125 Volts; 10 Amps., 250 Volts, Each Outlet

Body and plate are of brown Templus. Top wiring terminals, with two binding screws in each side.

Templus shoulders protect the screws and hold the wires in place.

Completely enclosed moisture-proof bakelite back.

Base is  $2\frac{13}{16} \times 1\frac{11}{16}$  inches.

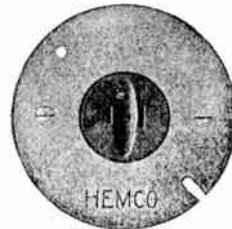
Depth,  $2\frac{9}{32}$  inches.

Supporting screw spacing,  $3\frac{3}{32}$  inches.



Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4822	\$58.98	10	100	29

## Hemco Outlet Box Receptacles



No. H341

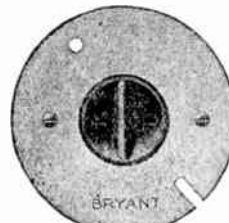
Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Lbs.
H341	\$23.32	Single, on $3\frac{1}{4}$ -Inch Box Cover...	10	50	16
H342	26.32	Duplex, on $3\frac{1}{4}$ -Inch Box Cover...	10	50	25
H441	24.22	Single, on 4-Inch Box Cover...	10	50	25
H442	27.36	Duplex, on 4-Inch Box Cover...	10	50	23

## Bryant Outlet Box Receptacles

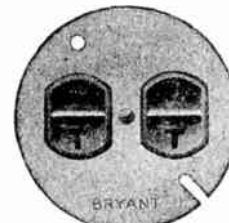
Brown Templus—With Cadmium Covers

15 Amps., 125 Volts; 10 Amps., 250 Volts Each Outlet

These devices are provided with side-wired brown Templus receptacles. Binding terminal screws are No. 8, which are heavier and with larger heads than ordinarily used on devices of this type. The receptacles are also provided with raised ribs which facilitate insertion of caps in the concave surfaces.



No. 3780, Single



No. 3781, Duplex

### Single, Side Wired Cadmium-Plated Covers

Cat. No.	Per 100	Size Box In.	Car- ton	Std. Pkg.	Wt., Lbs.
3780	\$29.00	$3\frac{1}{4}$	10	100	40
4780	30.00	4	5	50	28

### Duplex, Side Wired Cadmium-Plated Covers

3781	\$36.00	$3\frac{1}{4}$	5	50	21
4782	37.00	4	5	50	23

## Bryant Round Porcelain Receptacles

15 Amperes, 125 Volts

10 Amperes, 250 Volts



No. 115

Suitable machine screws are furnished for mounting these devices on boxes.

The standard finish is brush brass which will be furnished when no finish is specified.

With Solid Brass Plate



No. 733

Cat. No.	Per 100	Diam. Plate In.	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
115	\$103.02	$2\frac{3}{4}$	1	50	19
116	115.14	$3\frac{5}{8}$	1	50	28

With Ears

733	\$26.26	...	10	50	9
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**Bryant Receptacle and Switch Combinations**

**Single Gang—Porcelain Cups**  
10 Amperes, 125 Volts; 5 Amperes, 250 Volts



No. 2957

Switches operate horizontally.  
Carton, 1. Standard package, 10.

**With .060-Inch Brass Plate**

Cat. No.	Per 100	Type Switch	Wt., Lbs. Std. Pkg.
2957	\$163.62	Double Pole	7
3957	163.62	Single Pole Quadruple Break	7

**With Brown Templus Plate with Integral Boss**

2979	\$163.62	Double Pole	5
3979	163.62	Single Pole Quadruple Break	5

**Bryant Receptacle and Switch Combinations**

**Single Gang—Templus Cups**

Each combination includes a Spartan Receptacle and an indicating flush tumbler switch which operates vertically.  
Carton 1, Standard package, 10.



No. 2994

**With .060-Inch Brass Plate**  
10 Amperes, 250 Volts

Cat. No.	Per 100	Type Switch	Wt., Lbs. Std. Pkg.
2994	\$175.74	Double Pole	6
3994	175.74	Single Pole Quadruple Break	6

**20 Amperes, 250 Volts**

2995	\$187.86	Double Pole	6
3995	187.86	Single Pole Quadruple Break	6

**With Brown Templus Plate with Integral Boss**

10 Amperes, 250 Volts			
2989	\$175.74	Double Pole	5
3989	175.74	Single Pole Quadruple Break	5

20 Amperes, 250 Volts			
2999	\$187.86	Double Pole	7
3999	187.86	Single Pole Quadruple Break	7

**Bryant Pilot Light Combinations**

10 Amperes, 125 Volts



Combination of one switch and one pilot light with brass guard, with .060-inch plate, ready-wired, 1-gang.

Porcelain cup is 2 1/16 inches long, 1 1/16 inches wide, and 1 3/8 inches deep.

Supporting screw holes are spaced 3 3/32 inches on centers vertically for installation in a standard 1-gang outlet box.

The lamp is in circuit when the switch is closed, so this device can be used for the control of cellar lights, garage and attic lights and in many other places where a tell-tale is desired.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2959	\$282.80	Double-Pole Tumbler Switch	1	10	8
3959	282.80	Single-Pole Quadruple Break Tumbler Switch	1	10	8

Price of either of the above combinations, without plates, is \$214.92 per 100 list.

**Brass Flush Plates Only with Lamp Guards**

OM261	\$67.88	For Nos. 2959 and 3959	1	10	6
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**Bryant Receptacle and Pilot Lamp Combinations**

10 Amperes, 125 Volts



Single gang.  
With porcelain cup.  
Plate, 2 3/4 x 4 1/2 inches.  
Suitable machine screws are furnished for mounting on boxes.

The standard finish is brush brass which will be furnished when no finish is specified.  
Carton, 1. Standard package, 10.

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
5121	\$181.80	With .060-Inch Brass Plate	15
5122	181.80	With Brown Templus Plate	10

**No. 763 Bryant Pilot Light Combinations**

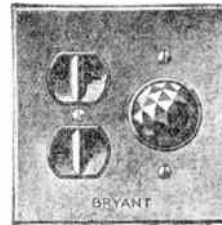
10 Amperes, 125 Volts

Ready-wired combination of one duplex flush receptacle, one pilot light, with solid plate, 2-gang.

The insertion of the plug illuminates the bull's eye.

Porcelain cup is 2 5/16 inches long, 3 1/2 inches wide, 1 5/8 inches deep.

Four supporting screw holes, spaced 3 3/8 inches on centers vertically and 1 13/16 inches on centers horizontally for installation in standard 2-gang outlet box.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
763	\$365.52	1	10	16

**Bryant 3-Wire Duplex Flush Receptacles**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts Each Outlet

The use of 3-wire outlets in place of the usual 2-wire receptacles is becoming more general. Safety considerations usually demand the grounding of home and industrial appliances. This can best be done by using 3-wire cord with suitable caps and receptacles.

**Side Wired**

For use with standard duplex receptacle plates (V section).

Base, 2 13/16 x 1 13/32 inches.

Depth, 2 7/32 inch.

Supporting screw spacing, 3 3/32 inches.

No. 4327 has grounded yoke.



No. 4326

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4326	\$166.66	10	30	3
4327	166.66	10	30	3

**Top Wired**

Complete with Templus plate, having integral bosses.

No. 4323 has grounded yoke.

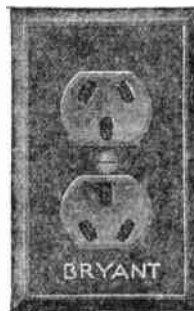
Base, 2 13/16 x 1 11/16 inches.

Depth, 2 7/32 inch.

Supporting screw spacing, 3 3/32 inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
4322	\$170.70	10	30	8
4323	170.70	10	30	8

Nos. 4326 and 4322 are for use with systems grounded by a third wire. Nos. 4327 and 4323 are for use with systems of grounded rigid or flexible conduit.



No. 4322



## Bryant Bull's Eye Jewels, Receptacles, Lamps, Plates, and Switch Plate Inserts

The Bryant Bull's Eye is a warning signal of great utility and convenience. It consists of a ruby glass jewel fastened in the center of a flush plate of standard dimensions, behind which is a small electric lamp in a special receptacle. This lamp is wired in multiple with the devices whose operation it indicates.

Green, clear, opalescent, amber, or blue jewels can be furnished on special order without extra charge.



Ruby Jewels					
Round, for Mounting in "F" Plates					
With ventilated brass ring.					
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
No. 737	737	\$106.06	10	30	2



Ruby Jewels					
Rectangular, for Mounting in Slot of an "S" Plate					
With solid rim.					
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
No. 746	746	\$35.36	10	30	1

### Flush Lamp Receptacles for Use with Jewels



75 Watts  
With No. 618 125-volt lamp. Will take either Form H or Type S-7 candelabra base lamps, rated 125 volts. Porcelain cups,  $2\frac{9}{16}$  inches long;  $1\frac{1}{16}$  inches wide;  $1\frac{1}{8}$  inches deep. Supporting screw spacing,  $3\frac{3}{32}$  inches.

May be installed individually or may be mounted in a combination with switches and receptacles and the entire combination covered by a single flush plate.

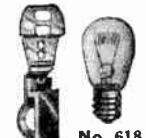
No. 427	427	\$98.98	10	30	11
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### Louvre Plate for Use with Flush Lamp Receptacles

Can be used with No. 427 receptacle. Made in .040-inch brass only. Single gang.

No. OL241	OL241	\$113.12	10	30	18
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### Flush Lamp Receptacles

125 Volts  
Candelabra base, 6 watts Mazda. For No. 427 receptacle, and also Nos. KE, 2959, and 3959.

No. 618	618	\$49.50	10	30	3
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### Insert to Fill Opening in "S" Plate

Brown bakelite. Insert on metal yoke.

No. 756	756	\$21.22	10	30	1
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### Receptacle with No. 618 Lamp for Plates with Removable Bull's Eye

No. 3851	3851	\$98.98	10	30	9
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### Round Jewel, Solid Ring, Removable Bull's Eye

No. 3850	3850	\$35.36	10	30	..
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## Bryant 3-Wire Caps, Connectors and Receptacles

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



Caps						
Brown Templus						
Cat. No.	Per 100	Cord Hole In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
No. 9110	9110	\$38.88	$1\frac{3}{32}$	10	50	4



No. 9111	9111	\$33.34	$1\frac{3}{32}$	10	50	6
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Composition						
Composition, with Armored Cord Grip						
No. 9112	9112	\$53.32	$1\frac{7}{32}$	10	50	8



Flush Motor Plug Cap						
No. 9115	9115	\$73.32	...	10	50	13



Composition Cord Connectors						
Body						
No. 9113	9113	\$66.66	$1\frac{3}{32}$	10	50	9



Body, with Armored Cord Grip						
No. 9114	9114	\$86.66	$1\frac{7}{32}$	10	50	11



Receptacles						
No. 9113 and 9323	9113 and 9323					

Bases of Nos. 9116 and 9120 are  $2\frac{1}{2} \times 1\frac{1}{8}$  inches. Depth,  $1\frac{1}{8}$  inches. Supporting screw spacing,  $3\frac{3}{32}$  inches. Top wiring terminals. Take standard F plates.

Composition Flush						
No. 9116	9116	\$113.32	...	10	50	15

Porcelain, Flush Conduit Box						
Templus top, screw terminals.						
No. 9117	9117	\$53.32	...	10	50	12

Porcelain Concealed Base						
No. 9119	9119	\$66.66	...	10	50	19

No. 9119 has supporting screw spacing of  $1\frac{3}{4}$  inches.

Composition Flush, with Grounding Terminal Connected to Yoke						
No. 9120	9120	\$113.32	...	10	50	15



20 Amperes, 250 Volts						
Cord Grip Cap						
No. 9117	9117	\$86.66	$\frac{5}{8}$	10	20	5

Steel covered, cadmium-plated.

### Composition Cord Connector

With steel covered cap, cadmium-plated.

No. 9322	9322	\$86.66	$\frac{5}{8}$	10	20	5
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Porcelain Receptacles						
Flush						
No. 9323	9323	\$146.66	$\frac{5}{8}$	10	20	7

Base,  $2\frac{9}{16} \times 1\frac{1}{8}$  inches. Depth,  $1\frac{1}{8}$  inches. Screw spacing,  $3\frac{3}{32}$  inches. Takes standard F plate.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9326	\$126.66	10	30	15
9326-G	126.66	10	30	13

No. 9326-G has grounded yoke.

### Concealed Base

No. 9325	9325	\$86.66	10	30	25
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For 4-Inch Outlet Cover

No. 9324	9324	\$139.98	5	30	20
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**Bryant 3-Wire Polarized Caps and Receptacles**

**Heavy Duty**

**3-Wire Polarized Caps**



No. 786

**With Screw Terminals**  
30 Amperes, 250 Volts

Composition cap, with grounding prongs and 3/4-inch cord grip.

Has ears for permanently attaching cap to the plate; also for ground connection. Ears can be removed if not required.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
786	\$141.40	1	10	6



No. 776

**With Solder Lugs**  
60 Amperes, 125 Volts  
40 Amperes, 250 Volts

Composition caps, with grounding prongs and clamp for armored conductor.

Cat. No.	Per 100	Straight Clamp		Pkg.	Wt., Lbs. Std. Pkg.
		1	10		
775	\$197.96	1	10	15	
		Angle Clamp			
776	\$212.10	1	10	16	

**3-Wire Polarized Receptacles with Solder Lugs**

60 Amperes, 125 Volts; 40 Amperes, 250 Volts

Nos. 747 and 787 fit (Universal) No. 72C102 cover for 4 1/16-inch square box.



No. 757

**Porcelain Surface Receptacle**

Mounting screw spacing, 2 15/16 inches.

747	\$98.98	5	10	10
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**Porcelain Flush Receptacle**

757	\$438.34	1	10	11
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No. 787

**Composition Surface Receptacle**

Mounting screw spacing, 2 7/8 inches.

787	\$155.54	5	10	7
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**Flush Plates for 3-Wire Receptacle No. 757**

These plates are 5 1/2 inches square with 2 1/2-inch center hole and are fitted with contacts for grounding prongs.

Supporting screw spacings are 3 1/8 x 3 3/8 inches to fit No. 758 plaster box cover.



No. 691

**Solid Brass Plate**

Standard finish is brush brass.

691	\$141.40	1	10	10
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**.060-Inch Cadmium-Plated Steel Plate**

Has square edges and square corners.

788	\$70.70	1	10	5
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**Box Covers for 3-Wire Receptacle No. 757**

**For Plaster Box**



No. 758

758	\$70.70	1	10	5
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**For 4 1/16-Inch Box**



No. 759

Will fit No. 72171 Box, as manufactured by General Electric Company, National Electrical Products Company, Roach-Appleton Mfg. Company, and Steel City Electric Company.

759	\$141.40	1	10	8
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**Bryant Triple-Pole Outlet Receptacles and Fittings**

**Heavy Duty**

**3-Wire Cord Sets**



No. 3829



No. 3831

These cord sets are mechanically and electrically perfect. Cap and lug joints are proof against loosening.

Complete protection against cord defects and trouble.

Length, 38 inches.

**All-Rubber Sets with Cap**

Cat. No.	Per 100	Conductors	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt., Lbs.
			125 Volts	250 Volts			
3829	\$272.70	Two No. 8, One No. 10	35	35	1	10	10
3830	\$223.20	Two No. 6, One No. 8	50	40	1	10	19

**Armored Sets with No. 776 Cap**

3831	\$545.40	Three No. 8	35	35	1	10	50
3832	\$464.40	Three No. 6	50	40	1	10	43

**3-Wire Surface Range Receptacle**

High heat black composition. Rugged construction.

Has opening for 3/4-inch conduit and knock-out for 1-inch conduit.



No. 3826

Cat. No.	Per 100	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt., Lbs.
		125 Volts	250 Volts			
3826	\$181.80	50	40	2	10	14

**Grounding Strap for No. 3826 With Separate Ground**

Range grounding strap is readily attached.



No. 3827

3827	\$40.40	..	..	2	10	1
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**Tube and Connector Clamp for Three No. 6 Wires**

Protects and grips non-metallic cable where it passes through the floor.



No. 3828

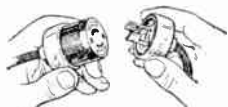
3828	\$70.70	..	..	2	10	3
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## Hubbell Twist-Lock Devices

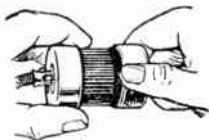
National Electric Code rules advise installation of polarized and grounded devices to protect the users of portable motor driven tools and equipment.

Many industrial plants, equipping with 3 and 4-wire protective devices, are specifying Twist-Lock to end the work-

interrupting disconnection nuisance which troubles users of portable equipment. Twist-Lock Devices never part in the middle of a job, no matter how hard the cord is yanked about. A lock-fast connection is made by a twist of the cap.



1. Plug in-



2. Twist-



3. They're locked!

### 2-Wire Twist-Lock Caps 10 Amperes, 250 Volts



No. 9763



No. 7102



No. 7062

### Rubber Cord Grip Caps

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9763	\$48.48	3/16-Inch Cord Hole	10	30	5
*9764	54.54	3/16-Inch Cord Hole	10	30	5
9765	54.54	5/8-Inch Cord Hole	10	30	5
*9766	54.54	5/8-Inch Cord Hole	10	30	5

### Metal Covered Cord Grip Caps

7102	\$48.48	3/16-Inch Cord Hole	10	30	7
*9102	48.48	3/16-Inch Cord Hole	10	30	7
7238	48.48	5/8-Inch Cord Hole	10	30	7
*9103	48.48	5/8-Inch Cord Hole	10	30	7

### Composition Caps

7062	\$36.36	1 1/2-Inch Cord Hole	10	50	7
*7063	36.36	1 1/2-Inch Cord Hole	10	50	7

\*Polarized—One wide and one narrow blade.

### 2-Wire Porcelain Flush Receptacles

10 Amperes, 250 Volts



This receptacle may be used with either polarized or non-polarized Twist-Lock Caps.

Supporting screw holes spaced 3 1/2 inches.

No. 7210 receptacle fits any standard single convenience outlet plate.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7210	\$48.48	10	50	13

### With 3 1/4-Inch Cover

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7216	\$54.54	5	50	27

### With 4-Inch Cover

7217	\$60.60	5	30	18
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Standard finish of covers is cadmium finish. Black japan covers may be had on special order at no advance in price.

### 2-Wire Porcelain Receptacles

10 Amperes, 250 Volts



Mounting screws 3 1/2 inch on centers. Diameter 1 3/4 inches, height 1 27/64 inches. Face diameter 1 1/2 inches.

Similar to Cat. No. 5624, but is of the Twist-Lock Type and polarized.

Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7624	\$48.48	Receptacle	..	10	50	14

### 2-Wire Cord-Grip Connectors 10 Amperes, 250 Volts

Composition. Steel covered, cadmium plated.

Bodies may be used with either polarized or non-polarized caps.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7101	\$72.72	Body Only	10	30	10
7102	48.48	Cap Only	10	30	7
*9102	48.48	Cap Only	10	30	7

### With 3/8-Inch Cord Hole

7224	\$72.72	Body Only	10	30	10
7238	48.48	Cap Only	10	30	7
*9103	48.48	Cap Only	10	30	7

\*Polarized.

### 2-Wire Cord-Grip Surface Motor Plugs 10 Amperes, 250 Volts

Composition. Steel covered, cadmium plated.

Bodies may be used with either polarized or non-polarized bases.

### With 3/8-Inch Cord Hole

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7101	\$72.72	Body Only	10	30	10
7191	36.36	Base Only	10	30	4
*9104	36.36	Base Only	10	30	4

\*Polarized.

### With 1/2-Inch Cord Hole

7224	\$72.72	Body Only	10	30	10
7191	36.36	Base Only	10	30	4
*9104	36.36	Base Only	10	30	4

\*Polarized.

### 2-Wire Cord-Grip Flush Motor Plugs

10 Amperes, 250 Volts

Bodies may be used with polarized or non-polarized bases.



No. 8808

Cat. No.	Per 100	Description	Cord Hole In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7101	\$72.72	Body Only	3/16	10	30	10
7224	72.72	Body Only	5/8	10	30	10
8808	60.60	Base Only	..	10	30	6
*9105	60.60	Base Only	..	10	30	6

\*Polarized.

### 3-Wire Small Size Bakelite Connectors

10 Amperes, 250 Volts—15 Amperes, 125 Volts  
Bakelite Caps

Cat. No.	Per 100	Description	Cord Grip In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7554	\$57.58	Cap.....	3/16	10	50	6
7558	57.58	Cap.....	5/8	10	50	6

### Bakelite Connector Bodies

7555	\$91.92	Body.....	3/16	10	50	8
7559	91.92	Body.....	5/8	10	50	8

### Bakelite Motor Plug Bases in Casings

7556	\$75.76	Base with Contact Blades...	..	10	50	5
7557	85.86	Flush Base.	..	10	50	7



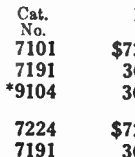
No. 7101



No. 7102



No. 7191



No. 9104



No. 8808



No. 7554



No. 7555



No. 7556



**Hubbell Twist-Lock Devices**

**3-Wire Polarized Plug Caps**



No. 7311

20 Amperes, 250 Volts

Cord-grip for 2 3/32-inch diameter cords.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
*7311	\$86.66	Composition, Armored.....	10	30	12	
9965	86.66	Rubber.....	10	30	8	

**3-Wire Porcelain Flush Receptacles**

20 Amperes, 250 Volts

Supporting screw holes spaced 3 3/32 inches. No. 7310 receptacle fits any single standard convenience outlet plate.



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
*7310	\$126.66		10	30	15	
†7502	76.36		5	10	5	

†Plate for 2 outlets. Requires 3-gang outlet box.

With 4-Inch Box Covers Attached

Standard finish is cadmium. Black japan may be had at no advance in price.

\*For grounding information see foot note.



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7517	\$139.98		5	20	12	

**3-Wire Porcelain Conduit Box Receptacles**

20 Amperes, 250 Volts

Designed for permanent grounding from one contact to conduit system.

Mounting screws 5/8-inch centers. Suitable for use with Crouse-Hinds W condulets and O cover, Appleton Electric Co. W unilets with No. 5680 cover, and Adalet Mfg. Co. fittings Nos. G2H, G3H and G4H.



No. 7329

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7329	\$90.90	Receptacle....	10	30	10	

**3-Wire Cord Connectors**

20 Amperes, 250 Volts

Composition. Cord-grips accommodate 2 3/32-inch diameter cords.

\*For grounding information see foot note.



No. 7311

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7311	\$86.66	Cap Only....	10	30	12	
7313	146.66	Body Only...	10	30	13	

**3-Wire Flush Motor Plugs**

20 Amperes, 250 Volts

Diameter of casing flange, 2 7/8 inches.

Diameter of casing base, 2 3/32 inches.

Depth of casing, 1 19/32 inches.

Furnished with 3 mounting screw holes spaced 120 degrees apart on 1 1/4-inch radius.

\*For grounding information see foot note.



No. 7327

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7327	\$84.84	Base Only in Casing....	10	30	15	

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7318	48.48	Base Only, Composition.....	10	30	8	



No. 7318

\*If 3 or 4-wire Twist-Lock devices are desired with ground shunt form one contact to cover or casing, suffix letter G to catalogue number.

**Hubbell Twist-Lock Devices**

**4-Wire Polarized Plug Caps**



No. 7411

20 Amperes, 250 Volts

Cord grip for 2 3/32-inch diameter cords.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
*7411	\$113.32	Composition, Armored..	10	20	12	
9967	113.32	Rubber.....	10	20	9	

**4-Wire Porcelain Flush Receptacles**

20 Amperes, 250 Volts

Supporting screw holes spaced 3 3/32 inches. \*For grounding information see foot note.

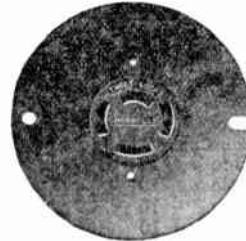


Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7410	\$163.62	Receptacle...	10	20	16	
7421	25.46	Single Plate, .060" Brass	10	20	7	
†7422	76.36	3-Gang Plate.	5	10	5	

†Plate for 2 outlets. Requires 3-gang outlet box.

With 4-Inch Box Covers Attached

\*For grounding information see foot note.



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7417	\$175.74		5	15	10	

Standard finish is cadmium. Black japan may be had at no advance in price.

**4-Wire Connectors**

20 Amperes, 250 Volts

Composition. Cord-grips accommodate 2 3/32-inch diameter cords.

Diameter of base, 2 3/8 inches.

Height, 3/4-inch.

Holding screws are spaced 1 7/8 inches on centers for No. 6 screws.

\*For grounding information see foot note.



No. 7411



No. 7413

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7413	\$193.92	Body Only..	10	20	14	
7411	113.32	Cap Only...	10	20	12	

**4-Wire Flush Motor Plugs**

20 Amperes, 250 Volts

Diameter of casing flange, 3 5/16 inches.

Diameter of casing base, 2 19/32 inches.

Depth of casing, 1 19/32 inches.

Furnished with 4 mounting screw holes spaced 2 29/32 inches on centers 90 degrees apart.

\*For grounding information see foot note.



No. 7415



No. 7408

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
7408	\$109.08	Base Only, in Casing	10	20	9	
7415	60.60	Base Only, Composition	10	20	7	

\*If 3 or 4-wire Twist-Lock devices are desired with ground shunt from one contact to cover or casing, suffix letter G to catalogue number.

## Hubbellock Approved Industrial Devices

### For High Frequency Portable Tools

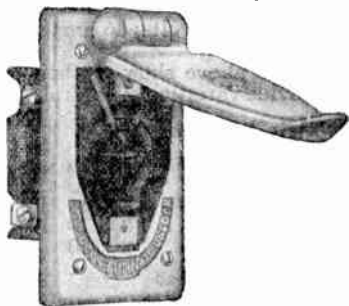
20 Amperes, 250 Volts D.C.; 30 Amperes, 600 Volts A.C.

Built unusually strong to withstand the daily strain, severe service and electrical hazards incidental to the use of high frequency, high cycle portable tools.

The positive locking feature prevents accidental breaking of current, with consequent stoppage of production, and guarantees a lock-fast connection, as long as desired. Standard finish is cadmium.

### 4-Wire Polarized Receptacles, Cord Connectors and Caps

With Adjustable Cord Grips



No. 20401, with Cast Iron Lift Cover Plate



No. 20403, Receptacle



No. 20415, Cap



No. 20414, Connector Body

Receptacles will fit FS and FD boxes.

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
20401	\$500.00	Receptacle with Lift Cover...	2	20	27	
20402	490.00	*Receptacle with Plate...	2	20	18	
20403	425.00	Receptacle Only.....	2	20	10	
20414	485.00	Connector Body Only.....	2	20	20	
20415	325.00	Cap Only.....	2	20	14	
20416	75.00	Iron Plate with Lift Cover...	2	20	17	
20417	65.00	*Iron Plate.....	2	20	8	

\*Without lift cover.

### 4-Wire Cord Connectors

With Insulated Cord Grips



No. 21415, Cap



No. 21414, Connector Body



Exposed View Showing Rubber Insulating Cord-Grip Bushing

Hole in rubber bushing will accommodate cords from .360 to .484 inches in diameter.

Regularly equipped with 1/2-inch thick sponge rubber discs located within neck of steel casings and a specially designed rubber cord-grip bushing.

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
21414	\$485.00	4-Wire Connector Body Only.	2	20	20	
21415	325.00	4-Wire Cap Only.....	2	20	14	

## Hubbell Bakelite Convenience Outlets

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

### Duplex—Top Wired, Double Binding Screws

Supporting screw holes are spaced 3 3/8 inches on centers.

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
7625	\$38.38	Narrow Ears.	10	100	30	
7626	38.38	Wide Ears....	10	100	30	



No. 7626

### Duplex—Side Wired, Double Binding Screws

Supporting screw holes are spaced 3 3/8 inches on centers.

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
9575	\$29.00	Narrow Ears.	10	100	26	
9595	29.00	Wide Ears....	10	100	27	



No. 9575

### Single—Side Wired

Supporting screwholes spaced 3 3/8 inches on centers.

The face of these receptacles is ornamental and harmonizes with all types of face plates. Self-locating slots facilitate the insertion of plug caps.

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
7550	\$22.00	Narrow Ears.	10	100	21	
7590	22.00	Wide Ears....	10	100	21	



No. 7550

Regularly furnished in brown bakelite, but may be had in black, at the same price.

## Acorn Duplex Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

### Duplex, Flush

Cat. No.	Per 100	Description	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
9990	\$12.64	Bakelite.....	10	100	15	
9990-I	25.38	Ivoryine.....	10	50	10	



No. 9990

### Duplex

With Outlet Box Covers, Bakelite

Constructed of Bakelite and equipped with cadmium plated steel covers for mounting directly to outlet boxes. Black japanned covers furnished special without extra cost.

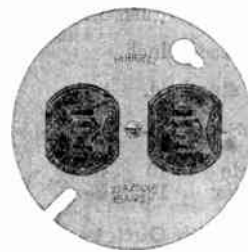
Large binding screws, located for side wiring. Has parallel slots only.

### With 3/4-Inch Cover

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
9994	\$20.00	10	50	15	

### With 4-Inch Cover

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
9995	\$22.10	10	50	21	



No. 9994

## H & H Round Convenience Outlets

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Has black japanned cover and is side wired.

Cat. No.	Per 100	Desc.	Cover In.	Car- ton	Std. Pkg.	Wt., Std.	Lbs. Pkg.
7006	\$15.56	Single	3 1/4	25	100	40	
7007	30.00	Single	4	5	50	25	
7049	36.00	Duplex	3 1/4	10	50	25	
7008	37.00	Duplex	4	5	50	27	



No. 7007

**Hubbell Convenience Outlets**

10 Amperes, 250 Volts;  
15 Amperes, 125 Volts

**Round with Solid Brass Plates  
Porcelain**

Brush brass finish.

**With 2 1/4-Inch Bevel Edge Plates**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6282	\$103.02	10	50	15

**With 3 3/8-Inch Bevel Edge Plates**

6283	\$115.14	10	50	24
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**Bakelite Face**

Standard finish of covers is cadmium plate. Black japan finish may be had on special order at no advance.

**Single 3/4-In. Round Steel Covers**

7135	\$29.00	10	100	40
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**Single 4-In. Round Steel Covers**

7136	\$30.00	5	50	25
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**Duplex 3/4-In. Round Steel Covers**

7260	\$36.00	5	50	28
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**Duplex 4-In. Round Steel Covers**

7137	\$37.00	5	50	27
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No. 6282



No. 6283



No. 7135



No. 7260

**Hubbell Round Flush Receptacles**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

**Bakelite**

Diameter of body is 1 1/16 inches. Screw holes are spaced 1 1/4 inches on centers, tapped for 8x32 screws.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
7331	\$26.26	10	50	8



**Porcelain—Polarized**

Diameter of body, 1 1/16 inches. Screw holes 1 3/8 inches on centers. Screw holes tapped for 8x32 screws.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
10108	\$40.00	Polarized	10	30	5



**Hubbell Porcelain Radio Outlet Recep-tacles and Plates**

Standard finish of plates is brush brass.

Depth of receptacle base, 1 inch.

Screw hole spacings standard.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2139	\$70.70	Single	10	30	9
2145	98.98	Duplex	10	30	9



No. 2139

**Plates for No. 2139 Single Radio Outlets**

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2137	\$13.14	Single Brush Brass, .040"...	10	30	10
2138	26.26	2-Gang Brush Brass, .040"...	5	15	9
2141	25.46	Single Brush Brass, .060"...	10	30	11
2142	16.16	Single Sand Blast Bakelite...	10	30	4
2143	16.16	Single Ribbed Bakelite....	10	30	4

**Plates for No. 2145 Duplex Radio Outlets**

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2146	\$19.80	Single Brush Brass, .040"...	10	30	10
2147	26.44	2-Gang Brush Brass, .040"...	5	15	9
2149	25.46	Single Brush Brass, .060"...	10	30	11

**Hubbell Single Convenience Outlets and Switches**



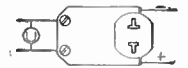
No. 8891

Fitting single gang boxes, these devices afford an opportunity to provide an extra convenience outlet wherever a switch is installed. Operating handles and receptacle faces are made of brown bakelite.

Ratings given below are for switches only. Receptacle rating in all cases is 10 amperes, 250 volts; 15 amperes, 125 volts.

Wiring diagrams above show method of installing to provide variation of control.

(WIRING DIAGRAMS



RECEPTACLE ALWAYS ON, SWITCH CONTROLS LIGHTS ONLY



SWITCH CONTROLS RECEPTACLE & LIGHT

**With Single Pole Switches**

10 Amperes, 250 Volts

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
8885	\$175.74	With .060" Brass Plate....	2	10	8
8886	153.92	Without Plate.....	2	10	4
8891	175.74	With No. 8895 Plate.....	2	10	8

**With Double Pole Switches**

10 Amperes, 250 Volts

8887	\$175.74	With .060" Brass Plate....	2	10	8
8888	153.92	Without Plate.....	2	10	4
8892	175.74	With No. 8895 Plate.....	2	10	8

20 Amperes, 250 Volts

8889	\$187.86	With .060" Brass Plate....	2	10	8
8890	166.04	Without Plate.....	2	10	4
8893	187.86	With No. 8895 Plate.....	2	10	8

**Separate Plates**

8894	\$21.82	.060" Brush Brass Plate....	2	10	4
8895	21.82	Sand Blast Bakelite Plate..	2	10	3

**Hubbell Convenience Outlets and Pilot Lights**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

The combining of Convenience Outlet and Pilot Light provides an automatic signal to warn of current left on in electric irons and other appliances having heating units.

Desirable for use in kitchens, breakfast rooms, laundries, etc.



No. 7711

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7712	\$123.62	Without Plate.....	2	10	12
7711	181.80	With No. 7713 Plate.....	2	10	15
7728	181.80	With No. 7729 Plate.....	2	10	13
7713	58.18	.060" Brass Plate.....	2	10	4
7729	58.18	Ornamental Bakelite Plate..	2	10	3

**Hubbell Switch and Bull's Eye Combinations**

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

**Single Pole Switch with Pilot Terminal**

The warning light, which is connected in multiple with the switch circuit, shows when the current is on. Recommended for use wherever a warning light is desirable to indicate that the lights are on.

Ruby is the standard color for bull's eyes but other colors can be furnished.



No. 7739

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7739	\$282.80	With .060" Brass Plate....	2	10	12
7759	282.80	With Ornamental Border, Bakelite Plate.....	2	10	12



## Hubbell Porcelain Wall Receptacles

10 Amp., 250 V.; 15 Amp., 125 V.

### Concealed

Screws, 1 $\frac{1}{32}$ -inch centers.  
With double T slots.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5617	\$40.00	10	50	18

### Cleat

Screws, 1 $\frac{1}{32}$ -inch centers.  
With double T slots.

5618	\$40.00	10	50	20
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### Moulding

Screws, 1 $\frac{1}{8}$ -inch centers.  
With double T slots.

5619	\$40.00	10	50	18
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### Fielding

Screws, 2 $\frac{1}{16}$ -inch centers.  
With double T slots.

5620	\$46.66	10	50	16
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### Conduit Box

Screws,  $\frac{5}{8}$ -inch centers.  
With double T slots.

5624	\$40.00	10	50	13
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### Outlet Box with Exposed Terminals

With double T slots.

7027	\$40.00	10	50	16
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## No. 6293 Hubbell Composition Weather-Proof Receptacles

10 Amperes, 250 Volts  
15 Amperes, 125 Volts

With double T slots.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6293	\$84.84	10	30	10

## No. 7218 Hubbell Standard Fixture Receptacle Bodies

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Interchangeable with standard brass shell socket caps and bases.

With double T slots.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7218	\$33.42	10	20	3

## No. 6712 Hubbell Non-Separable Attachment Plugs

### Composition—Bayonet Base

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6712	\$24.24	25	100	9

## Hubbell Separable Attachment Plugs

660 Watts, 250 Volts

### Pony Size—Parallel Blades With Composition Cap



No. 7000

Regularly furnished in solid black composition and with nickel-plated screw shells, but may be had in solid brown composition at same price.

Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
7000	\$7.10	Plug, Oval Cord Hole..	$\frac{3}{8} \times \frac{9}{32}$	25	500	58
7001	3.80	Body Only.....	.....	25	500	40
7002	3.30	Cap Only, Oval Cord Hole.....	$\frac{3}{8} \times \frac{9}{32}$	25	500	30
7066	3.30	Cap Only, Round Cord Hole.....	$\frac{5}{16}$	25	500	30
7068	3.30	Cap Only, Round Cord Hole.....	$1\frac{1}{32}$	25	500	30

## Hubbell Separable Attachment Plugs

660 Watts, 250 Volts

### Pony Size—With Parallel Blades Modernistic Design—All Bakelite

This Plug consists of the No. 9010 bakelite cap, and No. 9013 bakelite base.

Brown is standard color, but black may be had on special order at no advance in price.



Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
9012	\$7.10	Plug, Complete.....	$\frac{3}{8} \times \frac{9}{32}$	25	500	41
9013	3.80	Body Only.....	.....	25	500	22
9010	3.30	Cap Only.....	$\frac{3}{8} \times \frac{9}{32}$	25	500	20

## Hubbell Separable Attachment Plugs

660 Watts, 250 Volts

### Standard Size—Parallel Blades With Composition or Brass Covered Caps

Nickel-plated screw shells are standard.



No. 5915

Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5915	\$19.08	Plug, Complete.....	$1\frac{1}{32}$	10	250	35
5917	10.50	Body Only.....	.....	10	250	18
5964	8.58	Comp. Cap, Only.....	$1\frac{1}{32}$	10	250	20
5965	33.34	Brass Cov. Cap, Only.....	$1\frac{1}{32}$	10	250	24
6708	8.58	Comp. Cap, Only.....	$\frac{5}{16}$	10	250	20

## Hubbell Composition Separable Attachment Plugs

### Large Size—Tandem Blades

660 Watts, 250 Volts

With double T slots.

Nickel-plated screw shells are standard on all attachment plugs.



No. 5467



No. 5612

Cat. No.	Description	Cord Hole, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Per 100
5467	Plug, Complete.....	$1\frac{1}{32}$	10	100	64	\$51.00
5420	Cap.....	$1\frac{1}{32}$	10	100	9	17.50
5612	Plug Body.....	.....	10	100	45	33.50



**Hubbell Parallel Blade Plug Caps**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Composition—Pony Size					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7002	\$3.30	$\frac{3}{8} \times \frac{3}{32}$	25	500	30
7066	3.30	$\frac{5}{16}$	25	500	30
7068	3.30	$\frac{13}{32}$	25	500	30



Bakelite—Pony Modernistic Design					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9010	\$3.30	$\frac{3}{8} \times \frac{3}{32}$	25	500	20



Bakelite—Pony Size—Finger Grip					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9014	\$4.60	$\frac{5}{16}$	10	100	6



Bakelite—Pony					
Supplied in either brown or black Bakelite at same prices. Brown will be shipped unless otherwise specified.					
9016	\$3.30	$\frac{1}{4}$	25	500	20



Composition—Standard Size					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5964	\$8.58	$\frac{13}{32}$	10	250	20
6708	8.58	$\frac{5}{16}$	10	250	20



Brass Covered Composition Standard Size					
Standard finish is brush brass.					
5965	\$33.34	$\frac{13}{32}$	10	250	23



Finger-Grip—All Rubber					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9972	\$10.00	$\frac{13}{32}$	25	100	8



Cord-Grip—All-Rubber					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9754	\$26.66	$\frac{9}{16}$	10	50	7
9756	26.66	$\frac{5}{8}$	10	50	7



Cord-Grip—Armored					
Composition cap, steel covered cadmium plated. Can be supplied in brush brass finish at \$5.50 per 100 extra list.					
7057	\$33.34	$\frac{9}{16}$	10	50	7



Composition—Multiple					
Provides T slots, into which may be plugged tandem or parallel blades of any other plug cap.					
6772	\$30.30	..	10	20	3

Composition—Series					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7772	\$30.30	..	10	20	3

**Hubbell Tandem Blade Plug Caps**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Composition—Heavy Duty					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5420	\$17.50	$\frac{13}{32}$	10	100	8



Brass Covered Porcelain—Heavy Duty					
Standard finish is brush brass.					
5421	\$33.34	$\frac{13}{32}$	10	100	11



Finger-Grip—Rubber					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9974	\$17.50	$\frac{13}{32}$	25	100	8



Composition—Steel Covered Finger-Grip					
Has one-inch extensions to facilitate insertion and removal from the receptacle. Curved lip prevents undue wear on the cord at the point where it enters the cap.					
10057	\$46.66	$\frac{13}{32}$	10	50	10



Brass Covered Composition—Heavy Duty With $\frac{3}{8}$ -Inch Threaded Nipple					
Standard finish is brush brass.					
6606	\$53.32	$\frac{13}{32}$	10	100	14



Cord-Grip—All-Rubber					
Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9752	\$26.66	$\frac{9}{16}$	10	50	7
9753	26.66	$\frac{5}{8}$	10	50	7



Cord-Grip—Armored					
Composition cap, steel covered cadmium plated. Can be supplied in brush brass finish at \$5.50 per 100 extra.					
7056	\$33.34	$\frac{9}{16}$	10	50	7
7183	33.34	$\frac{5}{8}$	10	50	8



Cord-Grip—Armored—Angle					
Composition, steel covered, cadmium. Adjustable clamp grips cord tightly, relieving strain from binding posts. Cord-grips take standard No. 14 wire.					
9076	\$53.32	..	10	50	9



Composition—Multiple					
Provides T slots, into which may be plugged tandem or parallel blades of any other plug cap.					
6771	\$33.34	..	10	20	3

## Hubbell Polarized Plug Caps

### Standard Size Parallel Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs.
*6764	\$8.58	13/32	10	250	20

\*Polarized—one wide and one narrow blade.

### Finger Grip—Parallel Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

9973	\$11.50	13/32	25	100	8
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### Cord-Grip—All Rubber Parallel Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

9755	\$26.66	9/16	10	50	7
9757	26.66	5/8	10	50	7

### Cord-Grip—Armored Parallel Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Composition cap, steel covered cadmium plated. Can be supplied in brush brass finish at \$5.50 per 100 extra.

Polarization is effected by one wide and one narrow blade.

7059	\$33.34	9/16	10	50	6
7185	33.34	5/8	10	50	8

### Cord-Grip—Rubber

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

9970	\$60.00	19/64 to 9/16	10	30	5
9971	60.00	5/8	10	30	5

20 Amperes, 250 Volts

9758	66.66	5/8	10	30	6
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### Cord-Grip

Composition cap, steel covered, cadmium plated.

The adjustable clamp grips the cord tightly, thus relieving the strain from the binding posts, and also prevents the outer cover of cord from unraveling.

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

7092	\$60.00	19/64 to 9/16	10	30	6
7241	60.00	5/8	10	30	6

29 Amperes, 250 Volts

7058	66.66	5/8	10	30	8
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### Cord-Grip—All Rubber Double T Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

9760	\$46.66	9/16	10	50	7
9762	46.66	5/8	10	50	7

### Cord-Grip—Armored Double T Blades

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Blades are a combination of tandem and parallel rived and key-locked to form a girder-like unit of unusual strength. Fits all double T slot receptacles. Steel covered, cadmium plated.

7286	\$53.32	9/16	10	30	5
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## Hubbell 2-Wire Cord Connectors

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

### Standard Size with Tandem Slots

With Brass Covered Strain Relief Caps

For 2-conductor cords, Nos. 16 and 18 standard, No. 18 Super Service and No. 18PS Duracord.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
6095	\$106.66	Body Only . . .	10	50	12
5700	73.32	Cap Only . . . .	10	50	10

### Small Size with Parallel Slots

Composition

Measures but 1 5/8 inches overall.

Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs.
*6180	\$21.58	Plug Complete.	13/32	10	50	7
6630	13.00	Polarized Body Only . . . . .	13/32	10	50	5
*6181	8.58	Cap Only . . . .	13/32	10	50	3
9181	8.58	Polarized Cap Only . . . . .	13/32	10	50	3

\*Non-polarized.

Polarized by providing a cap with one wide and one narrow blade which fits corresponding slots in body.

No. 6630 Bodies may be used with either polarized or non-polarized caps.

### Standard Size with Parallel Slots Composition

Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs.
6116	\$21.58	Plug Complete..	13/32	10	50	12
6118	13.00	Body Only . . . .	13/32	10	50	8
5964	8.58	Cap Only . . . . .	13/32	10	250	20

### Heavy Duty Size with Double T Slots

Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs.
5518	\$53.86	Plug Complete..	13/32	10	50	13
5574	36.36	Body Only . . . .	13/32	10	50	8
7080	36.36	Body Only . . . .	5/16	10	50	8
5420	17.50	Cap Only . . . . .	13/32	10	100	8

### Heavy Duty Size with Double T Slots Cord-Grip

Composition. Caps are steel covered, cadmium plated.

Cat. No.	Per 100	Description	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs.
7084	\$60.00	Body Only . . . .	9/16	10	50	11
7056	33.34	Cap Only . . . . .	9/16	10	50	7
7187	60.00	Body Only . . . .	5/8	10	50	11
7183	33.34	Cap Only . . . . .	5/8	10	50	7



**Hubbell Polarized 2-Wire Cord Connectors**



**Standard Size**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Cat. No.	Per 100	Description	Cord		Wt.	
			Hole Inches	Car-ton	Std. Pkg.	Std. Pkg.
6821	\$49.44	Plug Complete	13/32	10	50	10
6822	40.00	Body Only	13/32	10	50	8
6918	9.46	Cap Only	13/32	10	50	5

Nos. 6821



**Large Size—Brass Covered Porcelain Cap**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

6278	\$73.32	Body Only	13/32	10	30	9
5567	66.66	Cap Only	13/32	10	30	6

Nos. 6278, 5567

**Large Size—Brass Covered Composition Cap**

20 Amperes, 250 Volts

6717	\$93.32	Body Only	1/2	10	30	10
6156	66.66	Cap Only	1/2	10	30	5

**Hubbell 2-Wire Surface Motor Attachment Plugs**



10 Amperes, 250 Volts; 15 Amperes, 125 Volts

**Composition**

No. 7021 is furnished with one wide and one narrow blade to effect polarization.

Cord hole size of No. 6630 body, 13/32-inch. No. 6630 body may be used with polarized or non-polarized bases.

Nos. 7021-6630



**Small Size with Parallel Slots**

Cat. No.	Per 100	Description	Cord		Wt.	
			Hole Inches	Car-ton	Std. Pkg.	Std. Pkg.
7021	\$13.34	Pol. Base Only	13/32	10	50	3
7024	13.34	Base Only, Non-Pol.	13/32	10	50	3
6630	13.00	Body Only	13/32	10	50	5

Nos. 6118-6823



**Standard Size with Parallel Slots**

6118	\$13.00	Body Only	13/32	10	50	8
6823	15.76	Base Only	13/32	10	50	4

Nos. 5574-5896



**Heavy Duty—Double T Slots**

5574	\$36.36	Body Only	13/32	10	50	8
7080	36.36	Body Only	5/16	10	50	8
5896	17.34	Base Only	13/32	10	50	4

**Standard Size—Polarized**

6822	\$40.00	Body Only	13/32	10	50	8
7918	17.34	Base Only	13/32	10	50	6

Interchanges only with No. 6822 connector and No. 7330 motor plug.

Nos. 6822-7918

**Hubbell Motor Attachment Plugs**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



**Small Size**

Composition.

Measurement assembled is 1 5/8 inches in length and 1 1/2 inches in diameter at bottom of base.

Portion with contact blades is arranged with holding grooves for fitting into the apparatus.

Nos. 6630 and 6631



Cat. No.	Per 100	Description	Cord		Wt.	
			Hole Inches	Car-ton	Std. Pkg.	Std. Pkg.
6630	\$13.00	Body Only	13/32	10	50	5
6979	13.00	Body Only	5/16	10	50	5
6631	14.66	Base Only	...	10	50	3

**With Cord-Grips**



7257	\$55.56	Body Only	5/8	10	50	8
7259	55.56	Body Only	19/64	10	50	8
6631	14.66	Base Only	...	10	50	3

Nos. 7257 and 6631

Nos. 7257 and 7259 bodies may also be used with catalogue No. 6808 motor plug base.

**Hubbell Flush Motor Plugs**

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

**Small Size—Parallel Blades**

Base is composition with metal casing. Composition body. Supporting screw holes are spaced 1 3/4 inches on centers. Diameter of brass shell, 1 3/8 inches.

**Non-Polarized**

Cat. No.	Per 100	Description	Cord		Wt.	
			Hole Inches	Car-ton	Std. Pkg.	Std. Pkg.
6808	\$36.36	Base Only, in Casing	13/32	10	50	7
6630	13.00	Body Only	13/32	10	50	5
9808	\$36.36	Base Only, in Casing, One Wide, One Narrow Blade	13/32	10	50	7
6630	13.00	Body Only	13/32	10	50	5

Nos. 6808 or 9808



No. 6630



Nos. 7257-9808

**Small Size—Parallel Blades—Cord-Grip Polarized**

Base is composition in metal casing. Body is composition, steel covered.

Supporting screw holes, 1 3/4 inches on centers. Diameter of shell, 1 3/8 inches.

Cat. No.	Per 100	Description	Cord		Wt.	
			Hole Inches	Car-ton	Std. Pkg.	Std. Pkg.
7257	\$55.56	Body Only	5/8	10	50	8
7259	55.56	Body Only	19/64	10	50	8
9808	36.36	Base Only, in Casing	13/32	10	50	7

**Standard Size, Tandem Blades Heavy Duty**

Base is composition with metal casing. Composition body.

Supporting screw holes of base are spaced 2 1/6 inches on centers for No. 8 screws. Diameter of brass shell, 1 5/8 inches.

Cat. No.	Per 100	Description	Cord		Wt.	
			Hole Inches	Car-ton	Std. Pkg.	Std. Pkg.
4896	\$46.66	Base Only	13/32	10	50	10
5574	36.36	Body Only	13/32	10	50	8
7080	36.36	Body Only	5/16	10	50	8



Nos. 5574-4896

**Standard Size—Polarized**

Supporting screw holes spaced 2 1/6 inches on centers for No. 8 screws. Diameter of brass shell is 1 5/8 inches.

Polarized blades are arranged to take No. 6822 Body.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Pkg.	Wt.
						Lbs.
7330	\$46.66	Base Only in Casing	10	50	10	



No. 7330

## Hubbell Double T Blade Plug Caps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 9759

### Cord-Grip—All-Rubber

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
9759	\$46.66	9/16	10	50	7
9761	46.66	5/8	10	50	7

### Cord-Grip—Armored



No. 7162

Blades are a combination of tandem and parallel riveted and key-locked to form a girder-like unit of unusual strength. Fits all double T slot receptacles.

Steel covered, cadmium-plated.

Cat. No.	Per 100	Cord Hole	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
7162	\$53.32	9/16	10	30	5

## Hubbell 2 to 3-Wire Composition Plug Adapters

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



No. 7052

These adapters have two blades for insertion in any standard convenience outlet while other end is equipped with three slots to take standard 10-ampere 3-wire caps as listed in opposite column.



No. 9052-L

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.
7052	\$53.32	Tandem Blades..	10	30	6	
9052	53.32	Parallel Blades..	10	30	6	
7052-L	58.00	Tandem Blades with Ground Wire.....	10	30	7	
9052-L	58.00	Parallel Blades with Ground Wire.....	10	30	7	

## Hubbell Polarized Porcelain Flush Receptacles With 3/4 and 4-Inch Round Steel Box Covers Attached

\*These receptacles will readily fit 3/4-inch outlet boxes when only one box connector is used. When two or more box connectors are needed the receptacles with 4-inch covers are required.

Cadmium finish outlet box covers are standard. Black japan covers can be furnished on special order at no advance in price.



No. 7270

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.
*7270	\$60.00	No. 5566 Porcelain Receptacle with 3/4-Inch Cover.....	10	30	18	
7271	66.66	No. 5566 Porcelain Receptacle with 4-Inch Cover.....	5	30	20	
*7272	\$106.66	No. 5552 Porcelain Receptacle with 3/4-Inch Cover.....	10	30	18	
7273	113.32	No. 5552 Porcelain Receptacle with 4-Inch Cover.....	5	30	20	



## Hubbell Polarized Caps



No. 5567



No. 6730



No. 5553, 6156



No. 6720

Standard finish on brass-covered caps is brush brass.

Cat. No.	Description	Cord Hole, In.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Per 100
5567	Porcelain, Brass Covered..	1 1/2	10	30	5	\$66.66
6730	Composition.....	1 1/2	10	30	4	33.34
20 Amperes, 250 Volts						
5553	Porcelain, Brass Covered..	1 1/2	10	30	6	\$66.66
6156	Comp. Brass Covered.....	1 1/2	10	30	5	66.66
6720	Composition.....	1 1/2	10	30	4	40.00

## Hubbell Polarized Porcelain Wall Receptacles

### Concealed Base

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Screw holes spaced 1 1/2 inches.



Nos. 5885 or 5621

Cat. No.	Per 100	Car-ton	Std. Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.
5885	\$53.32	10	30	11	

20 Amperes, 250 Volts

Screw holes spaced 1 1/8 inches.

5621	\$66.66	10	30	14	
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### Cleat Base

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Screw holes spaced 1 1/2 inches.



Nos. 5886 or 5622

5886	\$53.32	10	30	14	
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20 Amperes, 250 Volts

Screw holes spaced 1 5/8 inches.

5622	\$66.66	10	30	18	
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### Moulding Base

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Screw holes spaced 1 1/8 inches.



Nos. 5887 or 5623

5887	\$60.00	10	30	12	
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20 Amperes, 250 Volts

Screw holes spaced 1 1/2 inches.

5623	\$73.32	10	30	17	
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### Conduit Box Base

20 Amperes, 250 Volts

Screw holes spaced 5/8-inch.



No. 5757

5757	\$66.66	10	30	13	
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## Hubbell 2-Wire Cord Connectors Polarized, Cord-Grip

Composition. Caps are steel covered, cadmium plated.

### With 9/16-Inch Cord Hole

10 Amp., 250 Volts; 15 Amp., 125 Volts



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.
7091	\$86.66	Body Only....	10	30	8	
7092	60.00	Cap Only.....	10	30	6	

### With 5/8-Inch Cord Hole

10 Amp., 250 Volts; 15 Amp., 125 Volts

7240	\$86.66	Body Only....	10	30	8	
7241	60.00	Cap Only.....	10	30	6	
20 Amp., 250 Volts						
7086	\$100.00	Body Only....	10	30	10	
7058	66.66	Cap Only.....	10	30	8	

**Hubbell Polarized Porcelain Flush Receptacles**

Will fit standard single convenience outlet plates.

Supporting screw holes spaced  $3\frac{3}{32}$  inches.

**10 Amperes, 250 Volts  
15 Amperes, 125 Volts**

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5566	\$53.32	Black Porcelain	10	30	12

**20 Amperes, 250 Volts**

5552	100.00	Black Porcelain	10	30	12
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**Single Gang Size  
30 Amperes, 250 Volts**



No. 7436



No. 7437



No. 7438

No. 7438 receptacle is  $2\frac{1}{2}$  inches high by  $1\frac{1}{32}$  inches wide by  $1\frac{1}{8}$  inches deep, permitting its being installed in a single gang box. The face diameter of No. 7438 is larger than standard and requires the special plate No. 7439. The outside diameter of the cap is such that it will not fit when used in a two-gang installation of 7438 receptacles.

These devices are comparable to Cat. Nos. 7070, 7071, 7072, but are not interchangeable with them. Polarization is effected by means of one wide and one narrow blade and corresponding lugs.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7436	\$150.00	Cord Grip Cap, $2\frac{1}{32}$ -Inch Cord Hole	5	30	14
7437	70.00	Composition Cap, $2\frac{1}{32}$ -Inch Cord Hole	5	30	12
7438	132.20	Composition Face Porcelain Receptacle	10	30	16
7439	21.78	.040-Inch Brush Brass Plate for No. 7438	10	30	6

**Two-Gang Size  
30 Amperes, 250 Volts  
Polarized**



This receptacle is made throughout of a special black porcelain. Supporting lugs have mounting holes spaced to fit standard 2-gang outlet boxes 2 inches deep or over.

No. 7127 cap is black composition, steel covered with adjustable cord grip. Binding screws are extra large and protected by an insulating disc which fits over the blades, completely enclosing in the wiring terminals. Contact blades are of heavy gauge copper.

No. 7072 plate is made of .060-inch brass of standard 2-gang size,  $4\frac{1}{2} \times 4\frac{9}{16}$  inches. Standard finish is brush brass.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7070	\$299.98	Black Porcelain Receptacle	1	5	8
7071	146.66	Black Porcelain Cap, $2\frac{3}{32}$ -Inch Cord Hole	1	5	3
*7127	179.98	Metal Covered Cord Grip Cap	1	5	4
7072	108.88	.060" Brass Plate	1	5	2
†7116	124.44	.100" Brass Plate, $5\frac{1}{2}$ Inches Square	1	5	3

\*Cord hole size,  $\frac{5}{8}$  to 1 inch.

†Extra large plate for covering irregularities in plaster.

**Hubbell 3-Wire Polarized Receptacles**

**Single, Top Wired**

No. 6051 regularly furnished in black composition.

No. 7189 same design as No. 6051, but has ground shunt from one terminal to the back supporting strap.

No. 9051 can be supplied grounded by suffixing letter G to catalogue number.

**Composition**

**10 Amperes, 250 Volts; 15 Amperes, 125 Volts**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6051	\$113.32	10	50	25
7189	113.32	10	50	25

**Porcelain**

**10 Amperes, 250 Volts; 15 Amperes, 125 Volts**

9051	\$113.32	10	50	25
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**Porcelain**

**20 Amperes, 250 Volts**

Will fit standard single convenience outlet plates. Supporting screw holes spaced  $3\frac{3}{32}$  inches on centers.

If desired grounded suffix letter G to catalogue number.

6810	\$126.66	10	30	15
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No. 6051



No. 6810



No. 7051

**Duplex, Side Wired**

Brown composition is standard but black composition will be supplied on special order at the same price. Supporting screw holes are spaced  $3\frac{3}{32}$  inches. No. 7051 takes standard duplex receptacle flush plates. When desired with ground shunt to bridge suffix letter G to catalogue number.

**10 Amperes, 250 Volts**

**15 Amperes, 125 Volts**

7051	\$166.66	10	30	11
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**With 4-Inch Round Steel Box Cover**

Cadmium finished covers are standard. Black japanned furnished at same price. Brown composition standard. Black furnished on special order at same price.

When desired with ground shunt suffix letter G to catalogue number.

**10 Amperes, 250 Volts**

**15 Amperes, 125 Volts**

**Single**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7275	\$126.66	5	50	30

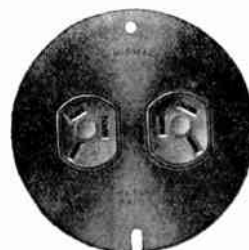
**Duplex**

7208	\$175.54	5	30	17
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**20 Amperes, 250 Volts**

**Single**

7277	\$139.98	5	30	24
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No. 7208



## Hubbell 3-Wire Polarized Plug Caps



### Composition

10 Amperes, 250 Volts  
15 Amperes, 125 Volts

Nos. 6149, 7252

Cat. No.	Per 100	Cord Hole Inches	Car-ton
6149	\$33.34	7/16	10
7252	33.34	1/4	10
7198	\$53.32	20 Amperes, 250 Volts 5/8	10



No. 7198

Std. Pkg.	Wt., Lbs. Std. Pkg.
50	6
50	6
30	6



### Brass Covered

10 Amperes, 250 Volts  
15 Amperes, 125 Volts

Brush brass is standard finish for No. 6058.

No. 6150

Cat. No.	Per 100	Cord Hole Inches	Car-ton
6150	\$46.66	7/16	10

### Composition

10 Amperes, 250 Volts

Cat. No.	Per 100	Cord Hole Inches	Car-ton
6058	\$80.00	1/2	10

If desired grounded suffix letter G to catalogue number.



No. 6058

Std. Pkg.	Wt., Lbs. Std. Pkg.
50	7
30	6



### Finger-Grip

10 Amperes, 250 Volts  
15 Amperes, 125 Volts

Metal Covered Finger Grip Cap has 1 inch extension to facilitate insertion and removal from the receptacle. Cadmium finish.

No. 10056

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
10056	\$66.66	1 3/8	10	50	10

If desired grounded suffix letter G to catalogue number.



No. 9975

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9975	\$33.34	7/16	10	50	9



### Cord-Grip

10 Amperes, 250 Volts  
15 Amperes, 125 Volts

Composition cap, steel covered, cadmium plated.

No. 7055

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7055	\$60.00	9/16	10	50	7
7309	60.00	5/8	10	50	7

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7089	\$86.66	20 Amperes, 250 Volts 5/8	10	20	6

If desired grounded suffix letter G to catalogue number.



No. 7089

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7089	\$86.66	20 Amperes, 250 Volts 5/8	10	20	6



### Cord-Grip—Rubber

10 Amperes, 250 Volts  
15 Amperes, 125 Volts

No. 9750

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9750	\$53.32	9/16	10	50	8
9751	53.32	5/8	10	50	8

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9977	\$80.00	20 Amperes, 250 Volts 5/8	10	20	5

If desired grounded suffix letter G to catalogue number.



No. 9977

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9977	\$80.00	20 Amperes, 250 Volts 5/8	10	20	5

## Hubbell 3-Wire Polarized Wall Receptacles

Screw holes 1 3/4 inches on centers. Outside diameter of base, 2 1/2 inches.

10 Amp., 250 Volts; 15 Amp., 125 Volts

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6047	\$66.66	Concealed	10	50	24
6059	\$86.66	20 Amperes, 250 Volts Concealed	10	30	16



No. 6059

## Hubbell 3-Wire Polarized Composition Round Flush Receptacles

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Screw holes in mounting straps, 1 3/4 inches on centers, tapped for 8x32 screw holes. A round hole 1 1/2 inches in diameter is necessary to accommodate the receptacles.

No. 7214 is equipped with two binding screws only, the third terminal being grounded direct to the back of the mounting strap by a metal shunt.

No. 7215 is equipped in the usual way with three binding screws for regular three-wire work, and is not grounded to the mounting strap.



No. 7214

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7214	\$86.66	Grounded	10	30	5
7215	86.66	Not Grounded	10	30	7

## Hubbell 3-Wire Polarized Surface Receptacles Porcelain

50 Amperes, 125 Volts  
40 Amperes, 250 Volts

This receptacle is of the concealed type and fits General Electric SP72C102 cover for SP72151 or SP72171, 4 1/16-inch outlet box with 1/2, 3/4, 1, and 1 1/4 inch knockouts. No. 7513 cap and Nos. 9304 and 9305 caps with ground contacts removed may be used with this receptacle; may also be utilized as a 30-ampere receptacle by the use of No. 7113 cap. Mounting screw holes spaced 2 3/8 inches on centers.



No. 9306

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9306	\$98.98	5	25	30

### Composition

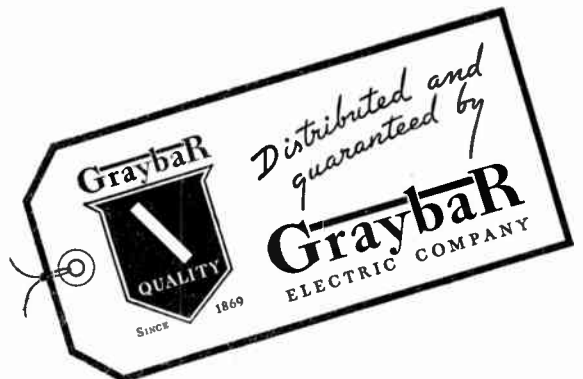
30 Amperes, 250 Volts

This receptacle is similar to No. 9306 except that it is composition. Nos. 7113, 7513, 9304 and 9305 caps may be used with this receptacle. It is necessary to remove the ground contacts from Nos. 9304 and 9305.



No. 9307

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9307	\$155.54	5	25	20



### Hubbell 3-Wire Polarized Cord Connectors

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Composition.



Cat. No.	Per 100	Description	Size Cord Hole In.	Car-ton	Std. Pkg.	Lbs. Std. Pkg.
6409	\$66.66	Body Only.....	7/16	10	50	11
6149	33.34	Cap Only.....	7/16	10	50	6
7252	33.34	Cap Only.....	1/4	10	50	6

### Hubbell 4-Wire Polarized Cord-Grip Cord Connectors

20 Amperes, 250 Volts

The Cord-Grip accommodates 2 3/32-inch diameter cords.

Suffix letter G to Catalogue Number 7351 when desired with ground shunt to metal cover from ground contact.



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7351	\$179.98	Body Only	10	20	10
7251	113.32	Cap Only..	10	20	6
9251	125.32	Grounded Cap Only	10	20	6

### Hubbell 3-Wire Polarized Cord Connectors Cord-Grip

Composition. Caps are steel covered, cadmium plated.

#### 3/16-Inch Cord Hole

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7082	\$93.32	Body Only.....	10	50	12
7055	60.00	Cap Only.....	10	50	7

#### 5/16-Inch Cord Hole

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7308	\$93.32	Body Only.....	10	50	12
7309	60.00	Cap Only.....	10	50	8

#### 20 Amperes, 250 Volts

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7088	\$146.66	Body Only.....	10	20	8
7089	86.66	Cap Only.....	10	20	6

### Hubbell 3-Wire Polarized Surface Type Motor Plugs

10 Amperes, 250 Volts; 15 Amperes, 125 Volts

Composition. Diameter of base, 1 19/32 inches.

#### Body Only

Cat. No.	Per 100	Cord Hole Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6409	\$66.66	7/16	10	50	11



#### Cord-Grip Body Only

7082	\$93.32	7/16	10	50	12
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If desired grounded, suffix letter G to catalogue number.

#### Surface Base Only

7810	\$33.34		10	50	9
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Mounting screw holes spaced 1 3/8 inches on centers.

#### Flush Base Only

7808	\$73.32		10	50	7
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If desired grounded, suffix letter G to catalogue number.

Mounting screw holes spaced 2 1/8 inches on centers. Diameter of base, 1 1/16 inches.

Nos. 7810 and 7808 take connector bodies Nos. 6409 and 7082 listed above.

### Hubbell 4-Wire Polarized Receptacles and Caps

Flush—Composition

20 Amperes, 250 Volts

Standard single convenience outlet plates are used on the No. 7250 receptacle.

Gang plates to accommodate this receptacle must be of special size. Submit specifications for recommendation.

If No. 7250 is desired grounded suffix letter G to catalogue number.

No. 7251 is a straight 4-wire cap. No. 9251 has a shunt from the ground blade to the metal cover for grounding to metal sheathed 3-wire cable.



No. 7250

The cord-grip will accommodate 2 3/32 inch diameter cord.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7250	\$146.66	Receptacle.....	10	20	8
7251	113.32	Cap.....	10	20	6
9251	125.32	Grounded Cap.....	10	20	6

### With 4-Inch Steel Box Covers

Cadmium finish outlet box covers are standard.

Black japanned covers can be furnished on special order at no advance in price.

If desired grounded suffix letter G to catalogue number.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7279	\$159.98	5	20	13

### Hubbell 3-Wire Polarized Cord Connectors

Cord-Grip

30 Amperes, 250 Volts

Composition. The cap is steel covered, cadmium plated.

The adjustable Cord-Grip accommodates cords from 5/8 to 1 inch in diameter.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7283	\$363.60	Body Only.....	1	5	7
7113	151.50	Cap Only.....	1	5	5



## Hubbell 3-Wire Range Receptacle Rubber Cord Sets and Fittings

50 Amperes, 125 Volts; 40 Amperes, 250 Volts



No. 7910



Nos. 7911-7912



No. 7913

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7910	\$181.80	Surface Receptacle.....	2	10	15
7911	60.60	Coupling for 3 No. 8 Wires	2	10	4
7912	70.70	Coupling for 3 No. 6 Wires	2	10	4
7913	40.40	Ground Strap for No. 7910	2	10	2



Nos. 7914, 7915, 7916

7914	323.20	38-Inch Rubber Cord Set, 2 No. 6 and 1 No. 8 Wires	2	10	15
*7915	272.70	38-Inch Rubber Cord Set, 2 No. 8 and 1 No. 10 Wires	2	10	15
7916	383.80	38-Inch Rubber Cord Set, 3 No. 6 Wires.....	2	10	15

\*Rated 35 amperes, 125 or 250 volts.

No. 7910 receptacle has an opening for 3/4-inch conduit and a knockout for 1-inch conduit.

No. 7913 ground strap is used on No. 7910 with metallic systems when a separate ground is provided.

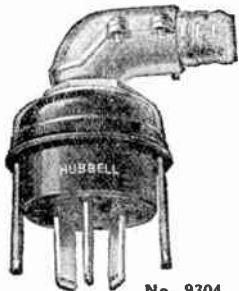
Nos. 7911 and 7912 couplings hold and protect non-metallic cable where cable passes through floor.

## Hubbell Polarized 3-Wire Composition Caps With Grounding Clips—Heavy Duty

50 Amperes, 125 Volts  
40 Amperes, 250 Volts

This cap is equipped with cord grips to accommodate BX cables, cords, or flexible conduit having outside diameters from .950 to 1.125 inches inclusive.

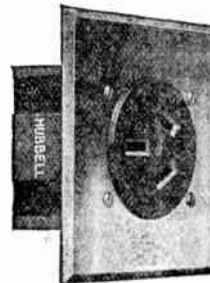
May be used with Nos. 7112, 9306 and 9307 receptacles, and No. 7910 range receptacle.



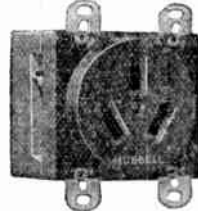
No. 9304

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9304	\$212.10	Angle Cap.....	1	10	17
9305	197.96	Straight Cap.....	1	10	15

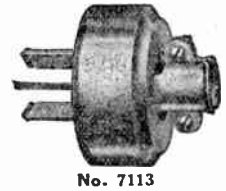
## Hubbell 3-Wire Polarized Porcelain Flush Receptacles



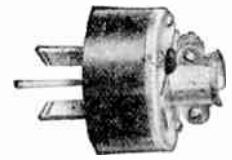
Nos. 7112, 7114



No. 7512



No. 7113



No. 7513

This receptacle is of rugged construction, made throughout of a special black porcelain.

The supporting lugs have mounting holes spaced to fit a standard 2-gang box 2 inches deep or over as listed below.

No. 7113 is composition, steel covered, cadmium-plated with adjustable cord-grip accommodating cords up to 2 3/8-inch in diameter. No. 7513 is similar to 7113 except that it is not completely covered and has soldering lugs instead of binding screws.

If desired grounded, suffix letter G to catalogue number.

### With Binding Screws 30 Amperes, 250 Volts

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7112	\$436.32	Porcelain Receptacle.....	1	5	8
7113	151.50	Cord-Grip Cap.....	1	5	4
7514	151.50	Grounded Cord-Grip Cap.....	1	5	4
*7114	98.98	.060" Brass Plate.....	1	5	2
†7115	113.12	.100" Solid Brass Plate...	1	5	3

### With Soldering Terminals 60 Amperes, 250 Volts

7512	\$505.00	Porcelain Receptacle.....	1	5	8
7513	181.80	Cord-Grip Cap.....	1	5	4
*7114	98.98	.060" Brass Plate.....	1	5	2
†7115	113.12	.100" Solid Brass Plate...	1	5	3

\*No. 7114 is of standard 2-gang size, 4 1/2 x 4 3/8 inch. Standard finish, brush brass. The advance for special finish is figured as a 2-gang plate.

†The plate No. 7115 is 5 1/2 inches square to allow an overhang over the box to cover up irregularities in plaster work.

### Suitable Fittings for Receptacles Nos. 7112, and 7512

Crouse-Hinds Co. —2-gang FS series Condulets. Covers for use with 7070 on these condulets are S-612—surface type. SS-612—flush type. Covers for use with 7112 or 7512 on these condulets are S-622—surface type and SS-622—flush type.

National Metal Mldg. Co. —24K, 24KK and 24KL Covers on 2400, 2401, 2402, 2403, 2404, 2405 and 2410 Boxes. 25K Cover on 2500, 2501, 2514, 2515 and 2590 Boxes. 30C2 Cover on 3002 and 3012 Boxes. 4230 and 4231 Boxes.

Steel City Elec. Co. —2GC Cover on 2G Box and Cat. Nos. 52C17, 52C18, 52C19 on 51151 and 52151 Boxes, and 72C18 Cover on 72171 Box.

Thomas & Betts—32 (Box and Cover Complete).



**Hubbell 3-Wire Porcelain Flush Receptacles**

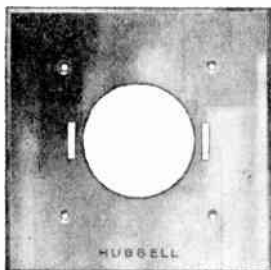
**With Plaster Box Covers, Polarized**  
60 Amperes, 125 Volts; 40 Amperes, 250 Volts



Fits standard boxes 4 1/8 in. square and 2 1/8 in. deep. The plaster box cover is of special construction to make possible the use of this receptacle with standard boxes.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9301	\$509.04	1	10	18

**Brass Plates for No. 9301 Flush Receptacle**



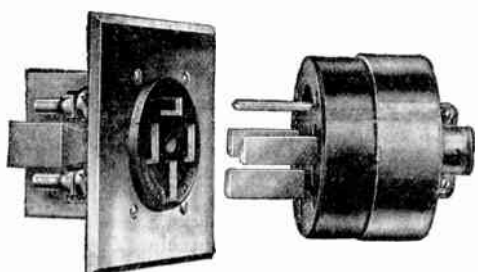
Standard finish on plates is brush brass.

These plates are 5 1/2 inches square to allow an over-hang over the box to cover up irregularities in plaster work.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
9302	\$113.32	No Contact Slots or Springs...	1	10	5
9303	141.40	With Ground Contact Slots and Springs...	1	10	7
9309	70.70	.060" Cadmium-Plated Steel Plate with Ground Contact Slots and Springs.....	2	10	5

**Hubbell 4-Wire Polarized Porcelain Flush Receptacles**

60 Amperes, 250 Volts



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7301	\$606.00	Receptacle.....	1	5	10
7302	333.30	Angle Cap.....	1	5	9
7303	303.00	Straight Cap.....	1	5	8
*7114	98.98	.060" Brass Plate..	1	5	2
†7115	113.12	.100" Solid Brass Plate.....	1	5	3

\*The plate No. 7114 is .060 inch brass, size 4 1/2 x 4 1/8 inches.

†The plate No. 7115 is 5 1/2 inches square to allow an over-hang over the box to cover up irregularities in plaster work. Standard finishes are brush brass.

Soldering lugs on Nos. 7301, 7302, and 7303 accommodate No. 4 wires. Nos. 7302 and 7303 caps are steel covered, cadmium-plated, with cord grips accommodating cords up to 1 1/4 inches in diameter. If desired grounded, suffix letter G to catalogue number.

Caps are steel covered, cadmium-plated, with cord grips accommodating cords up to 1 1/4 inches in diameter.

**Fittings Suitable for Use with No. 7301 Receptacle**

Adalet Mfg. Co.—HHE-605 combination box and cover, dead end or E type. HHC-605 combination box and cover, straight through or C type.

Crouse-Hinds Co.—FSC-32 conduit body with EXF-12 extension. S-622 surface type cover and SS-622 flush type cover.

Steel City Electric Co.—0221 box with 0231 concealed cover and 0232 surface type cover.

**Hubbell Pull Socket Te-Taps**

Plug Outlet—660 Watts, 250 Volts  
Socket Outlet—250 Watts, 250 Volts



No. 3190



No. 3191

Standard finish is brush brass, and will be furnished on all orders unless otherwise specified.

**With Screw Base**

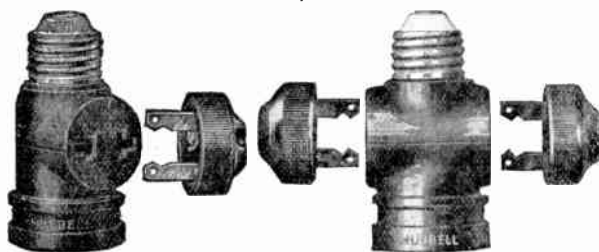
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3190	\$133.00	With Medium Screw Base...	2	10	5

**With Standard Socket Caps**

3191	\$101.80	With 1/8-Inch Cap.....	2	10	4
3193	109.44	With 3/8-Inch Cap.....	2	10	4
3194	101.80	With Pendant Cap.....	2	10	4

**Hubbell Current Taps**

660 Watts, 250 Volts



**Single Outlet—Multiple—Composition**  
No. 6338

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6338	\$78.10	With Composition Cap.....	10	50	24
6339	60.60	Less Cap.....	10	50	17

**Double Outlet—Multiple—Composition**

6710	\$107.72	With 2 No. 5420 Comp. Caps	10	20	11
6711	72.72	Less Caps.....	10	20	8

**Series—Porcelain**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6298	\$60.60	10	50	20

**Acorn Current Taps**

**Bakelite**



No. 463



No. 464



No. 465

Cat. No.	Per 100	Description	Rating	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
463	\$7.36	Cube, with Contact Blades....	{ 15A.-250V. } { 10A.-125V. }	25	100	10
464	13.00	2-Way Socket....	660W.-250V.	25	100	13
465	13.00	Double Current.	660W.-250V.	25	100	13



### No. 35024 Hubbell Pull Sockets with Lamp Base Attachment

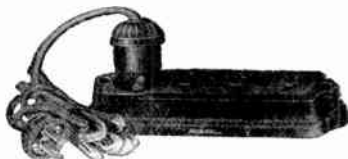
250 Watts, 250 Volts

Can be attached to any ordinary socket or receptacle. Equipped with 6 1/2-inch pull chain. Standard finish is brush brass.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
35024	\$70.00	2	10	4

### No. 6900 Hubbell Triplex Table Taps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Combines 3 double T-slot outlets, arranged in multiple, with a connector plug. May be fastened to the underside of table or to wall surface by screws through holes at either end, or may be used portably on table or desk.

Furnished complete with cord connector body, attachment plug cap, and 8 feet of black cord.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6900	\$323.20	1	5	11

### Hubbell Composition Twin Te-Taps

10 Amperes, 250 Volts; 15 Amperes, 125 Volts



Can be used with all convenience outlets excepting those having lift cover plates.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7010	\$60.60	Tandem Blades.....	2	10	4
7035	60.60	Parallel Blades.....	2	10	4

### Hubbell Edison Base Adapters

660 Watts, 250 Volts



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5897	\$40.00	Composition...	10	50	8
No. 5897	5424	Porcelain.....	10	50	8

### Hubbell Adapters for Polarized Plug Receptacles

660 Watts, 250 Volts



No. 6981 is designed for use with 10-ampere polarized wall and flush receptacles.



No. 5898 is designed for use with 20-ampere polarized wall and flush receptacles.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6981	\$46.66	Composition.....	10	30	6
5898	46.66	Porcelain.....	10	30	6



### Hubbell Porcelain Pilot Lamp Receptacles

The lamps on Nos. 427 and 428 lie normally in a horizontal position but through a hinge arrangement allow a lamp to be readily replaced. Type T-7 clear, candleabra base, 2 c.p., 125-volt lamp furnished with No. 427 and 4 c.p., 250-volt lamp furnished with No. 428.

Nos. 427 and 428 cannot be used with screwless plates.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
427	\$98.98	Receptacle with 2 C.P. 125-Volt Lamp.....	10	30	12
429	49.50	Lamp for No. 427.....	10	30	3
428	190.90	Receptacle with 4 C.P. 250-Volt Lamp.....	10	30	12
430	141.40	Lamp for No. 428.....	10	30	3

### Hubbell Bull's Eye Jewels and Bull's Eyes

#### Round Bull's Eye Jewels

This is a convex ruby jewel mounted in a brass ring with attaching lugs, for fastening to the center of any standard single convenience outlet plate for use in conjunction with pilot light receptacle.

Ruby glass and brass rings furnished unless otherwise specified. For special finishes on rings, except silver and gold, add \$2.00 per 100.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
736	\$35.36	10	30	2

#### Detachable Bull's Eyes

#### For Rectangular Hole Toggle Switch Plates

Brass ring has projecting prongs which can be bent over in back of plate. Brass ring will be furnished in any finish without extra charge.

Ruby glass and brass rings are standard. Clear, green, blue, amber and other colors furnished upon special order at same price.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7298	\$35.36	10	30	2

### Hubbell Signalite Current Taps With Tandem Blade Contacts

10 Amperes, 125 Volts



Signalites are suitable for use with all electrically-heated devices of 10 amperes, 125 volts or less.

Each plug is supplied with an electro-welded lamp guard to protect the lamp from breakage.

All brass parts are nickel-plated.

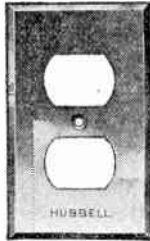
Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Per 100
6108	Without Lamp....	2	10	4	\$60.00
6109	Complete with Red Lamp.....	2	10	4	106.66
6101	125-Volt Red Lamp	2	10	1	46.66



**Hubbell Plates for Single and Duplex Convenience Outlets**



Single, Single Plate



Duplex, Single Plate

**Struck-Up—.040-Inch Metal Brush Brass**

Cat. No.	Single Per 100	Wt., Lbs. Std. *Pkg.	Cat. No.	Duplex Per 100	Wt., Lbs. Std. *Pkg.	Style Plates	Dimensions Inches
6835	\$12.00	17	6854	\$12.00	16	Single	4 1/2 x 2 3/4
6836	39.60	16	6855	39.60	15	2-Gang	4 1/2 x 4 1/16
6837	59.38	15	6856	59.38	14	3-Gang	4 1/2 x 6 3/8
<b>Lacco Brass</b>							
6780	\$10.50	17	6784	\$10.50	16	Single	4 1/2 x 2 3/4
6838	28.28	16	6857	28.28	15	2-Gang	4 1/2 x 4 1/16
6839	42.42	15	6858	42.42	14	3-Gang	4 1/2 x 6 3/8

**Struck-Up—.060-Inch Metal Brush Brass**

Cat. No.	Single Per 100	Wt., Lbs. Std. *Pkg.	Cat. No.	Duplex Per 100	Wt., Lbs. Std. *Pkg.	Style Plates	Dimensions Inches
5548	\$22.10	26	6258	\$22.10	24	Single	4 1/2 x 2 3/4
5549	50.90	23	6259	50.90	22	2-Gang	4 1/2 x 4 1/16
6840	76.36	20	6859	76.36	19	3-Gang	4 1/2 x 6 3/8

**Solid Brass—.100-Inch Metal Brush Brass**

Cat. No.	Single Per 100	Wt., Lbs. Std. *Pkg.	Cat. No.	Duplex Per 100	Wt., Lbs. Std. *Pkg.	Style Plates	Dimensions Inches
6585	\$52.64	28	6587	\$52.64	27	Single	4 1/2 x 2 3/4
6586	105.28	24	6588	105.28	23	2-Gang	4 1/2 x 4 1/16
5550	157.92	20	6260	157.92	20	3-Gang	4 1/2 x 6 3/8

\*A carton consists of 10 single plates of a kind or equivalent in gangs. A standard package consists of 100 single plates of a kind or equivalent in gangs. Plates may be assorted for standard package or carton quantity.

**Hubbell Blank Plates**



Single Plate

Screw spacings 2 3/8 inches on centers.

**Struck-Up—.040-Inch Metal Brush Brass**

Cat. No.	Per 100	Style Plates	Dimensions Inches	Wt., Lbs. Std. *Pkg.
6959	\$25.46	Single	4 1/2 x 2 3/4	20
6960	50.90	2-Gang	4 1/2 x 4 1/16	18
6961	76.36	3-Gang	4 1/2 x 6 3/8	16
<b>Lacco Brass</b>				
6785	\$23.88	Single	4 1/2 x 2 3/4	20
6962	47.74	2-Gang	4 1/2 x 4 1/16	18
6963	71.64	3-Gang	4 1/2 x 6 3/8	16

**Struck-Up—.060-Inch Metal Brush Brass**

Cat. No.	Per 100	Style Plates	Dimensions Inches	Wt., Lbs. Std. *Pkg.
6964	\$31.10	Single	4 1/2 x 2 3/4	30
6965	62.22	2-Gang	4 1/2 x 4 1/16	28
6966	93.32	3-Gang	4 1/2 x 6 3/8	26

**Solid Brass—.100-Inch Metal Brush Brass**

Cat. No.	Per 100	Style Plates	Dimensions Inches	Wt., Lbs. Std. *Pkg.
6970	\$53.74	Single	4 1/2 x 2 3/4	45
6971	107.46	2-Gang	4 1/2 x 4 1/16	42
6972	161.20	3-Gang	4 1/2 x 6 3/8	37

\*A carton consists of 10 single plates of a kind or equivalent in gangs. A standard package consists of 100 single plates of a kind or equivalent in gangs.

**Hubbell Single and Double Outlet Telephone Plates**



No. 6904

Single outlet plate has one hole in the center of each gang. Double outlet plate has 2 tapped holes per gang.

Each hole supplied with a 3/8-inch composition bushing.

Screw spacings, 2 3/8 inches. Furnished with adapter to 3 3/32 inches.



No. 6935

**Struck-Up—.040-Inch Metal Brush Brass**

Single		Double		Style Plates	Wt., Lbs. Std. *Pkg.
Cat. No.	Per 100	Cat. No.	Per 100		
6904	\$28.28	6935	\$33.94	Single	30
6905	56.56	6936	67.88	2-Gang	28
6906	84.84	6937	101.80	3-Gang	26
<b>Lacco Brass</b>					
6907	\$26.70	6938	\$28.28	Single	30
6908	45.24	6939	56.56	2-Gang	28
6909	67.88	6940	84.84	3-Gang	26

**Struck-Up—.060-Inch Metal Brush Brass**

Cat. No.	Per 100	Cat. No.	Per 100	Style Plates	Wt., Lbs. Std. *Pkg.
6910	\$33.94	6941	\$39.60	Single	32
6911	67.88	6942	79.18	2-Gang	30
6912	101.80	6943	118.78	3-Gang	28

**Solid Brass—.100-Inch Metal Brush Brass**

Cat. No.	Per 100	Cat. No.	Per 100	Style Plates	Wt., Lbs. Std. *Pkg.
6923	\$56.56	6947	\$62.22	Single	35
6924	113.12	6948	124.44	2-Gang	33
6925	169.68	6949	186.64	3-Gang	31

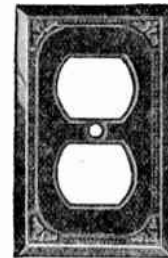
\*A standard package of plates for single receptacle consists of 100 single plates of a kind or equivalent in gangs. A standard package of plates for double receptacle consists of 100 single plates of a kind or equivalent in gangs. A carton consists of 10 single plates of a kind or equivalent in gangs. Plates may be assorted to make standard package or carton quantity.

**Hubbell Bakelite Convenience Outlet Plates**

Mat, Ornamental and Ribbed Finishes



No. 7093 Mat



No. 4094 Ornamental



No. 7094 Mat

Made of genuine bakelite, and regularly furnished in brown; black can be furnished on special order at \$1.00 per 100 gangs extra.

The top surface of the mat plate has a stipple finish, set off by a narrow polished border.

The ribbed plate has a ribbed surface set off by a plain polished border; while the ornamental plate is also ribbed, but set off by a decorative border.

Carton, 10; standard package, 100.

Mat Surface Cat. No.	Ribbed Surface Cat. No.	Orna-mental Surface Cat. No.	Per 100	Description	Wt., Lbs. Std. *Pkg.
†7093	*9093	*4093	\$8.42	For Single Outlet	10
†7094	9094	4094	8.42	For Duplex Outlet	10

†Price covers mat finish surface. For genuine sand blast finish, add \$3.00 per 100 gangs.

\*Regularly furnished with metal screws. When bakelite screws are furnished add \$1.00 per 100 gangs in standard package quantities. Duplex plates furnished with metal screws only.



## Hubbell 2-Gang Combination Plates For Duplex Convenience Outlet and Square Handle Toggle Switch



Size of plates, 4 1/2 x 4 1/8 inches.

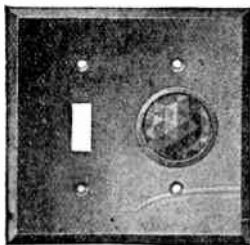
Standard finish on flush plates is brush brass.

Carton, 2; standard package, 10.

Struck-Up .040-Inch Metal			
Brush Brass		Lacco	
Cat. No.	Per 100	Cat. No.	Per 100
7105	\$53.74	7106	\$42.42

Struck-Up .060-Inch Metal			
Cat. No.	Per 100	Cat. No.	Per 100
7108	\$65.04	.....	.....

## Hubbell 2-Gang Combination Plates For Round Bull's Eye and Square Handle Toggle Switch



Size of plates, 4 1/2 x 4 1/8 inches.

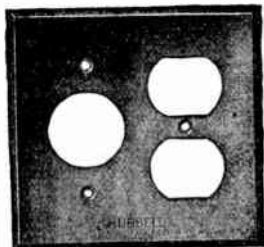
Standard finish on flush plates is brush brass.

Carton, 2; standard package, 10.

Struck-Up .040-Inch Metal			
Brush Brass		Lacco	
Cat. No.	Per 100	Cat. No.	Per 100
7073	\$89.08	7074	\$77.78

Struck-Up .060-Inch Metal			
Cat. No.	Per 100	Cat. No.	Per 100
7110	\$100.40	.....	.....

## Hubbell 2-Gang Combination Plates For One Duplex and One Single Convenience Outlet



Size of plates, 4 1/2 x 4 1/8 inches.

Standard finish on flush plates is brush brass.

Carton, 2; standard package, 10.

Struck-Up .040-Inch Metal			
Brush Brass		Lacco	
Cat. No.	Per 100	Cat. No.	Per 100
7040	\$53.74	7048	\$42.42

Struck-Up .060-Inch Metal			
Cat. No.	Per 100	Cat. No.	Per 100
6749	\$65.04	.....	.....

## Hubbell Bakelite 2-Gang Combination Plates

### Mat, Ornamental and Ribbed Finish

Plates made of genuine brown bakelite. Black plates supplied on order without extra charge. Gang plates or other combinations can be supplied in brass, finished brown, to imitate bakelite at imitation bakelite finish prices. With metal screws.

Carton quantity, 2 gangs; standard package, 10 gangs.  
For Square Handle Toggle Switch, and Single Convenience Outlet

Mat Surface Cat. No.	Ribbed Surface Cat. No.	Orna- mental Surface Cat. No.	Per 100	Wt., Lbs. Std. Pkg.
7123	9123	4123	\$28.00	1 1/2
7140	9140	4140	\$28.00	1 1/2

No. 7123-Mat

## Special Features Hubbell Standard Brass Flush Plates

### Plates of Special Dimensions and Screw Spacings 0.100-Inch Metal Only

Plates of special dimensions and screw spacings furnished at \$9.80 per 100 square inches plus the price of the nearest regular solid plate. In no case will charge be less than for a single solid plate. The above additions should be made to symbol plates only.

### Plates with Round Corners and Round Edges 0.100-Inch Metal Only

For single plates with round corners and round edges having standard dimensions and screw spacings add \$21.00 per 100 plates to the price of the single solid plates. For gang or combination plates with round corners and round edges add \$21.00 per 100 plates for first section, and \$7.00 per 100 plates for each additional section. Standard package, 10 plates of one style. Carton quantity, 1 plate.

### Plates with Round Corners and Beveled Edges 0.100-Inch Metal Only

For single or gang plates with round corners and beveled edges add \$21.00 per 100 plates. Standard package, 10 plates of one style. Carton quantity, 1 plate.

### Plates with Raised Edges 0.100-Inch Metal Only

Plates with raised edges to cover device not flush with wall furnished in solid metal at a price of \$400.00 per 100 for single plates and \$200.00 per 100 for each additional gang, in addition to price of standard plate. Special prices apply to raised edges deeper than 1/2 inch.

### Plates with Square Corners and Square Edges 0.100-Inch Metal Only

Plates with square corners and square edges having standard dimensions and screw spacings furnished at same price as regular solid plates. For plates with round corners and square edges, the additional charge is the same as given above for round corners and beveled edges.

### Flush Plates of Special Metals

Description	*Extra per 100 Gangs
Aluminum Brushed, Solid or .060"	\$20.30
Aluminum Polished, Solid or .060"	\$4.30
Bronze, Genuine, Brushed, Solid, .060" or .040"	14.00
Bronze, Genuine, Polished, Solid, .060" or .040"	28.00
Benedict Metal, (Nickel Silver), Polished or Brushed, Solid, .060" or .040"	35.00

\*For flush plates of special metals add prices above to prices of corresponding brass plates in brush brass finish.

### Engraving

Flush plates stamped with words or numbers at \$14.00 per 100 letters or numerals, standard package 100 letters or numerals.

## Screws for Hubbell Bakelite Plates



French head brass screws (D.5873) to match bakelite are supplied on all bakelite plates but bakelite headed screw No. 7213 may be had on special order at an advance in price of \$1.06 per 100.



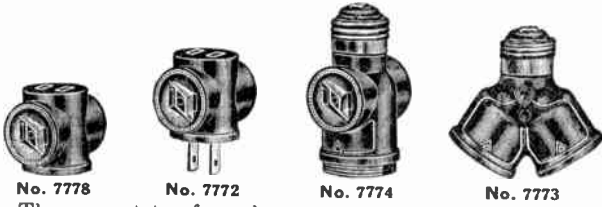
No. 7213

Special ornamental head screws and special screwdriver will be supplied with standard package quantities of plates when so specified, without extra charge, or may be purchased separately.

Cat. No.	Ornamental Plate Screws			Std. Pkg.	Wt., Lbs. Std. Pkg.
	Per 100	Car- ton	Std.		
7169	\$ .96	20	100		1/4
7170	\$13.14	1	5		1/4
7213	\$2.12	100	500		2

No. 7169 Screw, 7170 Screwdriver (Special Equipment)

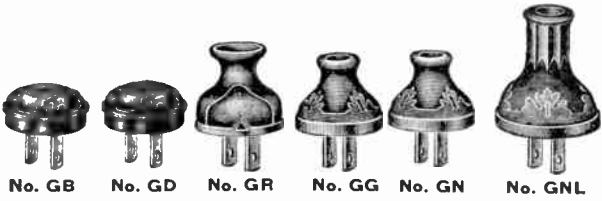
**H & H Bakelite Taps and Sockets**



The current tap faces have standard finding groove feature which guides the attachment plug when inserting.  
The No. 7778 Cord Cube Tap is used to make extension cord sets of any desired length.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
7778	\$10.50	Cord Cube Tap	25	100	25
7772	8.50	Cube Tap	25	100	25
7774	13.00	Current Tap	25	100	25
7773	13.00	2-Way Socket	25	100	25

**H & H Attachment Plugs and Caps**



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
GB	\$3.80	Bakelite, 1/4-Inch Hole	50	500	19
GD	3.80	Bakelite, 13/32-Inch Hole	50	500	19
<b>With Pull Handle</b>					
GR	\$5.20	Bakelite, 5/16-Inch Hole	25	100	6
GG	10.00	Rubber, 13/32-Inch Hole	25	100	8
GN	10.00	Rubber, 5/16-Inch Hole	25	100	8
GNL	10.00	Rubber Extra Long Handle	25	100	9

**H & H Bakelite Convenience Outlets**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

These convenience outlets are all bakelite and moisture-proof throughout. The face has a modernistic design and finding grooves.



**Top Wired**

Binding screws are handily placed on the top of the base. Connections may be completed after receptacle is fastened to wall case.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
7724	\$26.26	Single, with Plaster Ears	10	100	28
7725	38.38	Duplex, with Plaster Ears	10	100	32

**Top Wired, 4 Screws**

7725-B	\$38.38	Duplex, with Plaster Ears	10	100	21
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**Side Wired, 4 Screws**

The 4 binding screws speed up through wiring because no splices are necessary. Wires can be cut at first binding screw and continued from second screws for additional outlets.

1913	\$29.00	Duplex	10	100	21
1913-G	29.00	Duplex, with Plaster Ears	10	100	23

**2-Circuit**

One circuit or one outlet is left "Always On," for various electric appliances. The other circuit may be used for floor and table lamps controlled from a switch at the doorway.

1914	\$35.06	2 Feeds, 1 Return	10	100	21
1914-G	35.06	2 Feeds, 1 Return, Plaster Ears	10	100	23
1915	35.06	2 Feeds, 2 Returns	10	100	21
1915-G	35.06	2 Feeds, 2 Returns, Plaster Ears	10	100	23

**H & H Warning Lights**

When the current is on, a candelabra lamp (mounted in the porcelain base) glows through the ruby, cut-glass bull's-eye and serves as a reminder to turn current off when not needed. It saves current, prevents injury to irons or heaters, and helps to prevent fire.



The lamp socket is hinged to the base, permitting the lamp to be easily inserted and reducing the lamp breakage.

Carton, 10. Standard package, 30.

**For 125 and 220-Volt Circuits**

Cat. No.	Per 100	Description	Pkg. Wt. Lbs.
2999	\$98.98	Receptacle with 2-C.P., 125-Volt Candelabra Base Lamp	14
3000	88.00	Single Plate with Bull's-Eye, 4 1/2 x 2 3/4 Inches	13

**Separable Bull's-Eye**

1513	\$35.36	Rectangular for No. 8841 Square Handle Tumbler Plates	3
8619	35.36	Round for Single Convenience Outlet Plates	3



No. 3000

**H & H 2-Gang Unit Combinations with Warning Lights**

**Double-Pole, with .040-Inch Chromium Plates**

Switch Rating, 20 Amperes, 250 Volts



Nos. 5350, 5358

Nos. 5351, 5359

Nos. 5355, 5362

Made in two styles: Switch controlling outlet, in series; and switch and receptacle independent of each other, separate.

Carton, 2. Standard Package, 10.

Cat. Nos.	Series	Separ-ate	Per 100	Description	AMPERES	Pkg. Wt. Lbs.
5350	5358		\$369.26	Regular T Slots	15 10 10	
5351	5359		447.64	3-Wire (2-Wire with Ground)	15 10 10	
5355	5362		435.52	2-Wire Polarized	20 10	

**H & H Receptacle and Bull's-Eye**

**With .060-Inch Brass Plate**

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
7711	\$181.80	2	10	8

**H & H Receptacle and Bulls' Eye With Bakelite Plate**

15 Amps., 125 Volts; 10 Amps., 250 Volts

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
7728	\$181.80	Complete Unit with Plate	2	10	7
7729	58.18	Bakelite Plate, with Jewel	2	10	3



No. 7728

## H & H Switch and Receptacle Combinations

### Double-Pole

With .060-Inch Brass Wall Plate

15 Amperes, 125 Volts; 10 Amperes, 250 Volts



The L slots in receptacle part take tandem or parallel attachment plug blades. Operating lever and receptacle cap are of bakelite.

### With Composition Base

Cat. No.	Per 100	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.
8998	\$175.74	2	10	8

### With Porcelain Base

8974	\$163.62	2	10	8
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## H & H Switch and Receptacle Combinations

### Double-Pole

With Hegemite Plates and Composition Base

Has receptacle opening and hegemite plate in one molded piece.

The L slots in receptacle part take tandem or parallel attachment plug blades.

Operating lever and receptacle cap are of bakelite. Brown handles are standard.

10 Amperes, 250 Volts

Cat. Nos. Border Design	Matte Surface	Per 100	Carton	Std. Pkg.	Pkg. Wt., Lbs.
3974	4192	\$175.74	2	10	8

20 Amperes, 250 Volts

3976	4194	\$187.86	2	10	8
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Above ratings are for switches. Receptacle part rated 15 amperes, 125 volts; 10 amperes, 250 volts.



## H & H 1-Gang Unit Combinations

Warning Light and Tumbler Switch  
Brass or Bakelite Plate

Warning light shows when lights are left on. Jewel is flush with the plate.

Carton, 2. Standard package, 10.

### Single-Pole

Cat. No.	Per 100	Description	AMPERES 125V.	Pkg. 250V. Wt.
7739	\$282.80	Brass Plate.....	10	5 12
7759	282.80	Bakelite Plate..	10	5 12

### Double-Pole

7956	\$282.80	Brass Plate.....	10	10 12
7957	282.80	Bakelite Plate..	10	10 12

### 3-Way

7953	\$282.80	Brass Plate.....	10	5 12
7954	282.80	Bakelite Plate..	10	5 12

Can be supplied in lock style at an addition of 90 cents each; add L to Cat. No.



No. 7739



No. 7759

## H & H Illuminated House Number Units



No. 7902

For homes and apartments, 110-volt service. A regular wiring device connected to usual lighting circuit. Can be controlled from an inside switch.

Numbers are white, illuminated at night. Cadmium finish plate fits over a rubber mat to make a weatherproof job. Standard candelabra base lamp is furnished.

Carton, 2. Standard package, 10.

Cat. No.	Per 100	Description	Pkg. Wt., Lbs.
7901	\$227.26	1-Gang Unit Complete.....	8 lbs.
7902	318.16	2-Gang Unit Complete.....	15 lbs.
7900	60.60	Number Series 0-9, 10 Spacers..	12 oz.
7900-0 to			
7900-9	4.04	Separate Numbers.....	1 1/4 oz.
7900-S	2.02	Spacer.....	1 1/4 oz.

## H & H Bakelite Radio Outlets

### Single

For ground and aerial connections.

Fits a standard wall case and takes standard brass or bakelite plates.

Receptacle is brown bakelite with patented finding grooves.

Slots and plug fingers are set at an angle so that it is impossible to reverse aerial and ground when inserting plugs.



No. 2147

Cat. No.	Per 100	Description	Car-Std. Wt. Pkg. Lbs.
2147	\$51.00	Receptacle and Cap.....	2 10 2
2190	62.58	Receptacle, Cap, and Bakelite Plate	2 10 3



No. 2145

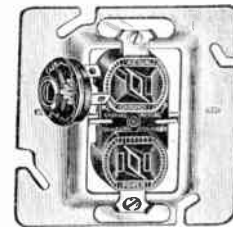
### Duplex

For aerial, ground, and power connections. Similar to the Single, except the addition of a standard power outlet.

Because of the angle of the slots, aerial-ground caps and power caps cannot be interchanged.

Fits standard wall cases, and standard duplex brass and bakelite plates.

2145	\$99.36	Receptacle and Cap.....	2 10 12
2146	109.88	Receptacle, Cap, and Bakelite Plate.....	2 10 15



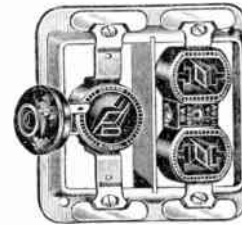
No. 2151

### Duplex, with Cover for 4x4-Inch Box

Specially designed to meet revised Underwriters requirements covering low tension radio circuits and power circuits in the same box.

Furnished complete with box cover and barrier.

2180	\$138.16	Receptacle, Cap, Cover, and Bakelite Plate.....	2 10 9
2181	139.74	Receptacle, Cap, Cover, and Brass Plate.....	2 10 10
2151	127.64	Receptacle, Cap, Cover, no Plate	2 10 8



No. 2150

### 2-Gang, with Cover for 4x4-Inch Box

This specially designed cover is approved by the Underwriters for low tension radio outlets and power outlets in the same box.

Duplex receptacle gives radio power and portable lamp connections at the same time from one outlet.

2182	\$162.82	Radio Receptacle, Duplex Receptacle, Cap, Box Cover, and Brass Plate.....	2 10 10
2183	164.54	Radio Receptacle, Duplex Receptacle, Cap, Box Cover, and Bakelite Plate.....	2 10 9
2150	142.50	Radio Receptacle, Duplex Receptacle, Cap, and Cover.....	2 10 8

### 2-Gang, for Standard Wall Cases

Gives aerial, ground, and power outlet, with an extra outlet for table or floor lamp.

2184	\$124.14	Radio Receptacle No. 2149, Duplex Receptacle, Cap, and Bakelite Plate.....	2 10 6
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The .060-inch brass plates are regularly supplied, but .060-inch or solid brass plates will be furnished if desired at regular advances.



**Hemco Heater and Cube-Tap Cord Sets**



No. HC630G



No. HC633

Made with labeled cord and listed as standard by Underwriters' Laboratories. Switch and switchless plugs have a rating of 10 amperes, 125 volts; 5 amperes, 250 volts. Carton, 10. Standard package, 50.

**Heater Cord Sets**

Cat. No.	PER 100 Packed	Bulk	Description	Pkg. Wt., Lbs.
HC630	\$51.20	\$48.20	With 6 Feet 3M Cycle Br. Heater Cord with Switch Plug...	26
HC630G	54.20	51.20	Same as HC630 Except has HG Handle Grip Attachment.	23
HC633	34.66	31.66	6 Feet 3M Cycle Br. Heater Cord with Switchless Plug..	21
HC830	55.28	52.28	8 Feet 3M Cycle Br. Heater Cord with Switch Plug.....	29
HC833	38.74	35.74	8 Feet 3M Cycle Br. Heater Cord with Switchless Plug..	25

**Cube-Tap Cord Sets**

HR0618	\$35.48	\$32.48	6 Feet No. 18 Rayon Cord....	16
HR0918	41.36	38.36	9 Feet No. 18 Rayon Cord....	18
HR1218	42.44	44.44	12 Feet No. 18 Rayon Cord....	20
HR1518	53.32	50.32	15 Feet No. 18 Rayon Cord... 24	

When equipped with HG Handle Grip, add G to Cat. No. and \$3.00 per list price per 100 sets or devices.

When equipped with HF Cap, add \$1.50 per 100 sets.

When equipped with HRA or HRB Caps, add \$5.95 per 100 sets.

**Hemco Appliance Switch Plugs and Cord Switches**



No. HG



No. H280



No. H271

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
HIG	\$5.00	Handle Grip Attachment for Appliance Plugs....	10	100	3
H280	23.16	Templus Switch Plug....	10	50	10
H271	30.52	Templus Cord Switch, Single-Pole.....	10	50	5

**Hemco Switchless Plugs**



No. H250



No. H738



No. H738G



No. H966



No. H669

H250	\$25.00	Templus Switchless Plug	10	100	17
H738	8.42	Templus Switchless Plug	10	100	16
H738G	11.42	No. H738 with No. HG..	10	100	16
H966	11.00	Templus Switchless Table Appliance Plug.....	10	100	11
H667	42.42	Templus Switchless Plug, Monel Silver Contacts.	10	100	6
H669	21.28	Templus Switchless Plug, Tempeloid Contacts...	10	100	6

**H & H Screwless Bakelite Heater Plugs**

**With Clip Fastening**

There are no screws to lose or loosen on these plugs. Bakelite sections are held together by spring clips which are self adjusting to yanks, strains, and temperature changes.

Plugs are made with or without switch.

The design of the contact clips has been improved and they will give excellent service without pitting or burning.



No. 7762 No. 7760

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7762	\$29.00	With Switch.....	25	100	20
7760	13.00	Without Switch.....	25	100	13

**H & H Heater Plug Cord Sets**



No. 154

Made with high quality 3000-cycle test heater cord and clip fastening bakelite heater plugs, with or without switch control.

Underwriters' approved; each set has screwless heater plug held together by spring clips.

Packed in cartons of 10. No. 151 packed 50 to a standard package; weight, 19 pounds. Nos. 152, 154 and 155 packed 50 to a standard package; weight, 21 pounds.

Guaranteed one year.

No. 151	6-Foot Length, Switchless.....	per 100	\$50.00
No. 152	8-Foot Length, Switchless.....	per 100	60.00
No. 154	6-Foot Length, Switch Plug.....	per 100	65.00
No. 155	8-Foot Length, Switch Plug.....	per 100	75.00

**Acorn Appliance Plugs**

**Bakelite**



No. 460

Cat. No.	Per 100	Description	Rating	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
460	\$8.42	Without Switch	{ 10A.-125V. } { 5A.-250V. }	10	100	14
462	16.84	With Switch	{ 6A.-125V. } { 3A.-250V. }	10	50	11

**H & H Fan Hanger Outlets**

This device provides electrical connection and mechanical support for fans. Fits a standard 4-inch square box.

Has all-bakelite receptacle with finding grooves.

Two standard types are supplied: Clamp Type for the average job where outlet fastens to the box cover, and Stud Type where hickey fastens to box stud.

Brush brass .060-inch plate is standard.



No. 7750

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7750	\$244.00	Clamp Type, Complete with Plate.....	10	50	32
7751	244.00	Stud Type, Complete with Plate	10	50	32
7752	218.80	Clamp Type, without Plate.....	10	50	22
7753	218.80	Stud Type, without Plate.....	10	50	22
7755	25.20	.060-Inch Brass Plate for Nos. 7752 and 7753.....	10	50	10

**H & H Clock Hanger Outlets**

Provides a mechanical support for the clock and electrical connection.

Receptacle is recessed so plug cap goes flush with the plate.

Complete with brush brass .040-inch plate.



Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7707	\$141.40	2	10	8

## FA Hanger Outlets Fixture Stud Type

Designed for use with standardized outlet box and 3/8-in. fixture stud. Furnished with beveled edge face plate, bakelite receptacle and special fan supporting bracket which is adjustable for plumbing the outlet if box is out of line. A heavy steel stud (1/4-20) with brass washer for attaching fan, is furnished.

Box is not furnished. Any NEMA 4x4x1 1/2-inch outlet box with 3/8-in. fixture stud and NEMA rectangular opening single switch cover, 1/2 in. deep, can be used.

Cover is 2 3/4x4 1/2-in. (.060-in.) struck-up brass, brush brass or black finish; bakelite receptacle which is included in price.

Prices on finish to match Bakelite, and special finishes upon request, with sample. Special finishes are difficult to match and it is recommended that plates be purchased unfinished, so special finish can be applied locally.

Carton, 1; standard package, 50; weight, std. pkg., 29 pounds.

Each..... \$3.50



## FA Security Hanger Outlets

Primarily designed for fan service, this outlet readily lends itself as a utility outlet for heaters, show-window floodlights, and various electrical appliances.

Adaptable to all classes of modern buildings and approved by the Underwriters' Laboratories for supporting oscillating fans up to and including 16-inch.

Furnished with a pressed steel box, 4x4x1 1/2 inches; four corners of box fitted with substantial supports to which steel box cover is fastened. Box has 1/2 and 3/4-inch knockouts. Brass cover plate fastens to steel box cover. Adjustable bracket, to which fan is fastened by 1/4-inch steel stud, is riveted to back of box. Heavy brass adjusting stud allows for variation in plaster. Furnished with .060-inch struck-up brush brass finish cover plate, 2 3/4x4 1/2 inches, and special outlet box with bakelite T-slot receptacle.

Individual cartons; std. pkg., 50; wt. std. pkg., 90 lbs. Complete, Brush Brass or Black Finish.....each \$4.00

Polarized receptacle, 50 cents additional.



## No. 3750 Bryant Fan Hanger Outlets Yoke Type

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Designed primarily as a fan hanger outlet, but is adapted for individually illuminated pictures, electric heaters, radio loud speakers, etc. May be hung on supporting screw so as to conceal the receptacle outlet, cord, and hangings.

Rigid vibration-proof assembly. Uses standard square outlet box and cover with raised rectangular opening.

A heavy gauge sherardized steel plate supports the receptacle.

Brass finishing plate is held independently.



No. 3750 Complete

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
3750	\$244.00	10	50	45

## R & S Fan Hanger Outlets

Adapted for individually illuminated pictures, electric heaters, radio loud speakers, etc. Pictures can be hung on supporting screw, concealing receptacle outlet, cord and hangings.

Heavy gauge cadmium steel plate supports receptacle. This construction permits installation and wiring less finishing plate prior to final decorating of walls.

Receptacle with supporting straps welded to steel plate prevents loosening due to vibration.

Heavy gauge brass (2 3/4x4 1/2 inches) finishing plate held independently, prevents loosening of plate on failure to replace the fan hanger supporting screw when fan is removed.

### Yoke Lock Type

The yoke lock fan hanger affords convenience, flexibility and low cost installation.

Has rigid vibration-proof assembly; standard square outlet box and cover with raised rectangular opening. This permits the contractor installing standard material throughout.

With yoke lock clamping device and 2-point support produced by assembly of brass toggle and malleable iron yoke.

Standard package, 50. Approximate net weight each, 1/8 pound.



No. 661

### Stud Lock Type

Complete with specially constructed heavy gauge galvanized steel cover and box with 1/2 and 3/4-inch k.o. in back and four sides.

With secure and rigid assembly of malleable iron stud to box with lock nut and additional cotter safety pin. This prevents loosening from constant vibration.

Standard package, 50. Approximate net weight each, 1 1/2 pounds.



No. 649

## No. 7707 Hubbell Bakelite Electric Clock Hanger Outlets

This device allows the clock to hang flush with the wall and to cover neatly the electrical outlet.

The attachment plug is out of the way of the clock.

No unsightly and often dangerous wires need show, yet the clock can be removed and installed in a few seconds.

With .040" Brass Plate

Cat. No.	Per 100	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7707	\$141.40	2	10	5



Description	Yoke Lock Type		Stud Lock Type	
	Cat. No.	Each	Cat. No.	Each
2-Wire T Slot Type, with Brush Brass Plate.....	661	\$3.50	649	\$4.00
2-Wire T Slot Type, with Brown Bakelite Finished Plate.....	662	3.75	729	4.25
2-Wire Polarized Type with Brush Brass Plate.....	719	4.00	647	4.50
2-Wire Polarized Type with Brown Bakelite Finished Plate.....	720	4.25	792	4.75
2-Wire Polarized Type with Telephone Bronze Plate.....	654	4.50	797	5.00
3-Wire Polarized Type with Brush Brass Plate.....	653	4.50	637	5.00
3-Wire Polarized Type with Brown Bakelite Finished Plate.....	723	4.75	799	5.25

Fan hangers can be supplied in other finishes; prices upon application.

**R & S Ever-Lok Receptacles, Plugs and Cord Connectors**

Ever-lok fittings are for use with portable motor-driven tools, hand portable appliances, timestamps, adding machines, etc. They are mistake-proof and connect or disconnect only one way assuring an accident-proof connection.

Ever-lok receptacles, plugs and cord connectors are polarized.

Exteriors are heavy steel, cadmium finish.

Arrows on shells indicate line-up of only position in which connection can be made. Plug cannot be inserted from any other position.

Interiors are molded bakelite, grooved to fit corresponding upset lugs on shells so that improper assembly or alignment of interior is impossible.

Contacts are properly marked to maintain identification of polarity throughout.

Fittings are automatic locking. Outer shell of plug floats on inner shell and turns within limits allowed by two pins in two slots on opposite sides of shell. As plug is inserted in connector or receptacle, lugs on outer shell ride diagonally down into funnel-shaped grooves until they strike the bottom, then outer shell turns on its axis by means of a spring in its base and lugs snap into position, automatically locking plug.

To disconnect plug it is necessary to grasp it firmly and give a short reverse twist to bring lugs back out of position to where they will pull out. Outer shoulders are knurled to facilitate this action, but plug cannot be withdrawn without first giving it this reverse twist.

Standard package, 100 assorted pieces.

**Receptacles and Rectangular Covers**



Can also be furnished with cast iron conduit box No. 8009 for surface mounting or for mounting to standard switch box cover for flush work.

10 Amperes, 250 Volts D.C.—  
440 Volts A.C.

Cat. No.	8002	8003	8008
Wires....	2	3	4
Each....	\$2.50	2.60	2.70

20 Amperes, 250 Volts D.C.—  
440 Volts A.C.

Cat. No.	8006	8005	8004
Wires....	2	3	4
Each....	\$2.65	2.75	2.85

**Receptacles with Round Covers**



Cover is provided with 4 screw hole knockouts. Can be furnished with cast iron conduit box No. 8039 for surface mounting.

Cat. No....	8032	8033	8034
Wires.....	2	3	4
Each.....	\$2.50	2.60	2.70

**Male Plugs**



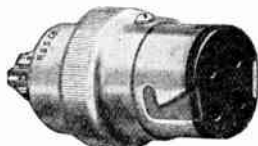
10 Amps., 250 Volts D.C.—  
440 Volts A.C.

Cat. No.	8012	8013	8018
Wires....	2	3	4
Each....	\$1.60	1.70	1.80

20 Amps., 250 Volts D.C.—  
440 Volts A.C.

Cat. No.	8016	8015	8014
Wires....	2	3	4
Each....	\$1.65	1.75	1.85

**Female Connectors**



10 Amps., 250 Volts D.C.—  
440 Volts A.C.

Cat. No.	8022	8023	8028
Wires....	2	3	4
Each....	\$2.35	2.45	2.55

20 Amps., 250 Volts D.C.—  
440 Volts A.C.

Cat. No.	8026	8025	8024
Wires....	2	3	4
Each....	\$2.55	2.65	2.75

**R & S Switch Box Type Receptacles and Plugs**

2-Wire

10 Amperes, 250 Volts



No. 121

The receptacle bodies and plugs are constructed of moulded bakelite with self-aligning contacts. They are made in two types, polarized and reversible.

Standard finish is brush brass. All other finishes are extra.

Description	Weight Pounds	Reversible		Polarized	
		Cat. No.	Each	Cat. No.	Each
Complete with Plug.....	3/4	121	\$2.80	346	\$2.80
Plug Only.....	1/4	120	1.20	347	1.20

**R & S Heavy Duty Receptacles and Plugs**  
2 and 3-Wire—Polarized

30 Amperes, 250 Volts



No. 80

Particularly desirable for use for stereopticon machines, heavy duty toasters, floor surfacing machines, etc.

Fits standard switch box cover. Receptacles and plugs are constructed of cold moulded bakelite with self-aligning contacts. Plugs have cable grip in handle.

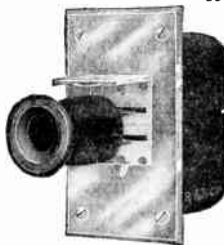
Standard finish is brush brass. All other finishes are extra.

Cat. No.	Each	Description	Wt. Lbs.
80	\$3.75	2-Wire, Complete with Plug.....	1
556	1.80	2-Wire, Plug Only.....	1/4
81	5.50	3-Wire, Complete with Plug.....	1 1/2
157	2.10	3-Wire, Plug Only.....	3/4

**R & S Flush Wall Type Receptacles and Plugs**

2-Wire—Polarized

60 Amperes, 250 Volts



No. 14

For electric range connection, motion picture machines, etc. Heavy moulded bakelite with bronze switch jaw type spring contacts. Japanned cast iron box (galvanizing extra) 6x3 1/2 x 4 1/2 inches deep. Plate, 7x4-inch solid brass 3/32-inch thick, with flush gravity flap. Brush brass finish; other finishes extra. Solid bronze plates to order. Outlets, 1/4-inch maximum conduit in any side.

Cat. No.	Each	Description	Wt. Lbs.
14	\$19.20	Complete with Plug.....	7 1/2
141	21.00	Same as No. 14 but with Lock and Key..	7 1/2
140	4.20	Plug Only.....	1 1/2

**No. 478 R & S Combination Water-tight Switch, Receptacle and Plug**

Cast Brass Boxes and Cover—2-Wire—Polarized

10 Amperes, 125 Volts



Combination of single-pole switch and 2-wire receptacle mounted in one box as illustrated.

Maximum conduit, 3/4 inch straight through.

Specify size and location of outlets when ordering.

No. 478, Complete with Plug and 4 1/2 x 3 x 1 1/2-Inch Box, Weight 3 Pounds.....	each \$6.00
No. 452, Plug Only, Weight 1/4 Pound.....	each 1.00



## R & S Flush Type Receptacles and Plugs

Cast Iron Galvanized Boxes with Overhanging Brass Covers

Weatherproof Type—2 and 3-Wire—Polarized  
30 Amperes, 250 Volts



Size box, 4 1/4 x 3 x 3 inches.

Bakelite receptacle and plug with heavy self-aligning machined contacts; cable grip is incorporated in plug handle. Plugs will also fit floor receptacles, connectors and other wall receptacles.

Solid brass plates, 5 1/4 x 4 inches, with hinged spring flap

cover. Standard finish, black oxidized; other finishes are extra.

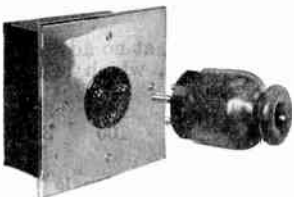
Maximum conduit, 1 1/4 inches. Specify size and location of outlets when ordering.

Cat. No.	Each	Description	Approx. Wt. Lbs.
31	\$10.50	2-Wire, Complete with Plug.....	5 1/2
556	1.80	2-Wire Plug Only.....	1/4
25	12.90	3-Wire, Complete with Plug.....	5 3/4
157	2.10	3-Wire Plug Only.....	3/4

## R & S Flush Type Receptacles and Plugs

3 and 4-Wire—Polarized

60 and 100 Amperes, 250 Volts



Suitable for electric range connection, motion picture machines or wherever a flush outlet is desired.

Receptacle interior and plug base of moulded composition with self-aligning machined contacts. Plugs also fit floor receptacles and other wall receptacles.

Steel boxes, japanned.

Solid brass plates, 1/8 inch thick; 60 ampere, 6x6 inches; 100 ampere, 8x8 inches. Outlets: 60 ampere, maximum conduit, 1 1/2 inches (slip hole); 100 ampere, maximum conduit, 3 1/2 inches (slip hole). Specify size and location of outlets when ordering.

Cat. No.	Each	Description	Size Box In.	Approx. Wt. Lbs.
1762	\$16.80	60-A., 3-W., with Plug	5 x 5 x 3	4 1/2
150	4.80	60-A., 3-W., Plug Only		3/4
1763	19.20	60-A., 4-W., with Plug	5 x 5 x 3	4 1/2
337	6.00	60-A., 4-W., Plug Only		3/4
1791	24.00	100-A., 3-W., with Plug	6 3/4 x 6 3/4 x 6	8
975	7.20	100-A., 3-W., Plug Only		1 1/2

## R & S Watertight Receptacles and Plugs

Cast Brass Boxes and Covers

Standard Rectangular Type—2, 3 and 4-Wire—Polarized

10 Amperes, 125 Volts



Maximum conduit, 3/4 inch straight through.

Specify size and location of outlets when ordering.

## No. 447 R & S Watertight Receptacles and Plugs

Standard Round Type—2-Wire—Polarized

10 Amperes, 125 Volts



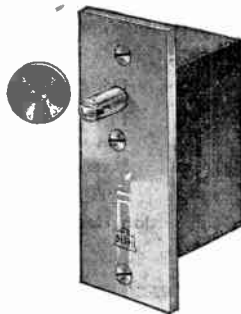
Box, 3 inches in diameter, 1 5/8 inches deep.

Maximum conduit, 3/4 inch one way.

Specify size when ordering.

No. 447, Complete with Plug, Weight 2 Pounds. each \$4.00  
No. 452, Plug Only, Weight 1/4 Pound..... each 1.00

## H & H Automatic Door Switches



For automatically operating a light upon opening and closing of a door. Has a roller-tip plunger, which rolls across the edge of door as it closes, and prevents friction and strain on switch mechanism.

Enclosed in a rolled steel base.

A small round plate with screw is furnished for placing on edge of door where plunger strikes it.

Dimensions of plate, 3 3/4 x 1 1/4 inches. Mortise required, 2 5/8 x 1 1/8 inches; 1 1/4 inches deep.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
2022	\$318.16	Light On when Door is Open....	5	25	20
2023	318.16	Light On when Door is Closed..	2	10	10

## Perkins Self-Restoring Door Switches

Automatic—Complete with Outlet Box

Single-Pole—6 Amperes, 125 Volts; 3 Amperes, 250 Volts



No. 2355

Complete with brass plate 4 5/8 x 1 1/4-inch and with brass strike plate. Standard finish of plates, brush brass.

Box is 3 5/8 in. long, 1 1/4 in. wide, 2 5/8 in. deep; has a 5/8-in. knockout in bottom, 5/8-in. knockout in one end and 1/8-in. knockout in other end.

Switch is On When Door is Open

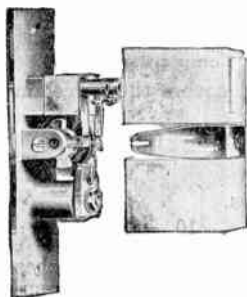
Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
2355	\$353.50	1	25	20

Switch is Off When Door is Open

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs.
2356	\$353.50	1	10	10

Switch only (no box or plates) \$248.16 per 100. Standard package same as complete switch. Plates only (2) \$70.00 per 100. Standard package 10.

## No. 174 Eco Edwards Door Switches



No. 174

Used in places where lights are to be turned on and off automatically by the opening and closing of a door. Finished in polished brass.

Operation: door shut, light off; open door, light on; enter and close door, light stays on; open door for exit, light off; shut door, light stays off.

Standard package, 1. Weight, 11 ounces.

Price, No. 174.....each \$8.50

## No. 2000 Conduit Boxes for Switches

Standard package, 1. Weight, 12 ounces.  
Price, No. 2000.....each \$1.25

**No. 479**

Cat. No.	Each	Description	Wt. Lbs.
479	\$4.50	2-Wire, with Plug and 4 1/8 x 3 x 1 1/2-In. Box	2 3/4
452	1.00	2-Wire Plug Only.....	1/4
1479	5.50	3-Wire, with Plug and 4 1/8 x 3 x 1 1/4-In. Box	3
1453	1.50	3-Wire Plug Only.....	1/4
1579	8.50	4-Wire, with Plug and 4 x 4 x 1 1/2-Inch Box	3 1/2
1463	2.50	4-Wire Plug Only.....	1/2

**Gang Type**

Cat. No.	Each	Description	Wt. Lbs.
495	\$6.60	2-Gang with 2 Plugs and 4 1/8 x 3 x 1 1/2-In. Box	3 1/2
638	9.00	3-Gang with 3 Plugs and 6 1/4 x 3 x 1 1/2-In. Box	4 1/2
639	12.00	4-Gang with 4 Plugs and 8 x 3 1/2 x 1 1/2-In. Box	6 1/4
452	1.00	Plug Only.....	1/4

**Bryant Single-Pole Surface Switches  
With Metal Covers**



With Porcelain Base and Round Composition Handle

**6 Amperes, 125 Volts; 3 Amperes, 250 Volts**

2" Porcelain Base; No. 2777 Round Composition Handle

Diameter of porcelain base, 2 inches.  
Height over cover, 1<sup>13</sup>/<sub>32</sub> inches.  
Height over handle, 1<sup>5</sup>/<sub>16</sub> inches.  
Supporting screw spacing, 1<sup>3</sup>/<sub>8</sub> inches.

Nos. 2220 and 2035 can be supplied, on special order, at no advance in price, on a base 1<sup>3</sup>/<sub>4</sub> inches in diameter, which is the diameter of the metal cover.

Cat. No.	Per 100	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2220	\$36.00	Solid	10	100	24
2000	36.00	Slotted	10	100	25
2035	42.00	Solid, Indicating	10	100	25
2047	42.00	Slotted, Indicating	10	100	25

2<sup>1</sup>/<sub>4</sub>" Porcelain Base; No. 2777 Round Composition Handle

Diameter of porcelain base, 2<sup>1</sup>/<sub>4</sub> inches.  
Height over cover, 1<sup>13</sup>/<sub>32</sub> inches.  
Height over handle, 1<sup>5</sup>/<sub>16</sub> inches.  
Supporting screw spacing, 1<sup>1</sup>/<sub>2</sub> inches.

2254	\$56.56	Solid, Indicating	10	100	31
2255	56.56	Slotted, Indicating	10	100	31

**10 Amperes, 125 Volts; 5 Amperes, 250 Volts**

2<sup>7</sup>/<sub>16</sub>" Porcelain Base; No. 2778 Round Composition Handle

Diameter of porcelain base, 2<sup>7</sup>/<sub>16</sub> inches.  
Height over cover, 1<sup>5</sup>/<sub>16</sub> inches.  
Height over handle, 2<sup>1</sup>/<sub>4</sub> inches.  
Supporting screw spacing, 1<sup>3</sup>/<sub>4</sub> inches.

No. 2036 can be supplied, on special order, at no advance in price, on a base 2<sup>1</sup>/<sub>4</sub> inches in diameter, which is the diameter of the metal cover.

2036	\$84.00	Solid, Indicating	10	100	35
2048	84.00	Slotted, Indicating	10	100	39

**80 Amperes, 125 Volts; 10 Amperes, 250 Volts**

3" Porcelain Base; No. 2780 Flat Composition Handle

These switches can be used very satisfactorily for inductive loads.

Diameter of porcelain base, 3 inches.  
Height over cover, 1<sup>3</sup>/<sub>4</sub> inches.  
Height over handle, 2<sup>5</sup>/<sub>8</sub> inches.  
Supporting screw spacing, 2<sup>3</sup>/<sub>8</sub> inches.

2833	\$155.54	Solid, Indicating	1	10	6
2834	155.54	Slotted, Indicating	1	10	6

**6 Amperes, 125 Volts; 3 Amperes, 250 Volts**

1<sup>13</sup>/<sub>16</sub>" Porcelain Base; No. 2777 Round Composition Handle

The metal cover extends over and covers the porcelain base.

Diameter of porcelain base, 1<sup>13</sup>/<sub>16</sub> inches.  
Height over cover, 1<sup>1</sup>/<sub>2</sub> inches.  
Height over handle, 1<sup>3</sup>/<sub>32</sub> inches.  
Supporting screw spacing, 1<sup>3</sup>/<sub>8</sub> inches.

2430	\$56.56	Solid, Indicating	10	100	25
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Standard finish on all metal covers of surface switches unless otherwise noted is polished nickel which will be supplied when finish is not specified.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

**Bryant Double-Pole Surface Switches  
With Metal Covers**



With Porcelain Base and Flat Composition Handle

**10 Amperes, 125 Volts; 5 Amperes, 250 Volts**  
2" Porcelain Base; No. 2777 Round Composition Handle

Diameter of porcelain base, 2 inches.  
Height over cover, 1<sup>5</sup>/<sub>16</sub> inches.  
Height over handle, 2<sup>1</sup>/<sub>16</sub> inches.  
Supporting screw spacing, 1<sup>3</sup>/<sub>8</sub> inches.

No. 2393 can be supplied, on special order, at no advance in price, on a base 1<sup>3</sup>/<sub>4</sub> inches in diameter, which is the diameter of the metal cover.

Cat. No.	Per 100	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2393	\$99.54	Solid, Indicating	10	100	27
2394	99.54	Slotted, Indicating	10	100	29

**10 Amperes, 250 Volts**

2<sup>7</sup>/<sub>16</sub>" Porcelain Base, No. 2778 Round Composition Handle

Diameter of porcelain base, 2<sup>7</sup>/<sub>16</sub> inches.  
Height over cover, 1<sup>5</sup>/<sub>16</sub> inches.  
Height over handle, 2<sup>1</sup>/<sub>4</sub> inches.  
Supporting screw spacing, 1<sup>3</sup>/<sub>4</sub> inches.

No. 2038 can be supplied, on special order, at no advance in price, on a base 2<sup>1</sup>/<sub>4</sub> inches in diameter, which is the diameter of the metal cover.

2038	\$118.22	Solid, Indicating	10	100	38
2050	118.22	Slotted, Indicating	10	100	38

**20 Amperes, 250 Volts**

3<sup>1</sup>/<sub>32</sub>" Porcelain Base, No. 2779 Flat Composition Handle

Diameter of porcelain base, 3<sup>1</sup>/<sub>32</sub> inches.  
Height over cover, 1<sup>23</sup>/<sub>32</sub> inches.  
Height over handle, 2<sup>1</sup>/<sub>32</sub> inches.  
Supporting screw spacing, 2<sup>5</sup>/<sub>16</sub> inches.

2040	\$233.32	Solid, Indicating	1	30	18
2052	233.32	Slotted, Indicating	1	30	21

**30 Amperes, 250 Volts**

3<sup>1</sup>/<sub>16</sub>" Porcelain Base; No. 2780 Flat Composition Handle

Diameter of porcelain base, 3<sup>1</sup>/<sub>16</sub> inches.  
Height over cover, 1<sup>5</sup>/<sub>16</sub> inches.  
Height over handle, 2<sup>3</sup>/<sub>4</sub> inches.  
Supporting screw spacing, 2<sup>5</sup>/<sub>16</sub> inches.

The holes in these switches are elongated to provide also 2<sup>3</sup>/<sub>4</sub>-inch spacing, making them suitable for attachment to 3<sup>1</sup>/<sub>4</sub>-inch outlet boxes, Type WD Octagonal Unilets, Type 700 Adaptiboxes, and Type SE Condulets.

2042	\$279.98	Solid, Indicating	1	30	30
2054	279.98	Slotted, Indicating	1	30	29

**5 Amperes, 125 Volts; 5 Amperes, 250 Volts**

1<sup>29</sup>/<sub>32</sub>" Porcelain Base; No. 2777 Round Composition Handle

Diameter of cover, 1<sup>29</sup>/<sub>32</sub> inches.  
Height over cover, 1<sup>17</sup>/<sub>32</sub> inches.  
Height over handle, 2<sup>1</sup>/<sub>16</sub> inches.  
Supporting screw spacing, 1<sup>3</sup>/<sub>8</sub> inches.

2618	\$101.80	Solid, Indicating	10	100	17
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**Double-Throw—10 Amps., 125 Volts; 10 Amps., 250 Volts**

2<sup>11</sup>/<sub>16</sub>" Porcelain Base; No. 2779 Flat Composition Handle Operating, Circuit 1, Off, Circuit 2, Off

Diameter of porcelain base, 2<sup>11</sup>/<sub>16</sub> inches.  
Height over cover, 1<sup>29</sup>/<sub>32</sub> inches.  
Height over handle, 2<sup>5</sup>/<sub>8</sub> inches.  
Supporting screw spacing, 2<sup>1</sup>/<sub>32</sub> inches.

2613	\$353.50	Solid, Indicating	1	10	5
2614	353.50	Slotted, Indicating	1	10	6

Standard finish on all metal covers of surface switches unless otherwise noted is polished nickel which will be supplied when finish is not specified.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

## Bryant 3 and 4-Point Surface Switches

With Metal Covers, Porcelain Bases, and Round Composition Handles



### 3-Point—3 Amps., 125 V.; 1 Amp., 250 V.

Diameter of base, 2 inches.  
 Height over cover,  $1\frac{3}{8}$  inches.  
 Height over handle,  $1\frac{5}{16}$  inches.  
 Supporting screw spacing,  $1\frac{3}{8}$  inches.  
 No. 2455 can be supplied, on special order, at no advance in price, on a base  $1\frac{3}{4}$  inches in diameter, which is the diameter of the metal cover.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2455	\$67.88	Solid	10	100	27
2456	67.88	Slotted	10	100	26

### 3-Point—5 Amps., 125 V.; 3 Amps., 250 V.

Diameter of base,  $2\frac{1}{4}$  inches.  
 Height over cover,  $1\frac{13}{32}$  inches.  
 Height over handle,  $1\frac{3}{16}$  inches.  
 Supporting screw spacing,  $1\frac{1}{2}$  inches.

2175	\$79.18	Solid	10	100	18
2027	79.18	Slotted	10	100	33

### 3-Point—10 Amps., 125 V.; 5 Amps., 250 V.

Diameter of base,  $2\frac{1}{8}$  inches.  
 Height over cover,  $1\frac{1}{8}$  inches.  
 Height over handle,  $2\frac{1}{4}$  inches.  
 Supporting screw spacing,  $1\frac{1}{16}$  inches.  
 No. 2176 can be supplied, on special order, at no advance in price, on a base  $2\frac{1}{4}$  inches in diameter, which is the diameter of the metal cover.

2176	\$118.22	Solid	10	50	18
2030	118.22	Slotted	10	50	18

### 4-Point—5 Amps., 125 V.; 2 Amps., 250V.

Four-point switches are used in connection with two 3-point switches where current is to be controlled from any one of more than two points. A 4-point switch is installed between the 3-point switches at each additional point.

Can also be used individually as pole-changing switches.  
 Diameter of base,  $2\frac{1}{8}$  inches.  
 Height over cover,  $1\frac{1}{8}$  inches.  
 Height over handle,  $2\frac{1}{4}$  inches.  
 Supporting screw spacing,  $1\frac{3}{4}$  inches.

No. 2183 can be supplied, on special order, at no advance in price, on a base  $2\frac{1}{4}$  inches in diameter, which is the diameter of the metal cover.

2183	\$254.52	Solid	10	30	11
2033	254.52	Slotted	10	30	19

Standard finish on metal covers is polished nickel which will be supplied when the finish is not specified.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

## Bryant Triple-Pole Surface Switches

With Metal Cover

10 Amperes, 125 Volts; 10 Amperes, 250 Volts

$2\frac{1}{16}$ " Porcelain Base; No. 2779 Wing Composition Handle



Diameter of base,  $2\frac{1}{16}$  inches.  
 Height over cover,  $1\frac{29}{32}$  inches.  
 Height over handle,  $2\frac{5}{8}$  inches.  
 Supporting screw spacing,  $2\frac{1}{32}$  inches.  
 Standard finish on metal covers unless otherwise noted is polished nickel which will be supplied when the finish is not specified.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2046	\$311.08	Solid, Indicating	1	10	5
2634	311.08	Slotted, Indicating	1	10	5

## Bryant Electrolier Surface Switches

With Metal Covers, Porcelain Bases, and Round Composition Handles

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Diameter of base,  $2\frac{1}{16}$  inches.  
 Height over cover,  $1\frac{3}{16}$  inches.  
 Height over handle,  $2\frac{1}{4}$  inches.  
 Supporting screw spacing,  $1\frac{3}{4}$  inches.



### 2-Circuit, Operating 1, 2, 1 & 2, Off

First position, circuit 1 on; 2nd position, circuit 1 off and circuit 2 on; 3rd position, circuits 1 and 2 on; 4th position, all circuits off.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2216	\$139.98	Solid	10	10	3
2215	139.98	Slotted	10	10	4
2188	155.54	Solid, Indicating	10	10	3
2074	155.54	Slotted, Indicating	10	10	4

### 3-Circuit, Operating 1, 1 & 2, 1 & 2 & 3, Off

First position, circuit 1 on; 2nd position, circuits 1 and 2 on; 3rd position, circuits 1 and 2 and 3 on; 4th position, all circuits off.

2187	\$155.54	Solid, Indicating	10	10	4
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Standard finish on metal covers is polished nickel and will be supplied when the finish is not specified.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

## Bryant 3-Speed Motor Control Switches

Operating 1, 2, 3, Off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



First position, circuit 1 on; 2nd position, circuit 1 off and circuit 2 on; 3rd position, circuits 1 and 2 off, circuit 3 on; 4th position, all circuits off.

Diameter of base,  $2\frac{1}{8}$  inches.  
 Height over cover,  $1\frac{1}{8}$  inches.  
 Height over handle,  $2\frac{1}{4}$  inches.  
 Supporting screw spacing,  $1\frac{3}{4}$  inches.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2666	\$155.54	Solid, Indicating	10	10	4
2667	155.54	Slotted, Indicating	10	10	4

## Bryant Reversible Triple-Pole Expulsion Type Surface Switches

For Inductive Loads

35 Amperes, 125 Volts; 20 Amperes, 250 Volts; 10 Amperes, 600 Volts  
 2 H.P. 3-Phase, 250-600 Volts



No. 781

For controlling 3-phase a.c. motors up to and including 2 h.p.

The switch mechanism has a composition base and handle which serves to indicate the position of the switch. Two covers are available: One is cast iron, lined, finished black, designed to be attached to conduit fittings made by The Crouse-Hinds Co., The Appleton Electric Co., The Columbia Metal Box Co., and the V. V. Fittings Co.; the other cover is stamped steel, finished black, with insulating lining.

The cast iron cover is dust-tight and ideal for use in flour and textile mills.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
780	\$349.96	Switch Only, No Cover	1	10	13
781	622.16	Switch with Black Cast Iron Cover, Indicating	1	10	40
782	388.86	Switch with Stamped Steel Cover, Indicating	1	10	16
783	272.20	Cover Only, Black, Cast Iron	1	10	31



**Bryant Surface Switches**

With Porcelain Bases, Covers and Handles



Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 Universal Rotary Switch Lock Attachment.

**Single-Pole**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts  
Diameter base, 2 inches. Height over cover, 1<sup>9</sup>/<sub>16</sub> inches; over handle, 2<sup>5</sup>/<sub>16</sub> inches. Screw spacing, 1<sup>3</sup>/<sub>8</sub> inches.

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2601	\$45.24	Solid	1	100	41
2602	45.24	Slotted	1	100	40
2603	50.90	Solid, Indicating	1	100	41
2604	50.90	Slotted, Indicating	1	100	40

**10 Amperes, 125 Volts; 5 Amperes, 250 Volts**

Diameter base, 2<sup>1</sup>/<sub>2</sub> inches. Height over cover, 1<sup>5</sup>/<sub>8</sub> inches; over handle, 2<sup>3</sup>/<sub>8</sub> inches. Screw spacing, 1<sup>3</sup>/<sub>4</sub> inches.

2435	\$96.44	Solid, Indicating	1	30	16
2754	96.44	Slotted, Indicating	1	30	15

**Double-Pole**

**10 Amperes, 125 Volts; 5 Amperes, 250 Volts**

Diameter base, 2 inches. Height over cover, 1<sup>9</sup>/<sub>16</sub> inches; over handle, 2<sup>5</sup>/<sub>16</sub> inches. Screw spacing, 1<sup>3</sup>/<sub>8</sub> inches.

2609	\$105.76	Solid, Indicating	1	10	4
2610	105.76	Slotted, Indicating	1	10	4

**10 Amperes, 125 Volts; 10 Amperes, 250 Volts**

Diameter base, 2<sup>1</sup>/<sub>2</sub> inches. Height over cover, 1<sup>5</sup>/<sub>8</sub> inches; over handle, 2<sup>3</sup>/<sub>8</sub> inches. Screw spacing, 1<sup>3</sup>/<sub>4</sub> inches.

2438	\$130.66	Solid, Indicating	1	10	5
2764	130.66	Slotted, Indicating	1	10	4

**3-Point**

**5 Amperes, 125 Volts; 3 Amperes, 250 Volts**

Diameter base, 2 inches. Height over cover, 1<sup>9</sup>/<sub>16</sub> inches; over handle, 2<sup>5</sup>/<sub>16</sub> inches. Screw spacing, 1<sup>3</sup>/<sub>8</sub> inches.

2605	\$73.52	Solid	1	10	4
2606	73.52	Slotted	1	10	4

**No. 2077 Bryant Expulsion Type Surface Switches**

For Inductive Loads and Railway Circuits

Single-Pole, Fusible, with Porcelain Base, Cover and Handle

3 Amperes, 600 Volts



An open link fuse is laid in a groove near the edge of the cover.

Has No. 2781 porcelain handle. Slotted, indicating base. Diameter, 3<sup>3</sup>/<sub>8</sub> inches.

Height over cover, 1<sup>5</sup>/<sub>8</sub> inches. Height over handle, 2<sup>3</sup>/<sub>8</sub> inches. Supporting screw spacing, 1<sup>15</sup>/<sub>16</sub> inches.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2077	\$226.24	1	10	10

**Bryant Expulsion Type Electric Railway Surface Switches**

Single-Pole, Brown Porcelain Base, Cover, Handle

3 Amperes, 600 Volts

Connections for one enclosed fuse No. 2316.

Has No. 2782 brown porcelain handle.

Solid, indicating base, size 3<sup>7</sup>/<sub>8</sub>x3 inches.

Height over cover, 1<sup>23</sup>/<sub>32</sub> inches; over handle, 2<sup>1</sup>/<sub>2</sub> inches.

Screw spacings, 3<sup>1</sup>/<sub>8</sub>x<sup>3</sup>/<sub>8</sub> in.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
2315	\$230.28	1	25	37

**Ferrule Type Cartridge Fuse**  
For use with No. 2315.

Enclosed, indicating base.

Length, 3<sup>3</sup>/<sub>16</sub> inches.

Diameter, <sup>9</sup>/<sub>16</sub> inch.



No. 2315

2316	\$20.20	25	100	4
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**Bryant Expulsion Type Surface Switches**

For Inductive Loads and Electric Railway Circuits With Metal Cover



No. 2773

Designed with barriers between parts of opposite polarity which are effective in limiting the arc formed when the circuit is broken.

The 600-volt rating only is N.E.C.S.

It is not advisable, though possible, to convert 600-volt switches to lock switches by the use of No. 2384 Universal Lock Attachment.

The window in the cover of indicating switches is located so that, when the switch is mounted on a wall above eye level, the indications can be read right side up under the handle.

Standard finish on metal covers is polished nickel which will be supplied when the finish is not specified.

**Single-Pole**

10 Amperes, 250 Volts; 5 Amperes, 600 Volts  
2<sup>7</sup>/<sub>16</sub>" Porcelain Base; No. 2781 Round Porcelain Handle  
Height over cover, 1<sup>9</sup>/<sub>16</sub> inches; over handle, 2<sup>5</sup>/<sub>16</sub> inches.

Cat. No.	Per 100	Style Base	Screw Spacing In.	Car-ton	Std. Pkg.	Wt. Lbs.
2049	\$116.68	Solid, Indicating	1 <sup>3</sup> / <sub>4</sub>	1	50	20
2103	116.68	Slotted, Indicating	1 <sup>3</sup> / <sub>4</sub>	1	50	23

**20 Amperes, 250 Volts; 10 Amperes, 600 Volts  
3<sup>1</sup>/<sub>32</sub>" Porcelain Base; No. 2784 Flat Porcelain Handle**

Height over cover, 1<sup>3</sup>/<sub>4</sub> inches; over handle, 2<sup>23</sup>/<sub>32</sub> inches.

2060	\$260.98	Solid, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	38
2066	260.98	Slotted, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	41

**30 Amperes, 250 Volts; 20 Amperes, 600 Volts  
3<sup>3</sup>/<sub>16</sub>" Porcelain Base; No. 2784 Flat Porcelain Handle**

Height over cover, 1<sup>15</sup>/<sub>16</sub> inches; over handle, 2<sup>7</sup>/<sub>8</sub> inches.

2303	\$307.04	Solid, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	53
2304	307.04	Slotted, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	53

**Double-Pole**

10 Amperes, 250 Volts; 5 Amperes, 600 Volts  
2<sup>7</sup>/<sub>16</sub>" Porcelain Base; No. 2781 Round Porcelain Handle  
Height over cover, 1<sup>9</sup>/<sub>16</sub> inches; over handle, 2<sup>5</sup>/<sub>16</sub> inches.

2773	\$153.52	Solid, Indicating	1 <sup>3</sup> / <sub>4</sub>	1	50	25
2774	153.52	Slotted, Indicating	1 <sup>3</sup> / <sub>4</sub>	1	50	25

**20 Amperes, 250 Volts; 10 Amperes, 600 Volts  
3<sup>1</sup>/<sub>32</sub>" Porcelain Base; No. 2784 Flat Porcelain Handle**

Height over cover, 1<sup>3</sup>/<sub>4</sub> inches; over handle, 2<sup>23</sup>/<sub>32</sub> inches.

2447	\$291.68	Solid, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	43
2448	291.68	Slotted, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	40

**3-Point**

10 Amperes, 250 Volts; 5 Amperes, 600 Volts  
2<sup>7</sup>/<sub>16</sub>" Porcelain Base; No. 2781 Round Porcelain Handle  
Height over cover, 1<sup>9</sup>/<sub>16</sub> inches; over handle, 2<sup>5</sup>/<sub>16</sub> inches.

2179	\$138.16	Solid	1 <sup>3</sup> / <sub>4</sub>	1	50	20
2100	138.16	Slotted	1 <sup>3</sup> / <sub>4</sub>	1	50	20
2413	153.52	Solid, Indicating	1 <sup>3</sup> / <sub>4</sub>	1	50	20
2414	153.52	Slotted, Indicating	1 <sup>3</sup> / <sub>4</sub>	1	50	21

**20 Amperes, 250 Volts; 10 Amperes, 600 Volts  
3<sup>1</sup>/<sub>32</sub>" Porcelain Base; No. 2784 Flat Porcelain Handle**

Height over cover, 1<sup>3</sup>/<sub>4</sub> inches; over handle, 2<sup>23</sup>/<sub>32</sub> inches.

2397	\$260.98	Solid	2 <sup>3</sup> / <sub>16</sub>	1	50	40
2398	260.98	Slotted	2 <sup>3</sup> / <sub>16</sub>	1	50	40
2415	276.34	Solid, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	40
2416	276.34	Slotted, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	20

**4-Point**

20 Amperes, 250 Volts; 10 Amperes, 600 Volts  
3<sup>1</sup>/<sub>32</sub>" Porcelain Base; No. 2784 Flat Porcelain Handle  
Height over cover; 1<sup>3</sup>/<sub>4</sub> inches; over handle, 2<sup>23</sup>/<sub>32</sub> inches.

2721	\$276.34	Solid	2 <sup>3</sup> / <sub>16</sub>	10	20	16
2722	276.34	Slotted	2 <sup>3</sup> / <sub>16</sub>	10	20	16

**2-Circuit, Operating 1, Off, 2, Off**

20 Amperes, 250 Volts; 10 Amperes, 600 Volts  
3<sup>1</sup>/<sub>32</sub>" Porcelain Base; No. 2784 Flat Porcelain Handle

These switches will break the circuit without the use of an additional switch and are especially adapted for use on electric cars as headlight switches and to control the interior lights.

Height over cover, 1<sup>3</sup>/<sub>4</sub> inches; over handle, 2<sup>23</sup>/<sub>32</sub> inches.

2411	\$276.34	Solid, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	41
2412	276.34	Slotted, Indicating	2 <sup>3</sup> / <sub>16</sub>	1	50	36

## Bryant Standard Heater Type and Standard Range Type Switches



3-Heat Switch

Surface heater switch, reversible rotation, with indicating handle.

Nickel silver angle cover with raised polished indications on japanned black background.

Solid base.

### Single-Pole

#### Series-Parallel, 3-Heat—Operating High, Medium, Low, Off

Cat. No.	Per 100	AMPERES		Base Diam. Inches	Mounting Screw Centers Inches	Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
		125 Volts	250 Volts					
6249	\$160.00	6	3	2 $\frac{1}{32}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	1	10	4
6259	180.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	1	10	4
6269	200.00	15	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	1	10	6
6279	220.00	20	10	2 $\frac{13}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	1	10	8
6289	320.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	1	10	13
6299	400.00	36	18	3 $\frac{3}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	19
6209	500.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	..

#### Operating On and Off

6247	\$120.00	6	3	2 $\frac{1}{32}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	1	10	4
6257	160.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	1	10	4
6267	180.00	15	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	1	10	6
6277	220.00	20	10	2 $\frac{13}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	1	10	7
6287	300.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	1	10	14
6269	200.00	36	18	3 $\frac{3}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	6
6207	440.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	19

### Double-Pole

#### Series Parallel, 3-Heat—Operating High, Medium, Low, Off

6258	\$145.92	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	1	10	5
6278	260.00	20	10	2 $\frac{13}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	1	10	8
6288	360.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	1	10	13
6298	520.00	36	18	3 $\frac{3}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	17
6208	620.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	19

#### Operating On and Off

6246	\$160.00	6	3	2 $\frac{1}{32}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	1	10	5
6256	180.00	10	5	2 $\frac{3}{16}$	1 $\frac{1}{16}$ to 1 $\frac{1}{2}$	1	10	4
6266	200.00	15	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	1	10	6
6276	220.00	20	10	2 $\frac{13}{16}$	1 $\frac{21}{32}$ to 1 $\frac{3}{4}$	1	10	7
6286	320.00	30	15	3 $\frac{5}{16}$	2 $\frac{1}{16}$ to 2 $\frac{3}{16}$	1	10	7
6296	400.00	36	18	3 $\frac{3}{8}$	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	17
6206	500.00	42	21	4	2 $\frac{5}{8}$ to 2 $\frac{3}{4}$	1	10	19

These switches can be furnished with flat top covers instead of angle covers at the same prices. Specify by changing the second digit of the catalogue number from 2 to 3. Viz. No. 6349—instead of No. 6249, etc.

## Bryant Surface Tumbler Switches

125-250 Volts

With Metal Cover



No. 3911

Diameter of base, 2 $\frac{1}{16}$  inches.  
Height over cover, 1 $\frac{1}{2}$  inches.  
Height over handle, 2 inches.  
Supporting screw spacing, 1 $\frac{3}{4}$  inches.  
Standard finish on metal covers is polished nickel. Covers in other finishes, except silver and gold, can be furnished on special order.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
			125 Volts	250 Volts			
3911	\$84.00	S. P., Indicating....	10	5	10	100	37
3912	118.22	D. P., Indicating...	10	10	10	100	39
3913	118.22	3-Point.....	10	5	10	50	18
3914	295.52	4-Point.....	10	5	2	10	4

### With Brown Bakelite Covers

Diameter of base, 2 $\frac{1}{16}$  inches.  
Height over cover, 1 $\frac{1}{16}$  inches; over handle, 2 inches.  
Supporting screw spacing, 1 $\frac{3}{4}$  inches.

3911-B	\$84.00	S. P., Indicating....	10	5	10	100	37
3912-B	118.22	D. P., Indicating...	10	10	10	100	39
3913-B	118.22	3-Point.....	10	5	10	50	18
3914-B	295.52	4-Point.....	10	5	2	10	4

## Hemco Switches

With Templus Cover  
Surface Switches



No. H21

Diameter of base, 2 inches.  
Height over cover, 1 $\frac{1}{16}$  inches.  
Height over handle, 1 $\frac{13}{16}$  inches.  
Screw spacing, 1 $\frac{3}{8}$  inches.  
Carton, 10. Standard package, 50.

Cat. No.	Per 100	Description	Std. Pkg.	Wt. Lbs.
H23	31.58	3-Point.....	11	11

### For Outlet Boxes

Carton, 10. Standard package, 50.



No. H31

H31	\$23.16	For 3/4-Inch Box Single-Pole.....	26
H33	37.90	3-Point.....	26
H41	\$25.26	For 4-Inch Box Single-Pole.....	34
H43	40.00	3-Point.....	30

## Hemco Pendant Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



For kitchen lighting units which are placed out of reach. Takes any standard parallel or tandem blade attachment plug cap.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
H9081	\$60.60	10	50	9

## Bryant Porcelain Sub-Bases

For devices whose bases are 2 $\frac{5}{16}$  inches in maximum diameter to 1 $\frac{7}{8}$  inches minimum diameter and having screw spacings from 3/4 to 1 $\frac{3}{8}$  inches.  
Carton, 10. Standard package, 100.



No. 2383 or 2222

Cat. No.	Per 100	Description	Std. Pkg.	Wt. Lbs.
2381	\$8.42	For Surface Work.....	19	19
2383	8.42	For Molding Work.....	19	19

For devices whose bases are 2 $\frac{5}{8}$  inches in maximum diameter to 2 $\frac{1}{4}$  inches minimum diameter and having screw spacings from 3/4 to 1 $\frac{3}{4}$  inches.  
Carton, 10. Standard package, 100.



No. 2381 or 2357

2357	\$8.42	For Surface Work...	33
2222	8.42	For Molding Work..	26

**Bryant Pull Switches**



Ceiling Type

Each switch is supplied with short chain and connector and 8 feet of heavy cord and large black composition ball.

Standard finish on metal covers is polished nickel which will be supplied when the finish is not specified.



Wall Type

**Ceiling Type with Porcelain Bases and Templus Covers**

Non-Indicating

Diameter of base, 2 5/8 inches. Height over cover, 2 1/8 inches. Supporting screw spacing, 1 3/4 inches.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Pkg. Lbs.
			125 Volts	250 Volts			
2387	\$155.54	Single-Pole, Solid...	10	5	10	30	15
2309	155.54	Single-Pole, Slotted.	10	5	10	30	15
2396	183.54	Double-Pole, Solid...	10	10	10	10	5
2314	183.54	Double-Pole, Slotted.	10	10	10	10	5
2388	199.10	3-Point, Solid.....	10	5	10	10	5
2310	199.10	3-Point, Slotted....	10	5	10	10	5
2389	376.40	4-Point, Solid.....	5	2	1	10	5
2311	376.40	4-Point, Slotted....	5	2	1	10	27

Electroliner, 2 Circuit, Operating 1, 2, 1 and 2 Off

2390	\$220.86	Solid.....	10	5	1	10	8
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Electroliner, 3-Circuit, Operating 1, 1 & 2, 1 & 2 & 3, Off

2395	\$220.86	Solid.....	10	5	1	10	8
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3-Speed Motor Control, Operating 1, 2, 3, Off

Diameter of base, 2 1/4 inches. Diameter of cover, 2 1/4 inches. Height over cover, 2 1/2 inches. Supporting screw spacing, 1 5/8 inches.

2863	\$220.86	Solid.....	10	5	10	10	5
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For 3/4 and 4-Inch Outlet Boxes

Diameter of base, 4 5/8 inches.

Supporting screw spacings, 2 3/4 and 3 1/2 inches.

2769	\$194.42	Single-Pole.....	10	5	1	10	12
2770	222.42	Double-Pole.....	10	10	1	10	13

**Ceiling Type with Porcelain Bases and Bakelite Covers**

Non-Indicating, with Cadmium-Plated Covers For 3/4-Inch Outlet Boxes

Diameter of cover, 3 1/2 inches. Height of cover, 1 1/2 inches. Screw spacing, 2 3/4 inches. Porcelain base, 2 1/4 inches in diameter, extends 5/16 inch below box cover.

4331	\$163.32	Single-Pole.....	10	5	10	30	6
4332	191.32	Double-Pole.....	10	10	10	30	6
4333	206.86	3-Point.....	10	5	10	10	6
4334	384.18	4-Point.....	5	2	1	10	6

For 4-Inch Outlet Boxes

Diameter of cover, 4 3/8 inches. Height of cover, 1 1/2 inches. Screw spacing, 3 3/8 inches. Porcelain base, 2 1/4 inches in diameter, extends 5/16 inch below box cover.

4341	\$166.42	Single-Pole.....	10	5	10	30	8
4342	194.42	Double-Pole.....	10	10	10	30	8
4343	209.98	3-Point.....	10	5	10	10	8
4344	387.30	4-Point.....	5	2	1	10	8

**Wall Type with Porcelain Bases and Metal Covers**

Non-Indicating

Diameter of base, 2 9/16 inches. Height over cover, 2 1/2 inches. Supporting screw spacing, 1 3/4 inches.

2546	\$155.54	Single-Pole, Solid...	10	5	10	30	16
2547	155.54	Single-Pole, Slotted.	10	5	10	30	15
2565	183.54	Double-Pole, Solid...	10	10	10	10	5
2566	183.54	Double-Pole, Slotted	10	10	10	10	5
2549	199.10	3-Point, Slotted....	10	5	10	10	5
2560	376.40	4-Point, Slotted....	5	2	1	10	5

**Bryant Type T Pendent and Cord Switches**

With Metal Shells

6 Amperes, 125 Volts  
3 Amperes, 250 Volts

Single-Pole  
Push-Through Buttons



No. 2572

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
2572	\$58.88	Pendent Cap...	10	100	15
2574	93.32	3/8-Inch Cap....	10	100	16



No. 2370

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs.
2370	\$77.78	Pendent Cap...	10	100	28
2270	93.32	3/8-Inch Cap....	10	100	27

Straight-Through Switch, Single-Pole Push-Through Buttons

2592	\$42.42	1 3/8-Inch Cord Holes.....	10	50	7
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**Bryant Rotary Switch Handles**

All Bryant Rotary Switch Handles, lock attachments, and switch center posts, except heater and reversible switches, are threaded alike, regardless of the size of the switch. The handles differ in external shape and size for purposes of leverage appropriate to the size of the switch.

In an emergency, any available handle can be attached to any switch. The list below shows in a general way what handles are suitable for various sizes of switches. Refer to the switch lists for definite information regarding handles.



No. 2781



No. 2779



No. 2780

Round, White Porcelain

Cat. No.	Per 100	SIZE SWITCH IN AMPS.		Std. Pkg.
		125 and 250 Volts	250 and 600 Volts	
2781	\$12.00	3, 5, 10	3, 5	100
2779	12.00	20	...	100
2780	12.00	30	...	100

Flat, Composition

Any switch, regularly equipped with any of the handles listed above, can be supplied, on special order, with any other of the handles listed without extra charge.

**Bryant Heater Switch Handles**



No. 6201

Porcelain Indicating Handles for Nos. 6200 and 6300 Lines of Reversible Switches



No. 6203

Cat. No.	Per 100	For Switch Nos.		Std. Pkg.
		6201	6203	
6201	\$22.80	6249, 6258, 6259, 6269, 6247, 6257, 6267, 6246, 6256, 6266	100	
6202	22.80	6279, 6278, 6277, 6276	100	
6203	22.80	6289, 6288, 6287, 6286	100	
6204	22.80	6299, 6209, 6298, 6208, 6207, 6207, 6296, 6206	100	

**Bryant Lock Attachments and Keys**

**Universal Rotary Switch Lock Attachment and Key**

By substituting this lock attachment for the handle on any Bryant Rotary Switch, except heater and reversible switches, lock switches are obtained. Of polished nickel.

The key is used to operate the switch through the lock attachment and also to install or remove the lock attachment.



No. 2384



No. 2126



No. 3950



No. 2299

Cat. No.	Per 100	Description	Std. Pkg.
2384	\$22.62	Lock Attachment.....	100
2126	14.14	Key for Rotary Lock Switch.....	100

**Keys for Tumbler and Push Lock Switches**

One of these keys is furnished without charge with each lock switch.

3950	\$14.14	For Tumbler Lock Switch	100
2299	14.14	For All Push Lock Switches	100



## Bryant Type O Pull and Push Switches



**With Metal Shells**  
10 Amperes, 125 Volts  
5 Amperes, 250 Volts

Standard finish is brush brass which will be furnished when no finish is specified.

### Pull Single-Pole

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
2473	\$183.82	3/8-Inch Cap...	10	30	12

### Electrifier and Motor Control

Nos. 2473 and 2480	2476	\$183.82	2-Circuit, 1, 2, 1 and 2 Off....	10	10	5
	2480	183.82	3-Speed, 1, 2, 3, Off.....	10	10	4

### Push Single-Pole

2440	\$169.68	Pendent Cap...	10	30	12
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### Double-Pole

2421	\$169.68	Pendent Cap...	10	10	3
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### 3-Point

Nos. 2417, 2421 and 2440	2417	\$169.68	Pendent Cap...	10	10	3
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## No. 2842 Bryant Canopy Pull Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Each switch is provided with two washers for mounting in outlet boxes.

Furnished with short chain and 4 feet of cord.

Stem, 1 3/32 inch long.

Has brown bakelite body, brass shell, and screw terminals.

Standard finish of exposed parts is brush brass which will be furnished when no finish is specified. Flash silver, bronze, or black, when specified, will be furnished without additional charge.

Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
2842	\$70.00	10	100	17

## Levolier Conduit Box and Fixture Switches

### Nos. 41-43 Thin Model

6 Amperes

Particularly adaptable to the modern type of ceiling canopy. Easily and quickly installed.

All switches except No. 41-PL are equipped with 8-foot cord, connector and brass bell.

Standard finishes are brass and Jap bronze; special finishes may be had by order.

Diameter of stem, 3/16-inch.

In cartons of 10; standard package, 100.

Cat. No.	Each	41	*41-PL	42	43
		\$ .80	.74	.82	.82
Length of Stem	inches	3/16	3/16	3/8	3/4
Weight, Standard Package	pounds	12	9	12	13

\*PL—plain lever without chain.



### No. 39 Thin Model

6 Amperes

Can be used on any chain fixture and between any two links, without renewing or changing fixture length.

Carton, 10. Standard package, 100; weight, 16 pounds.

No. 39, Brass and Jap Bronze Finishes.  
.....each \$ .80

## Bryant Flush Tumbler Switches

Porcelain Cups, Brown Composition Handles  
With Plaster Ears



No. 3951

Dimensions of porcelain cups: Length, 2 1/16 inches; width, Nos. 3951 and 3951-L, 1 1/2 inches, others 1 1/16 inches; depth, 1 3/32 inches.

Supporting screw spacing, 3 3/32 inches.

Screws for mounting are furnished.

One key is furnished with each lock switch.

When ordering combination plates, specify S sections to accommodate these switches.

These switches, on special order, can be furnished with black handles (lock switches with black bosses) without extra charge.

### Flush Tumbler Switches

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Pkg.
			125 Volts	250 Volts			
3951	\$32.00	S. P. Indicating....	10	5	10	100	31
3952	84.00	D. P. Indicating....	10	10	10	50	17
3953	50.00	3-Point.....	10	5	10	50	17
3954	280.00	4-Point.....	5	2	10	10	3
3955	113.12	D. P. Indicating....	20	10	10	10	3
3920	84.00	S. P. Quadruple Break, Indicating.	20	10	10	50	16

### Flush Tumbler Lock Switches

3951-L	\$112.28	S. P. Indicating....	10	5	10	100	31
3952-L	147.00	D. P. Indicating....	10	10	10	50	17
3953-L	133.48	3-Point.....	10	5	10	50	17
3954-L	345.80	4-Point.....	5	2	10	10	3
3955-L	176.12	D. P. Indicating....	20	10	10	10	3
3920-L	147.00	S. P. Quadruple Break, Indicating.	20	10	10	50	16

## Bryant High Capacity Flush Tumbler Switches

For Industrial Applications

20 Amperes, 250 Volts

Will operate successfully and without failure at full load and voltage for many times beyond accepted standard.

### Porcelain Cups

Front Connected

2 H.P.—230 Volts A.C., 250 Volts D.C.

Particularly designed for motor control.

Double-Pole Indicating, Templus Handle

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Pkg.
			125 Volts	250 Volts			
3972	\$113.12	20	10	2	10	5 1/2	
3972-SH	\$113.12	20	10	2	10	5 1/2	
3972-SR	\$118.12	20	10	2	10	5 1/2	

### Porcelain Cups

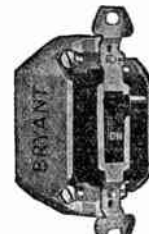
Back Connected

2 H.P.—230 Volts A.C., 250 Volts D.C.

Particularly designed for the control of appliances such as heaters and other high wattage devices. At 125 volts wattages up to 2500 may be safely controlled; at 250 volts wattages up to 5000.

Double-Pole Indicating, Composition Handle

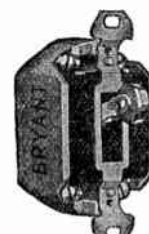
3982	\$113.12	20	10	2	10	6
3971	\$84.00	20	10	10	50	20
3973	\$339.36	20	10	10	2	7



No. 3972



No. 3972-SH



No. 3972-SR

**Bryant Enclosed Flush Tumbler Switches**  
For Type C Lamp Loads  
Black Composition Cups



No. 4961

These switches will give uniform performance, high minimum break-down, and exceptionally long life.

Dimensions of cups: Length, 2 $\frac{1}{16}$  inches; depth, 1 $\frac{3}{8}$  inches; width, Nos. 4961 and 4961-L, 1 $\frac{1}{32}$  inches, others, 1 $\frac{1}{16}$  inches.

Supporting screw spacing, 3 $\frac{3}{32}$  inches.

When ordering combination plates, specify S section. Single plates OS11, OS61, HS41, and HS31.

On special order, these switches can be furnished with black handles (lock switches with black bosses) without extra charge.

**Flush Tumbler Switches**  
With Brown Bakelite Handles

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
			125 Volts	250 Volts			
4961	\$77.78	S.P. Indicating...	10	5	10	50	17
4962	127.26	D.P. Indicating...	10	10	10	10	4
4963	98.98	3-Point .....	10	5	10	20	8
4964	311.08	4-Point .....	5	2	10	10	4
4965	141.40	D.P. Indicating...	20	10	10	10	4
4966	127.26	S.P. Quadruple Break, Indicating.	20	10	10	20	8

**Flush Tumbler Lock Switches**  
With Brown Bakelite Bosses

One No. 4960 Key is furnished with each lock switch.

4961-L	\$140.78	S.P. Indicating...	10	5	10	50	19
4962-L	190.26	D.P. Indicating..	10	10	10	10	4
4963-L	161.98	3-Point .....	10	5	10	20	8
4964-L	374.08	4-Point .....	5	2	10	10	4
4965-L	204.40	D.P. Indicating..	20	10	10	10	4
4966-L	190.26	S.P. Quadruple Break, Indicating	20	10	10	20	8

**Bryant Interchangeable Line Switches**



Single Switch

Fully enclosed mechanism. Satisfactory on Type C lamp circuits. Fits standard brass and composition plates.

Generous wiring room. Different switch combinations in 2 or 3-lever arrangements.

Electrically connected combinations in one base ready for installation.

Single switches and electrically connected combinations can be supplied in lock type when specified. Add L to Cat. No. and \$63.00 per 100 to list for each switch in combination.

**1L Single Switches**

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
			125 Volts	250 Volts			
1L.61	\$32.00	Single-Pole.....	10	5	10	100	20
1L.62	84.00	Double-Pole.....	..	10	2	10	2 $\frac{1}{2}$
1L.63	50.00	3-Point.....	10	5	10	50	10 $\frac{1}{2}$
1L.64	280.00	4-Point.....	5	2	2	10	2 $\frac{1}{2}$

**Electrically Connected Combinations**

1L.611	\$64.00	2 Single-Pole.....	..	..	2	10	3
1L.613	82.00	1 Single-Pole, 1 3-Point..	..	..	2	10	3
1L.633	100.00	2 3-Point.....	..	..	2	10	3
1L.6111	96.00	3 Single-Pole.....	..	..	2	10	3
1L.6113	114.00	2 Single-Pole, 1 3-Point..	..	..	2	10	3

Each unit in combination rated same as corresponding single switch. Any combination can be supplied in two or three sections. Order by using single switch numbers in the order of combination wished. List price is the sum of the lists of switch sections. Regularly supplied with common feed. For separate feed, remove the shunt connection.

**Templus Plates for Connected Combinations**

1L.12	\$15.00	1 Gang, 2 Openings..	..	..	10	50	5
1L.13	21.00	1 Gang, 3 Openings..	..	..	5	25	2
1L.24	30.00	2 Gangs, 4 Openings..	..	..	5	25	2
1L.26	42.00	2 Gangs, 6 Openings..	..	..	2	20	2

**Bryant Flush Tumbler Switches**

Single-Pole and 3-Point: 6 Amps., 125 V.; 3 Amps., 250V.  
Double-Pole: 10 Amps., 125 V.; 5 Amps., 250 V.  
4 Point: 5 Amps., 125 V.; 2 Amps., 250 V.

One outlet box, one switch, and one single gang plate in place of two or three of each.

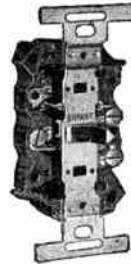
Switch mechanisms operate horizontally. Single and double-pole units indicating.

Brown bakelite cups and handles. Black bakelite handles on special order without extra charge.

Dimensions of bakelite cups: Length, 2 $\frac{1}{16}$  inches; width, 1 $\frac{3}{4}$  inches; depth, 1 $\frac{3}{32}$  inches.

Supporting screw spacings, 3 $\frac{3}{32}$  inches.

Carton, 2. Standard package, 10.



No. 2853 Unigle

**Unigle Switches**

One Mechanism Mounted In Center Position of Cup

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
2851	\$70.70	Single-Pole.....	2
2852	98.98	Double-Pole.....	2
2853	84.84	3-Point.....	2
2854	282.80	4-Point.....	2



No. 2894 Dugle

**Dugle Switches Separate Feeds**

Two Mechanism Mounted In End Positions of Cup

2855	\$353.50	1 Single-Pole, 1 4-Point	3
2856	197.96	2 Double-Pole.....	3
2857	367.64	1 3-Point and 1 4-Point	3
2858	183.82	1 Double-Pole, 1 3-Point.....	3
2859	381.78	1 Double-Pole, 1 4-Point.....	3
2869	169.68	1 Single-Pole, 1 Double-Pole.....	3
2893	148.48	2 3-Point.....	3
2894	120.20	2 Single-Pole.....	3
2895	134.34	1 Single-Pole, 1 3-Point.....	3

**Dugle Switches Common Feed**

Two Mechanisms Mounted In End Positions of Cup

2891	\$148.48	2 3-Point.....	3
2892	120.20	2 Single-Pole.....	3
2896	134.34	1 Single-Pole, 1 3-Point	3

**Trigle Switches Separate Feeds**

2864	\$183.82	3 Single-Pole.....	3
2866	197.96	2 Single-Pole, 1 3-Point	3
2867	240.38	2 Single-Pole, 1 Double-Pole.....	3
2868	424.20	2 Single-Pole, 1 4-Point	3

**Trigle Switches Common Feed**

2860	\$183.82	3 Single-Pole.....	3
2865	197.96	2 Single-Pole, 1 3-Point	3

When ordering combination plates for regular switches specify S1 for Unigle, S2 for Dugle, and S3 for Trigle, and for Lock Type Switches, S4 for Unigle, S5 for Dugle, and S6 for Trigle Sections.

These switches can be furnished with Lock Type mechanism at an addition to list price of \$45.00 per 100 units. Add L to Cat. No. When so ordered, all units in the switch will be supplied Lock unless otherwise specified. A special plate is necessary when lock and regular units are combined in a switch.

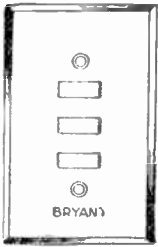
One No. 2850 Key is furnished without charge with each lock switch. Sold separately at \$14.14 per 100 list. Carton, 20. Standard package, 100.



No. 2860 Trigle

## Bryant Brass Flush Plates

For Regular and Lock Type Unigle, Dugle, and Trigle Flush Tumbler Switches



No. OS311



No. OS661

The standard finish is brush brass and will be furnished when no finish is specified.

Mounting screw holes are spaced 2 3/8 inches on centers.

### Unigle Switch Plates, Symbol S1

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
OS111	\$52.64	Solid, .100-Inch Brass	2	10	5
OS141	19.80	Stamped, .040-Inch Brass	2	10	2
OS161	25.46	Stamped, .060-Inch Brass	2	10	2

### Unigle Lock Type Switch Plates, Symbol S4

OS411	\$52.64	Solid, .100-Inch Brass	2	10	5
OS441	19.80	Stamped, .040-Inch Brass	2	10	2
OS461	25.46	Stamped, .060-Inch Brass	2	10	2

### Dugle Switch Plates, Symbol S2

OS211	\$52.64	Solid, .100-Inch Brass	2	10	5
OS241	19.80	Stamped, .040-Inch Brass	2	10	2
OS261	25.46	Stamped, .060-Inch Brass	2	10	2

### Dugle Lock Type Switch Plates, Symbol S5

OS511	\$52.64	Solid, .100-Inch Brass	2	10	5
OS541	19.80	Stamped, .040-Inch Brass	2	10	2
OS561	25.46	Stamped, .060-Inch Brass	2	10	2

### Trigle Switch Plates, Symbol S3

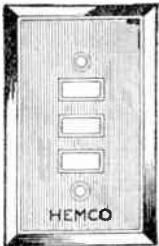
OS311	\$52.64	Solid, .100-Inch Brass	2	10	5
OS341	22.58	Stamped, .040-Inch Brass	2	10	2
OS361	25.46	Stamped, .060-Inch Brass	2	10	2

### Trigle Lock Type Switch Plates, Symbol S6

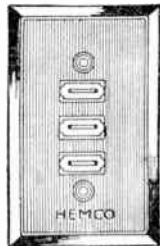
OS611	\$52.64	Solid, .100-Inch Brass	2	10	5
OS641	19.80	Stamped, .040-Inch Brass	2	10	2
OS661	25.46	Stamped, .060-Inch Brass	2	10	2

## Hemco Flush Plates

For Regular and Lock Type Unigle, Dugle, and Trigle Flush Tumbler Switches



No. HS331



No. HS631

Brown Hemco bakelite plates with glossy ribbed surface, and rich, satin finish border.

Will not fade or warp.

### Unigle Switch Plates

Cat. No.	Per 100	Description	Symbol	Car-ton	Std. Pkg.	Wt., Lbs.
HS131	\$17.12	Regular Type	S1	2	10	2
HS431	17.12	Lock Type	S4	2	10	2

### Dugle Switch Plates

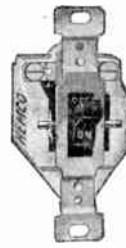
HS231	\$17.12	Regular Type	S2	2	10	2
HS531	17.12	Lock Type	S5	2	10	2

### Trigle Switch Plates

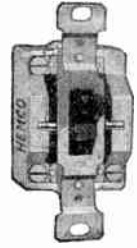
HS331	\$21.00	Regular Type	S3	2	10	2
HS631	21.00	Lock Type	S6	2	10	2

## Hemco Flush Tumbler Switches

10 Amperes 125 Volts—5 Amperes, 250 Volts



No. H51



No. H53

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
II51	\$13.68	Single-Pole, Indicating	10	100	30
II53	26.32	3-Point	10	50	14

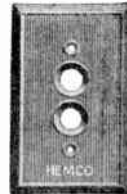
## Hemco Flush Plates

Brown Molded Templus, with Metal Screws

Ribbed



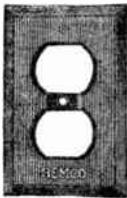
No. HS-31



No. HP-31



No. HF-31



No. HV-31

Cat. No.	Per 100	No. of Gangs	Style Switch	Car-ton	Std. Pkg.	Wt., Lbs.
HS31	\$8.42	1	Tumbler	10	100	9
HS32	16.84	2	Tumbler	5	50	9
HS33	25.26	3	Tumbler	3	30	8
HP31	8.42	1	Push	10	100	10
HP32	16.84	2	Push	5	50	8
HP33	25.26	3	Push	3	30	9
HF31	8.42	1	Single Rec.	10	100	9
HV31	8.42	1	Duplex Rec.	10	100	7

### Stamped Brass, .040-Inch Thick

Cat. No.	PER 100		No. of Gangs	Style Switch	Car-ton	Std. Pkg.	Wt., Lbs.
	Brush Brass	Perma Finish					
HS41	\$12.00	\$10.50	1	Tumbler	10	100	17
HS42	24.00	21.00	2	Tumbler	5	50	14
HS43	36.30	31.56	3	Tumbler	3	30	12
HP41	12.00	10.50	1	Push	10	100	14
HP42	24.00	21.00	2	Push	5	50	14
HP43	36.30	31.56	3	Push	3	30	15
HF41	12.00	12.00	1	Single	10	100	16
HV41	10.50	10.50	1	Duplex	10	100	15

## Bryant Brass Plates for 12-Volt Bell Push Button Symbol T

Button is not furnished.

Diameter of center hole, 5/8 inch.

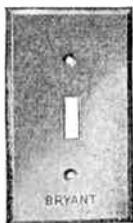
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt., Lbs.
OT11	\$52.64	1-Gang, Solid	10	50	20



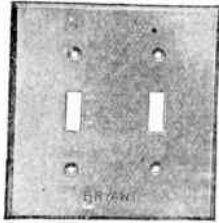


**Bryant Flush Plates for Tumbler Switches**

Schedule II



1-Gang



2-Gang

The standard finish is brush brass which will be furnished when no finish is specified.

Perma finish is a durable colored lacquer that resembles brush brass.

S plates of the same material may be assorted in various finishes, thicknesses and gangs to make up carton and standard package quantities. No other assortment permitted.

When ordering combination plates, specify S section to accommodate switches with handles operating vertically.

By installing No. 746 jewel, any of these plates can be made into pilot light plates.

Brass mounting screws, finished to match, are packed in the carton with each plate.

**Solid Brass Plates, One Horizontal Row  
Symbol S**

Description	Car-ton Gangs	Std. Pkg. Gangs	Pkg. Wt. Lbs.	STANDARD FINISH		PERMA FINISH	
				Cat. No.	Per 100	Cat. No.	Per 100
1-Gang	10	100	24	OS11	\$52.64	OS11-P	\$51.06
2-Gang	10	100	19	OS12	105.28	OS12-P	102.12
3-Gang	10	100	17	OS13	157.92	OS13-P	153.18

The price of brush brass solid S plates above 3 gangs, when dimensions and spacings are standard, is 84 cents list per gang (Perma, 76 cents).

**Stamped Brass Plates, .060-Inch  
One Horizontal Row, Symbol S**

1-Gang	10	100	25	OS61	\$22.10	OS61-P	\$20.52
2-Gang	10	100	21	OS62	44.20	OS62-P	41.04
3-Gang	10	100	20	OS63	66.30	OS63-P	61.56

The price of brush brass .060-inch S plates above 3 gangs, when dimensions and spacings are standard, is 52 cents list per gang (Perma, 44 cents).

**Stamped Brass Plates, .040-Inch  
One Horizontal Row, Symbol S**

1-Gang	10	100	19	OS41	\$12.00	OS41-P	\$10.50
2-Gang	10	100	15	OS42	24.00	OS42-P	21.00
3-Gang	10	100	14	OS43	36.30	OS43-P	31.56

The price of brush brass .040-inch S plates above 3 gangs, when dimensions and spacings are standard, is 44 cents list per gang (Perma, 36 cents).

**Solid Brass Plates, One Vertical Row (Tandem)**

2-Gang	10	100	22	3792	\$142.82	3792-P	\$131.50
3-Gang	10	100	22	3793	214.22	3793-P	197.26

The price of brush brass solid S plates in one vertical row (tandem) above 3 gangs, when dimensions and spacings are standard, is 84 cents list per gang (Perma, 76 cents).

**Bryant Flush Plates**

**Explanation of Catalogue Numbers for Flush Plates**

When specifying flush plates there are three things that must be known:

1. The style of plate.
2. The material of which it is made.
3. The number of gangs.

Except for tandem plates (plates arranged vertically) and combination plates, each listed Bryant flush plate has a catalogue number which describes the kind of plate it is.

OP52 is the catalogue number for a 2-button push switch plate, Templus composition, 2-gang.

OV61 is the catalogue number for a duplex flush receptacle plate, .060-inch stamped brass, 1-gang.

OPF12 is the catalogue number for a plate for one 2-button push switch and a single flush receptacle, .040-inch stamped brass, 2-gang.

OV211 is the catalogue number for a plate with doors for a duplex flush receptacle, solid brass, 1-gang.

In each case the left-hand letter O indicates a flush plate. See examples.

I. The symbol letter or letters immediately following describe the style of plate. See examples, letters P, V, PF and V2.

II. The figure next to the right-hand figure indicates the material of which the plate is made.

1. Indicates brass, .100 inch thick (solid).
6. Indicates brass, .060 inch thick, stamped.
5. Indicates Templus moulded composition.
4. Indicates brass, .040 inch thick, stamped.
7. Indicates De Luxe wood inlay plates.
- Indicates Hemo bakelite plates. In this case II is substituted for the first letter O.

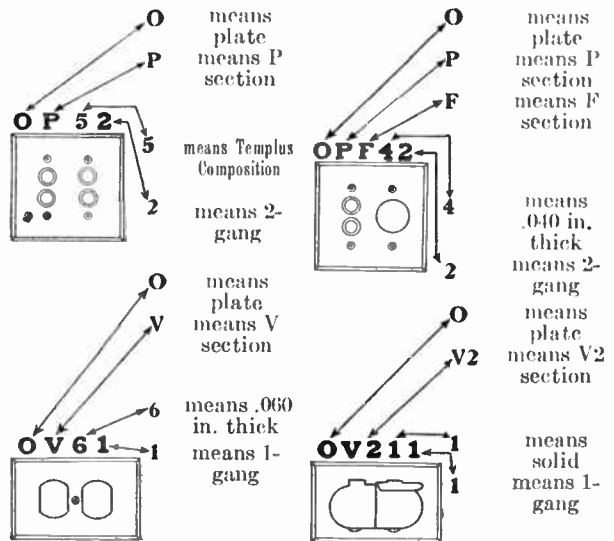
—B used in conjunction with No. 7 indicates the all metal plate of the De Luxe type.

—P after any plate catalogue number indicates that Perma finish is desired.

III. The right-hand figure indicates the number of horizontal gangs wide.

When the simple elements of this number system are learned it will be found easy to specify Bryant plates by catalogue number.

**Examples**



NOTE.—Plates in combinations exceeding 8 gangs cannot be furnished in .060-inch or .040-inch. Combination plates can only be furnished in the thickness specified with each section.



## Bryant Special Finishes

**GENERAL.**—The standard finish of all brass shell devices and brass flush plates, unless otherwise noted, is brush brass, which will be supplied when the finish is not specified. Standard and special finishes on all devices of one catalogue number may be assorted to make up the standard package quantity, which will be the same as though all were standard finish.

Assortment of catalogue numbers may be made only as indicated in the catalogue pages where the devices are listed. Prices on all special finishes other than those listed, including gold, will be quoted on application.

Sample of finish desired should always be submitted to avoid mistakes and delays.

### Socket Type Devices

**QUANTITY DISCOUNTS.**—When socket type devices or metal covered attachment plug caps in special finishes are ordered in quantities the list prices for finishes only will be reduced as follows: lots of 250-499, one shipment, one finish, 10%;

lots of 500-999, one shipment, one finish, 20%; lots of 1000 or over, one shipment, one finish, 50%. For mogul sockets in special finishes, add double the prices which apply to standard sockets.

**CHAINS AND METAL CHAIN PARTS.**—Chain guides, per foot or cut in lengths not longer than 1 foot, and chain parts, singly or in combination, can be supplied in any special finish, except silver and gold, at an addition to list price of 4 cents per unit. For silver finishes add 20 cents list per unit. Gold finish prices on application.

### Surface Switch Covers

The standard finish on all metal covers of surface switches unless otherwise noted is polished nickel, which will be supplied when the finish is not specified. For covers in any other finish, except silver or gold, add to list 20 cents each. Silver or gold finish prices on application.

Finish	ADD TO LIST PER 100									
	Brass Shell Key, Keyless and Push Devices with Caps including* Pendant Switches Complete	Brass Shell Pull Devices with Caps Complete	Brass Shell Key, Keyless and Push Bodies, all Shade-Holders	Brass Shell Pull Bodies	Mounted Porcelain Socket Caps and Canopy Switch Nuts and Knob Handles	One-Piece Brass Shell Wall and Ceiling Sockets and Receptacles and "New Wrinkle" Bases	METAL COVERED ATTACHMENT PLUG CAPS AND FLUSH RECEPTACLE PLUGS 10 Ampere Caps	20 and 25 Ampere Caps	BRASS FLUSH PLATES Single Gang per 100	BRASS FLUSH PLATES "Each Add'l Gang
Barff, Bauer Imitation (Lacquer)	\$6.00	\$8.00	\$3.00	\$5.00	\$3.00	\$12.00	\$4.00	\$8.00	\$14.00	\$14.00
Brass, Sand Blast Antique	22.00	24.00	11.00	13.00	11.00	30.00	12.00	25.00	42.00	14.00
Brass, Sand Blast Brush	16.00	20.00	9.00	11.00	9.00	28.00	8.00	16.00	35.00	14.00
Brass, Flemish	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Brass, Lemon	6.00	8.00	3.00	5.00	3.00	12.00	4.00	8.00	14.00	14.00
Brass, Oxidized	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Brass, Polished	6.00	8.00	3.00	5.00	3.00	12.00	4.00	8.00	14.00	14.00
Bronze, Brush	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Bronze, Japanese (Dark)	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Bronze, Polished	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Bronze, Statuary (Light)	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Black Lacquer	6.00	8.00	3.00	5.00	3.00	12.00	4.00	8.00	14.00	14.00
Chromium	22.00	24.00	11.00	13.00	11.00					
Chromium, Dull									42.00	14.00
Chromium, Polished									42.00	14.00
Colored Lacquers, 1 Coat	4.00	6.00	2.00	4.00	2.00	10.00				
Colored Lacquers, 2 Coats	6.00	8.00	3.00	5.00	3.00	12.00				
Colored Lacquers, 3 Coats	8.00	10.00	4.00	6.00	4.00	14.00				
Copper, Antique	16.00	18.00	8.00	10.00	8.00	25.00	10.00	19.00	28.00	14.00
Copper, Mottled	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Copper, Brush	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Copper, Oxidized	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Copper, Polished	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Enamel, White Imitation (Lacquer)	6.00	8.00	3.00	5.00	3.00	12.00	4.00	8.00	14.00	14.00
Gun Metal	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Hemco (Lacquer)									14.00	14.00
Lacquer, Colored, 1 Coat	4.00	6.00	2.00	4.00	2.00	10.00				
Lacquer, Colored, 2 Coats	6.00	8.00	3.00	5.00	3.00	12.00				
Lacquer, Colored, 3 Coats	8.00	10.00	4.00	6.00	4.00	14.00				
Nickel, Dull	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Nickel, Polished	10.00	12.00	5.00	7.00	5.00	16.00	8.00	15.00	21.00	14.00
Silver, Butler's (Brushed)	20.00	30.00	10.00	20.00	10.00	25.00	14.00	17.00	63.00	14.00
Silver, Satin	20.00	30.00	10.00	20.00	10.00	25.00	14.00	17.00	63.00	14.00
Silver, Oxidized	20.00	30.00	10.00	20.00	10.00	25.00	14.00	17.00	63.00	14.00
Silver, Polished	20.00	30.00	10.00	20.00	10.00	25.00	14.00	17.00	63.00	14.00
Telephone Red									14.00	14.00
Templus (Lacquer)									14.00	14.00
Verde Antique (Lacquer)	6.00	8.00	3.00	5.00	3.00	12.00	4.00	8.00	14.00	14.00
Ivory (Lacquer)									21.00	14.00

\*Applies only to multiple gang and combination plates.

Bryant Flush Plate Sections

Schedule H



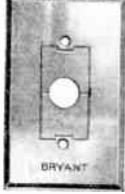
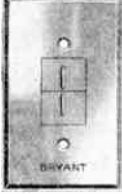


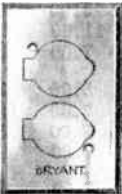

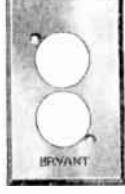







Combination plates should be described by using the letters shown with the illustrations of the respective plates, giving the letters in order from left to right, or from top to bottom, as the devices are to be mounted.

The list price of a horizontal combination plate of two or three sections, in brush brass finish when dimensions and spacings are standard and the devices are arranged in one horizontal row, will be the sum of the lists shown. The list

price of a horizontal combination plate of 4 or more sections in combination is the sum of the list prices shown plus 25% of that sum for the combination feature.

For plates with devices mounted tandem or in more than one horizontal row, add 20% to the sum of the list prices for 2 and 3-gang plates; for 4 or more gangs, add 50%.

Use the prices below when ordering combination plates.

<p><b>A</b></p> <p>Type A plate has been superseded by Type B plate.</p> <p>Type B plate consists of the Type F plate with No. 3850 Removable Jewel.</p>	 <p><b>B</b> List, Solid, \$.98 List, .060 in., .68 List, .040 in., .62 Bull's Eye Consists of "F" Plate with No. 3850 Bull's Eye Jewel For Cat. Nos. 427 and 627 Lamp Holder Receptacles</p>	 <p><b>B3</b> List, Solid, \$14.36 Consists of No. 737 Bull's Eye Jewel and has a Cast Brass Tumbler Holder in Place of the Lower Mounting Screw Made of Solid Brass Only</p>
 <p><b>C</b> List, Solid, \$1.24 List, .060 in., .78 List, .040 in., .38 Chapman Receptacle Plate Not Furnished in .040 in. Brass For Cat. No. 1363 Chapman Receptacle</p>	 <p><b>D</b> List, Solid, \$1.24 List, .060 in., .78 List, .040 in., .38 "D.D." Receptacle Plate Not Furnished in .040 in. Brass For Cat. Nos. 430 and 630 "D.D." Receptacles</p>	 <p><b>F</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Single Flush Receptacle Plate Without Door Will take Cat. Nos. 736 and 737 Bull's Eye Jewels to make "B" Plate Also for Cat. Nos. 120, 140, 556, 790, 1708, 4831, 9020, 9116, 9120 and 9326 Flush Receptacles</p>
 <p><b>E</b> List, Solid, \$.76 List, .060 in., .44 List, .040 in., .38 Single Flush Receptacle Plate With Door For Cat. Nos. 124, 1708 and 9024 Flush Receptacles</p>	 <p><b>E2</b> List, Solid, \$1.26 Duplex Flush Receptacle Plate With Doors Made of Solid Brass Only For Cat.No. 546 Flush Receptacle</p>	 <p><b>I</b> List, Solid, \$1.04 List, .060 in., .76 List, .040 in., .70 Plate for Cat. No. 121 "Spartan" Pilot Receptacle</p>
 <p><b>F2</b> List, Solid, \$1.08 List, .060 in., .76 List, .040 in., .70 Duplex Flush Receptacle Plate Without Doors For Cat. No. 546 Flush Receptacle</p>	 <p><b>G</b> List, Solid, \$.70 List, .060 in., .42 List, .040 in., .36 ★Telephone Plate With one Cord Hole</p>	 <p><b>K</b> List, Solid, \$.68 List, .060 in., .38 List, .040 in., .34 ★Blank Plate</p>
 <p><b>I2</b> List, Solid Only, \$1.04 Plate for Cat. No. 5121 Combination</p>	 <p><b>J</b> List, Solid, \$.68 List, .060 in., .52 List, .040 in., .46 Plate for Cat. No. 411 and 411S "Junior" Flush Receptacle</p>	 <p><b>M2</b> List, Solid, \$1.04 List, .060 in., .76 List, .040 in., .70 Plate for Cat. Nos. 2959 and 3959 Tumbler Switch and Pilot Lamp Combinations</p>
 <p><b>L2</b> List, .040 in., \$1.20 Made of .040 in. Brass Only For Cat. Nos. 427 and 627 Receptacles</p>	 <p><b>M</b> List, Solid, \$1.04 List, .060 in., .76 List, .040 in., .70 Plate for Cat. No. 465 Combination</p>	

★The supporting screw spacing for this section is 3<sup>32</sup>/<sub>32</sub> inches for .100-inch (solid) combination plates. The supporting screw spacing for this section is 2<sup>3</sup>/<sub>8</sub> inches for .060-inch and .040-inch stamped combination plates. Yoke No. H-10 is furnished for this section in stamped combination plates without extra charge.



## Bryant Flush Plate Sections

The standard package quantity is 10 plates of one description (not 10 gangs). The carton quantity is 2 plates.




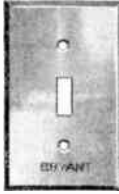

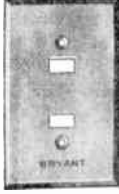




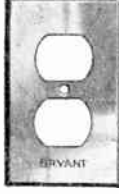

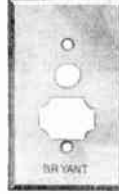



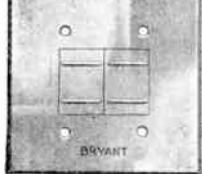
A combination plate cannot be so considered for billing purposes unless it is described by at least two different letters, but letters may be used to describe any desired arrangement of plate sections.

The standard finish of plates is brush brass which will

be supplied if no finish is specified. For special finishes see another page.

Except for those listed as such, Templus and Hemo moulded composition plates cannot be supplied in combinations.

Use the prices below when ordering combination plates.

 <p><b>N</b> List, Solid, \$1.16 "Old Style" "Chapman" Receptacle Plate For Cat. No. 613 Chapman Receptacle Supporting Screw Spacing 2<math>\frac{1}{16}</math> in. Made of Solid Brass Only</p>	 <p><b>O</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 One-Button Push Switch Plate For all Type "O" Flush Switches Also Western Electric No. 367 Telephone Jack</p>	 <p><b>P</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Two-Button Push Switch Plate For all Two-Button Flush Switches</p>
 <p><b>S</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Tumbler Switch Plate For All Single Handle Vertically Operated Flush Tumbler Switches</p>	 <p><b>S1</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Tumbler Switch Plate for "Unigle" Switches</p>	 <p><b>S2</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Tumbler Switch Plate for "Dugle" Switches</p>
 <p><b>S3</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Tumbler Switch Plate For "Trigle" Switches</p>	 <p><b>T</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 ★Push-Button Plate For 12 Volt Push Button Cat. No. 3675</p>	 <p><b>T2</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 ★Telephone Jack Plate for Western Electric Telephone Jack Receptacle No. 367</p>
 <p><b>T3</b> List, Solid, \$3.04 ★Push- Button Plate With 12 Volt Push Button Push Button and Plate cannot be separated Made of Solid Brass Only</p>	 <p><b>V</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Duplex Flush Receptacle Plate Without Doors For Cat. Nos. 122, 142, 792, 4832 and 9022 Duplex Flush Receptacles</p>	 <p><b>V2</b> List, Solid, \$1.40 Duplex Flush Receptacle Plate With Doors For Cat. Numbers 125 and 9025 Duplex Receptacles Made of Solid Brass Only</p>
 <p><b>W</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Plate for Cat. No. 117 Switch and Receptacle Combination</p>	 <p><b>W2</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Plate for Cat. Nos. 2957 and 3957 Switch and Receptacle Combination</p>	 <p><b>W4</b> List, Solid, \$.62 List, .060 in., .34 List, .040 in., .28 Plate for Cat. Nos. 2994, 2995, 3994 and 3995 Switch and Receptacle Combinations</p>
 <p><b>Y</b> List, Solid, \$1.54 List, .060 in., 1.06 List, .040 in., 1.00 Two-Gang Rotary Switch Plate For Cat. No. 2568 30 Amp., D. P. Rotary Flush Switch</p>	 <p><b>Z</b> List, Solid, \$3.08 Two-Gang "D.D." Receptacle Plate For Cat. No. 446 25 Amp. "D.D." Flush Receptacle Made of Solid Brass Only</p>	

★The supporting screw spacing for this section is 3 $\frac{1}{2}$  inches for .100 inch (solid) combination plates. The supporting screw spacing for this section is 2 $\frac{3}{8}$  inches for .060 inch and .040 inch stamped combination plates. Yoke No. H-10 is furnished for this section in stamped combination plates without extra charge.

**Hubbell Surface Toggle Switches**  
Pony Type



S. P. Switches have On and Off indications. Three-way Switches are non-indicating. Metal covers on switches without box covers are of the Snap-on type. All switches on box covers are fitted with screw-on type covers. Outlet box covers black japanned finish.

Cat. No.	Per 100	Description	AMPERES		Diam. of Base Ins.	Screw Hole Spacing	Wt. Lbs. Std. Pkg.
			125 Volts	250 Volts			
9060	\$36.00	S. P., Slotted	6	3	2	1 7/16	24
9061	36.00	S. P., Solid	6	3	2	1 7/16	24
9062	67.88	3-Way, Slotted	5	2	2 1/8	1 7/16	27
9063	67.88	3-Way, Solid	5	2	2 1/8	1 7/16	27

Standard package 100; carton quantity 10.

**With Polished Nickel Covers—For Outlet Boxes**

9064	\$43.00	S.P., 3 1/4" Box	6	3	3 1/16	2 3/4	24
9065	44.00	S.P., 4" Box	6	3	4 1/16	3 1/2	30
9066	74.94	3-Way, 3 1/4" Box	5	2	3 7/16	2 3/4	24
9067	77.78	3-Way, 4" Box	5	2	4 1/16	3 1/2	30

Standard package 50; carton quantity 5.

**With Black Bakelite Covers—For Outlet Boxes**

9068	\$43.00	S.P., 3 1/4" Box	6	3	3 7/16	2 3/4	24
9069	44.00	S.P., 4" Box	6	3	4 1/16	3 1/2	30
9070	74.94	3-Way, 3 1/4" Box	5	2	3 7/16	2 3/4	24
9071	77.78	3-Way, 4" Box	5	2	4 1/16	3 1/2	30

Standard package 50; carton quantity 5.

**Hubbell Surface Toggle Switches**



Brush brass and nickel plate are standard finishes for switch covers. Brush brass covers furnished unless otherwise specified.

Black porcelain base.

Screw holes are elongated.

**With 2 1/4-Inch Base**

Screw spacings, 1 1/2 to 1 25/32 inches.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
			125 Volts	250 Volts			
8171	\$36.00	S. P., Solid	5	3	10	100	35
8191	36.00	S. P., Slotted	5	3	10	100	35
8421	84.00	S. P., Solid	10	5	10	100	35
8431	84.00	S. P., Slotted	10	5	10	100	35
8173	67.88	3-Way, Solid	5	3	10	100	35
8193	67.88	3-Way, Slotted	5	3	10	100	35

**With 2 5/8-Inch Base**

Screw spacings, 1 25/32 to 1 25/32 inches.

8112	\$118.22	D. P., Solid	10	10	10	100	40
8162	118.22	D. P., Slotted	10	10	10	100	40
8153	118.22	3-Way, Solid	10	5	10	50	20
8233	118.22	3-Way, Slotted	10	5	10	50	20

**No. 271 Hubbell Toggle Type Cord Switches**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Made of brown bakelite; modernistic in design. Fitted with large head binding screws; ample space is provided in wiring channels.



Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
271	\$30.52	Single Pole	10	50	5

**Hubbell Surface Snap Switches**

Metal covered.



Polished nickel finish.

**Pony—Single Pole**

5 Amperes, 125 Volts; 3 Amperes, 250 Volts  
O.D. base, 2 in. Supporting screws spaced 1 1/32 in.

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt. Lbs.
9510	\$36.00	Slotted	10	100	23
9511	42.00	Slotted, Indicating	10	100	24
9512	36.00	Solid	10	100	24
9513	42.00	Solid, Indicating	10	100	24

10 Amperes, 125 Volts; 5 Amperes, 250 Volts  
O.D. base, 2 1/2 in. Supporting screws spaced 1 1/32 in.

9515	\$84.00	Slotted, Indicating	10	100	41
9517	84.00	Solid, Indicating	10	100	41

**3-Way**

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

O.D. base, 2 in. Supporting screws spaced 1 1/32 in.

9330	\$67.88	Slotted	10	100	27
9331	67.88	Solid	10	100	27

**Double Pole**

5 Amperes, 250 Volts

O.D. base, 2 3/16 in. Supporting screws spaced 1 7/16 in.

9521	\$99.54	Slotted, Indicating	10	100	30
9523	99.54	Solid, Indicating	10	100	30

10 Amperes, 250 Volts

O.D. base, 2 1/2 in. Supporting screws spaced 1 25/32 in.

9525	\$118.22	Slotted, Indicating	10	100	43
9527	118.22	Solid, Indicating	10	100	43

**4-Way**

5 Amperes, 125 Volts; 2 Amperes, 250 Volts

O.D. base, 2 1/2 in. Supporting screws spaced 1 25/32 in.

9540	\$254.52	Slotted	10	30	12
9541	254.52	Solid	10	30	12

**Hubbell Toggle Appliance Switches**

**Single Pole**

6 Amperes, 125 Volts  
3 Amperes, 250 Volts



No. 8745

Depth of switch base, 3/4-inch; diameter, 1 1/4 inches. Diameter of neck, 1/2-inch. Standard finishes are brush brass or polished nickel.



No. 8650

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
*8650	\$50.50	With 1 7/16-Inch Neck	25	50	4
*8656	57.58	With 1 1/2-Inch Neck	25	50	4
8745	54.74	With 1 7/16-Inch Neck, Ind.	25	50	4
*8746	61.82	With 1 1/2-Inch Neck, Ind.	25	50	5

\*Can be supplied with luminous tip on handle at an addition of \$25.00 per 100 units.

**Hubbell Ceiling Pull Switches**

5 Amperes, 250 Volts; 10 Amperes, 125 Volts



No. 7651

Supplied with 8 feet of black cord. Extra cord, \$2.00 per 100 feet.

Diameter of base, 2 1/2 inches.

Mounting screws spaced 1 25/32 inches on centers.

**Single Pole**

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
7650	\$155.54	Slotted Base	10	30	20
7651	155.54	Solid Base	10	30	20

**3-Point**

7653	\$199.10	Slotted Base	2	10	8
7654	199.10	Solid Base	2	10	8

## Hubbell Flush Toggle Switches

For Type C Lamps—With Enclosed Bakelite Base

Will fit 1½-inch switch boxes. Supporting screw holes spaced 3⅝ inches on centers.

### With Square Composition Handle



No. 9801

Cat. No.	Per 100	Description	AMPERES 125-V.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
*9801	\$77.78	S. P., Ind.	10	5	10	50 13
*9802	127.26	D. P., Ind.	..	10	2	10 4
*9803	98.98	3-Way....	10	5	10	20 8
9933	141.40	3-Way....	20	10	2	10 8
*9804	311.08	4-Way....	5	2	2	10 5
*9805	127.26	S. P., Ind.	..	20	2	10 4
*9806	141.40	D. P., Ind.	..	20	2	10 4

Both brown and black handles are standard; brown will be furnished unless otherwise specified. If desired grounded suffix letter G to catalogue number.



No. 7901

### With Square Metal Handles

*7901	\$98.98	S. P., Ind.	10	5	10	50 16
*7902	148.48	D. P., Ind.	..	10	2	10 8
*7903	120.20	3-Way....	10	5	10	20 11
9623	162.62	3-Way....	20	10	2	10 8
*7904	332.30	4-Way....	5	2	2	10 8
*7905	148.48	S. P., Ind.	..	20	2	10 6
*7906	162.62	D. P., Ind.	..	20	2	10 8

When ordering toggle switches to be used with specially finished plates, care should be taken to specify the finish for handles of the toggle switches. Regularly supplied grounded. Standard finish is brush brass.



No. 7701

### With Indestructible Live Rubber Handles

7701	\$82.78	S. P., Ind.	10	5	10	50 16
7702	132.26	D. P., Ind.	..	10	2	10 8
7703	103.98	3-Way....	10	5	10	20 11
7704	316.08	4-Way....	5	2	2	10 8
7705	132.26	S. P., Ind.	..	20	2	10 6
7706	146.40	D. P., Ind.	..	20	2	10 8

### Locking Type—For Use with Standard Rectangular Opening Switch Plates

Has same mechanism as 9801 line. Brush brass and black are standard finishes on keyway. Brush brass furnished unless otherwise specified. Regularly supplied grounded.

One 8965 key furnished with each switch.



No. 9701

9701	\$141.40	S. Pole...	10	5	10	50 13
9702	190.90	D. Pole...	..	10	2	10 5
9703	162.62	3-Way....	10	5	10	20 8
9613	205.04	3-Way....	20	10	2	10 8
9704	374.72	4-Way....	5	2	2	10 6
9705	190.90	S. Pole...	..	20	2	10 4
9706	205.04	D. Pole...	..	20	2	10 6
8965	14.14	Key.....	..	..	20	100 2

### Momentary Contact—With Square Composition Handle

This switch is of same construction as 9801 line.

Both brown and black handles are standard; brown furnished unless otherwise specified.

Normally Closed Cat. No.	Normally Open Cat. No.	Per 100	Description	AMPERES 125-V.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
*9601	*9901	\$176.76	S. P., Ind.	10	5	10	50 13
*9602	*9902	226.24	D. P., Ind.	..	10	2	10 4
....	*9903	197.96	3-Way....	10	5	10	20 8
....	*9904	410.06	4-Way....	5	2	2	10 5
*9605	*9905	226.24	S. P., Ind.	..	20	2	10 4
*9606	*9906	240.38	D. P., Ind.	..	20	2	10 4

\*Can be supplied with luminous tip on handle at an addition of \$25.00 per 100 units.

## Hubbell Flush Toggle Switches

With Porcelain Base

Will fit in 1½-inch switch boxes. Supporting screw holes spaced 3⅝ inches on centers.

Wide plaster ears, scored so as to be readily removed if desired, are standard equipment.

Switches with narrow aligning lugs are recommended for use with screwless bakelite plates and may be had when so specified. Wide plaster ears cannot be used with screwless plates. Body made of Nu-Blac porcelain.

### With Square Composition Handle



No. 8801

Cat. No.	Per 100	Description	AMPERES 125-V.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.
*8801	\$32.00	S. P., Ind.	10	5	10	100 34
*8941	84.00	S. P., Ind.	..	20	2	10 6
8942	113.12	D. P., Ind.	..	20	2	20 13
*8802	84.00	D. P., Ind.	..	10	10	50 20
*8803	50.00	3-Way....	10	5	10	50 20
*8804	280.00	4-Way....	5	2	2	10 5

Both brown and black handles are standard. Brown furnished unless otherwise specified. If desired grounded suffix letter G to catalogue number.



No. 7801

### With Square Metal Handle

*7801	\$47.16	S. P., Ind.	10	5	10	100 34
*7802	99.16	D. P., Ind.	..	10	10	50 20
7842	128.28	D. P., Ind.	..	20	10	20 14
*7803	65.16	3-Way....	10	5	10	50 20
*7804	295.16	4-Way....	5	2	2	10 5
*7805	99.16	S. P., Ind.	..	20	2	10 6

When ordering toggle switches to be used with specially finished plates, care should be taken to specify the finish for handles of the toggle switches. Standard finish is brush brass. Regularly supplied grounded.



No. 7601

### With Indestructible Live Rubber Handles

7601	\$37.00	S. P., Ind.	10	5	10	100 26
7602	89.00	D. P., Ind.	..	10	10	50 7
7603	55.00	3-Way....	10	5	10	50 16
7604	285.00	4-Way....	5	2	2	10 16
7605	89.00	S. P., Ind.	20	..	2	10 8

### Locking Type—For Use with Standard Rectangular Opening Switch Plates

Equipped with a special locking feature which prevents unauthorized manipulation of the switch except by the possessor of a No. 8965 key. Switch cannot be operated by screwdriver or other instrument but functions immediately when operated by the key.

One No. 8965 key is furnished with each locking switch.

Brush brass and black are standard finishes on keyway. Brush brass furnished unless otherwise specified. Regularly supplied grounded.



No. 8961

8961	\$112.28	S. P., Ind.	10	5	10	100 25
8962	147.00	D. P., Ind.	..	10	10	50 18
8963	133.48	3-Way....	10	5	10	50 18
8964	345.80	4-Way....	5	2	2	10 8
8965	14.14	Key.....	..	..	20	100 2



No. 8965

\*Can be supplied with luminous tip on handle at an addition of \$25.00 per 100 units.



**Hubbell LS Series Flush Switches**

For Type C Lamps

Specially designed for handling Type C lamp loads. Small in size; sturdy in construction; unusually large wiring space. Bakelite base fully encloses mechanism.

**Single Switches**

Fits regular brass or bakelite tumbler switch plates.

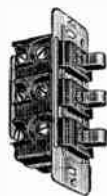


LS-1

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs.	
			125-V.	250-V.			Pkg.	Std. Pkg.
LS-1	\$32.00	Single Pole	10	5	10	100	20	
LS-2	84.00	Double Pole	10	2	10	2 1/2		
LS-3	50.00	3-Way	10	5	10	50	10 1/2	
LS-4	280.00	4-Way	5	2	2	10	2 1/2	

**Electrically Connected Combinations**

Each switch section takes same rating as corresponding single switch. Any combination can be supplied in 2 or 3 sections. Order by using single switch numbers in the order of the combination desired. The price is the sum of the lists of the switch sections. Combination switches are regularly supplied with common feed. If separate feed is desired, remove the shunt connection. Any of these switches can be supplied in lock style. When so specified, add L to catalogue number and \$63.00 per 100 for each switch.

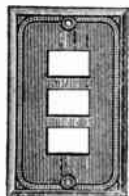


LS-111

Cat. No.	Per 100	Description	Wt., Lbs. Std. Pkg.
LS-11	\$64.00	Two Single Pole	3
LS-13	82.00	One S.P., One 3-Way	3
LS-33	100.00	Two 3-Way	3
LS-111	96.00	Three Single Pole	3
LS-113	114.00	Two S.P., One 3-Way	3

**Bakelite Plates for Connected Combinations**

LS-5	\$15.00	1 Gang, 2 Openings	5
LS-6	21.00	1 Gang, 3 Openings	2
LS-7	30.00	2 Gangs, 4 Openings	2
LS-8	42.00	2 Gangs, 6 Openings	2



LS-6

**Acorn Flush Toggle Switches**



No. 9991



No. 9993

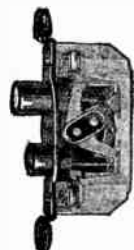
Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs.	
			125-V.	250-V.			Pkg.	Std. Pkg.
9991	\$13.68	Single Pole, Ind.	10	5	10	100	30	
9991-I	22.00	Ivoryine, S. P., Ind.	10	5	10	50	15	
9993	26.32	3-Way	10	5	10	50	16	
9993-I	42.00	Ivoryine, 3-Way	10	5	10	25	8	

**Hubbell Push Button Switches**

With Porcelain Base

Outside supporting screws spaced 3 3/8 inches on centers. Inside supporting screws are spaced 2 13/16 inches on centers. Depth of base, 1-inch.

Lock type switch can be furnished.



No. 4401

Cat. No.	Per 100	Description	Amperes		Car-ton	Std. Pkg.	Wt., Lbs.	
			125-V.	250-V.			Pkg.	Std. Pkg.
4401	\$38.88	Single Pole	10	5	10	100	31	
4402	108.88	Double Pole	10	10	10	50	17	
4403	55.56	3-Way	10	5	10	50	17	
4404	311.08	4-Way	5	2	2	10	5	

**Hubbell Uniplex Switches**

With Single Square Bakelite Lateral Operating

Handle in the Center

One Unit

**Ratings**

**Single Pole**

3 Amperes, 250 Volts  
6 Amperes, 125 Volts

**Double Pole**

5 Amperes, 250 Volts  
10 Amperes, 125 Volts

**3-Way**

3 Amperes, 250 Volts  
6 Amperes, 125 Volts

**4-Way**

2 Amperes, 250 Volts  
5 Amperes, 125 Volts



No. 9911



Nos. 9911 and 9921 Assembled

Cat. No.	Per 100	Description	Car-ton	Std. Wt., Lbs.	
				Pkg.	Std. Pkg.
9911	\$70.70	One Single Pole Unit	2	10	3
9912	98.98	One Double Pole Unit	2	10	3
9913	84.84	One 3-Way Unit	2	10	3
9914	282.80	One 4-Way Unit	2	10	3

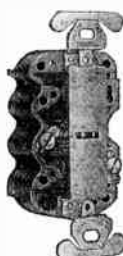
Can be supplied with luminous tip on handle at an addition of \$25.00 per 100 units.

**Single Plates for Uniplex Switches**

Cat. No.	Per 100	Description	Car-ton	Std. Wt., Lbs.	
				Pkg.	Std. Pkg.
9921	\$19.80	.040" Brush Brass	2	10	1 1/2
9922	18.22	.040" Lacco Brass	2	10	1 1/2
9923	25.46	.060" Brush Brass	2	10	2
9924	23.88	.060" Lacco Brass	2	10	2
*9925	17.12	Mat Bakelite Screw Type	2	10	2
9926	40.40	Sand Blast Bakelite Screwless, Under-Plate	2	10	2
9927	52.64	.100" Brush Brass	2	10	2
*4825	17.12	Ornamental Bakelite Screw Type	2	10	2
*9825	17.12	Ribbed Finish Bakelite Screw Type	2	10	2

\*When bakelite screws are furnished add \$1.00 per 100 gangs in standard package quantities. Duplex plates furnished with metal screws only.

**Locking Type—One Unit**



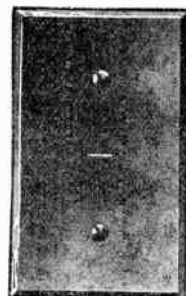
No. 4911



No. 8965

Equipped with a special locking feature which prevents unauthorized manipulation of the switch except by the possessor of a No. 8965 key.

One No. 8965 key is furnished with each switch.



Nos. 4911 and 4921 Assembled

Regularly supplied grounded.

Cat. No.	Per 100	Description	Car-ton	Std. Wt., Lbs.	
				Pkg.	Std. Pkg.
4911	\$134.34	One Single Pole Unit	2	10	3
4912	162.62	One Double Pole Unit	2	10	3
4913	148.48	One 3-Way Unit	2	10	3
4914	346.44	One 4-Way Unit	2	10	3

**Single Plates for Uniplex Locking Type Switches**

Cat. No.	Per 100	Description	Car-ton	Std. Wt., Lbs.	
				Pkg.	Std. Pkg.
4921	\$19.80	.040" Brush Brass	2	10	1 1/2
4922	14.14	.040" Lacco Brass	2	10	1 1/2
4923	25.46	.060" Brush Brass	2	10	2
4924	19.80	.060" Lacco Brass	2	10	2
4927	52.64	.100" Brush Brass	2	10	2

## Hubbell Duplex Switches

With Square Bakelite Lateral Operating Handles

Two Units



No. 9821

Ratings

Single Pole

3 Amperes, 250 Volts  
6 Amperes, 125 Volts

Double Pole

5 Amperes, 250 Volts  
10 Amperes, 125 Volts

3-Way

3 Amperes, 250 Volts  
6 Amperes, 125 Volts

4-Way

2 Amperes, 250 Volts  
5 Amperes, 125 Volts



Nos. 9823 and 8852 Assembled

Carton quantity, 2; Standard package, 10.

Cat. No.	Per 100	Description	Feed	Wt., Lbs. Std. Pkg.
8821	\$120.20	Two Single Pole Units....	Common	3
9821	120.20	Two Single Pole Units....	Separate	3
8823	134.34	One S. P. and One 3-Way...	Common	3
9823	134.34	One S. P. and One 3-Way...	Separate	3
9824	148.48	Two 3-Way Units....	Separate	3
9809	169.68	One S. P. and One D. P....	Separate	3
9810	183.82	One D. P. and One 3-Way...	Separate	3
9811	353.50	One S. P. and One 4-Way...	Separate	3
9812	367.64	One 3-Way and One 4-Way...	Separate	3
9813	197.96	Two Double Pole Units....	Separate	3

Can be supplied with luminous tip on handle at an addition of \$25.00 per 100 units.

### Single Plates for Duplex Switches

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*4854	\$17.12	Ornamental Bakelite.....	2	10	2
8842	40.40	Bakelite Screwless.....	2	10	1 1/2
8852	25.46	.060" Brush Brass.....	2	10	2
8952	23.88	.060" Lacco Brass.....	2	10	2
*8854	17.12	Mat Bakelite.....	2	10	2
8856	19.80	.040" Brush Brass.....	2	10	1 1/2
8857	18.22	.040" Lacco Brass.....	2	10	1 1/2
*9854	17.12	Ribbed Finish Bakelite.....	2	10	2

\*When bakelite screws are furnished add \$1.00 per 100 gangs in standard package quantities. Duplex plates furnished with metal screws only.

### Locking Type—Two Units



No. 7821

Equipped with a special locking feature which prevents unauthorized manipulation of the switch except by the possessor of a No. 8965 key. One key furnished with each switch. Regularly supplied grounded.

Carton quantity, 2; standard package, 10.



Nos. 7852 and 7821 Assembled

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7821	\$247.46	Two Single Pole Units....	Common	3	
4821	247.46	Two Single Pole Units....	Separate	3	
7823	261.60	One S. P. and One 3-Way...	Common	3	
4823	261.60	One S. P. and One 3-Way...	Separate	3	
4824	275.74	Two 3-Way Units....	Separate	3	
4809	296.94	One S. P. and One D. P....	Separate	3	
4810	311.08	One D. P. and One 3-Way...	Separate	3	
4811	480.76	One S. P. and One 4-Way...	Separate	3	
4812	494.90	One 3-Way and One 4-Way...	Separate	3	
4813	325.22	Two Double Pole Units....	Separate	3	

### Single Plates for Duplex Locking Type Switches

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7852	\$25.46	.060" Brush Brass.....	2	10	2

## Hubbell Triplex Switches

With Square Bakelite Handles

Three Units



No. 8833

Ratings

Single Pole

3 Amperes, 250 Volts  
6 Amperes, 125 Volts

Double Pole

5 Amperes, 250 Volts  
10 Amperes, 125 Volts

3-Way

3 Amperes, 250 Volts  
6 Amperes, 125 Volts

4-Way

2 Amperes, 250 Volts  
5 Amperes, 125 Volts



Nos. 8853 and 8833 Assembled

Carton quantity, 2; standard package, 10.

Cat. No.	Per 100	Description	Feed	Wt., Lbs. Std. Pkg.
*8831	\$183.82	Three Single Pole Units...	Common	3
*9831	183.82	Three Single Pole Units...	Separate	3
*8833	197.96	Two S. P. and One 3-Way...	Common	3
*9833	197.96	Two S. P. and One 3-Way...	Separate	3
*9814	240.38	Two S. P. and One D. P....	Separate	3
9641	424.20	Two S. P. and One 4-Way...	Separate	3

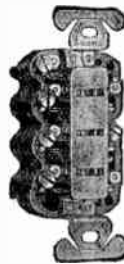
\*Can be supplied with luminous tip on handle at an addition of \$25.00 per 100 units.

### Single Plates for Triplex Switches

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.
*4855	\$21.00	Ornamental Bakelite Screw Type.....	2	10	2
8843	40.40	Sand Blast Bakelite Screwless with Under-Plate No. 8844...	2	10	1 1/2
8853	25.46	.060" Brush Brass.....	2	10	2
8953	23.88	.060" Lacco Brass.....	2	10	2
*8855	21.00	Mat Bakelite Screw Type....	2	10	2
8858	22.58	.040" Brush Brass.....	2	10	1 1/2
8859	21.00	.040" Lacco Brass.....	2	10	1 1/2
*9855	21.00	Ribbed Finish Bakelite Screw Type.....	2	10	2

\*When bakelite screws are furnished add \$1.00 per 100 gangs in standard package quantities. Duplex plates furnished with metal screws only.

### Locking Type—Three Units



No. 7831

Equipped with a special locking feature which prevents unauthorized manipulation of the switch except by the possessor of a No. 8965 key. One key furnished with each switch. Regularly supplied grounded.

Carton quantity, 2; standard package, 10.



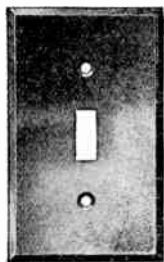
Nos. 7831 and 7853 Assembled

Cat. No.	Per 100	Description	Feed	Wt., Lbs. Std. Pkg.
7831	\$374.72	Three Single Pole Units....	Common	3
4831	374.72	Three Single Pole Units....	Separate	3
7833	388.86	Two S. P. and One 3-Way...	Common	3
4833	388.86	Two S. P. and One 3-Way...	Separate	3
4814	431.28	Two S. P. and One D. P....	Separate	3

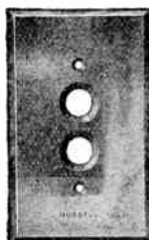
### Single Plates for Triplex Locking Type Switches

Cat. No.	Per 100	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.
7853	\$25.46	.060" Brush Brass.....	2	10	2

**Hubbell Plates for Switches**



For Square Handle Toggle Switches



For Push Switches

Plates in brush brass, lacco or special finishes may be assorted to make standard package or carton quantity.

**Struck-Up—.040-Inch Metal**

**Brush Brass**

For Square Handle Toggle Switches		For Push Switches		Style Plates	Wt. Lbs. Std. *Pkg.
Cat. No.	Per 100	Cat. No.	Per 100		
8771	\$12.00	8511	\$12.00	Single	20
8772	24.00	8512	24.00	2-Gang	16
8773	36.30	8513	36.30	3-Gang	14
8774	124.44	8514	124.44	4-Gang	13
8775	155.54	8515	155.54	5-Gang	12
8776	186.64	8516	186.64	6-Gang	10
8777	217.76	8517	217.76	7-Gang	9
8778	248.86	8518	248.86	8-Gang	7

**Lacco Brass**

8781	\$10.50	8521	\$10.50	Single	20
8782	21.00	8522	21.00	2-Gang	16
8783	31.56	8523	31.56	3-Gang	14
8784	101.80	8524	101.80	4-Gang	13
8785	127.26	8525	127.26	5-Gang	12
8786	152.72	8526	152.72	6-Gang	10
8787	178.16	8527	178.16	7-Gang	9
8788	203.62	8528	203.62	8-Gang	7

**Struck-Up—.060-Inch Metal**

**Brush Brass**

8751	\$22.10	8551	\$25.46	Single	29
8752	44.20	8552	50.90	2-Gang	26
8753	66.30	8553	76.36	3-Gang	25
8754	147.06	8554	147.06	4-Gang	23
8755	183.82	8555	183.82	5-Gang	22
8756	220.58	8556	220.58	6-Gang	20
8757	257.34	8557	257.34	7-Gang	18
8758	294.12	8558	294.12	8-Gang	16

**Solid Brass—.100-Inch Metal**

**Brush Brass**

8761	\$52.64	8571	\$52.64	Single	35
8762	105.28	8572	105.28	2-Gang	33
8763	157.92	8573	157.92	3-Gang	31
8764	237.56	8574	237.56	4-Gang	29
8765	296.94	8575	296.94	5-Gang	27

**Solid Brass—.100-Inch Metal—Tandem**

**Brush Brass**

8795	\$142.82	8592	\$142.82	2-Gang	33
8796	214.22	8593	214.22	3-Gang	31
8797	285.62	8594	285.62	4-Gang	29

\*A carton consists of 10 single plates of a kind or equivalent in gangs. A standard package consists of 100 single plates of a kind or equivalent in gangs.

**Hubbell Bakelite Switch Plates**

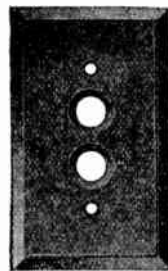
**Mat, Ornamental and Ribbed Finish**



No. 7095 Mat



No. 4095 Ornamental



No. 7141 Mat

The top surface of the mat plate has a stipple finish, set off by a narrow polished border.

The ribbed plate has a ribbed surface set off by a plain polished border; while the ornamental plate is also ribbed, but set off by a decorative border.

**For Square Handle Switches**

Mat Surface Cat. No.	Ribbed Surface Cat. No.	Orna-mental Surface Cat. No.	Per 100	Style Plates	Wt. Lbs. Std. Pkg.
†*7095	*9095	*4095	\$8.42	Single	10
†*7121	*9121	*4121	16.84	2-Gang	10
†*7122	*9122	*4122	25.26	3-Gang	10
7138	9138	4138	64.64	4-Gang	10
.....	9135	.....	90.90	5-Gang	10
.....	9136	.....	109.08	6-Gang	10

**Tandem Plates**

Mat Surface Cat. No.	Orna-mental Surface Cat. No.	Per 100	Ribbed Surface Cat. No.	Per 100	Style Plates	Wt. Lbs. Std. Pkg.
7139	4139	\$59.08	9139	\$65.00	2-Gang	10

**For 2-Button Push Switches**

Mat Surface Cat. No.	Ribbed Surface Cat. No.	Orna-mental Surface Cat. No.	Per 100	Style Plates	Wt. Lbs. Std. Pkg.
†*7141	*9141	*4141	\$8.42	Single	10
†*7142	*9142	.....	16.84	2-Gang	10
†*7143	*9143	.....	25.26	3-Gang	10
.....	9144	.....	60.40	4-Gang	10

†Price covers mat finish surface. For genuine sand blast finish add \$3.00 per 100 gangs.

\*Brown bakelite is standard for flush plates. For black bakelite add \$1.00 per 100 gangs. Regularly furnished with metal screws. When bakelite screws are furnished add \$1.00 per 100 gangs in standard package quantities. Duplex plates furnished with metal screws only.

Any of the above push switch plates may be assorted to obtain standard package or carton quantities.

Carton, 10 gangs; standard package, 100 gangs.

**Blank Plates**

7124	9124	4124	\$22.10	For Single Gang Box	16
7222	9222	4127	44.20	For 2-Gang Box	12

Carton, 10 gangs; standard package, 50 gangs.

**Telephone Outlet Plates**

7128	9128	4128	\$22.10	Single (Single Outlet)	15
.....	*9129	.....	36.36	2-Gang	12
.....	†9130	.....	36.36	2-Gang	12

Carton, 10 gangs; standard package, 50 gangs.

**Radio Outlet Plates for No. 2139 Outlet**

Mat Surface Cat. No.	Ribbed Surface Cat. No.	Per 100	Orna-mental Surface Cat. No.	Per 100	Style Plates	Wt. Lbs. Std. Pkg.
2142	2143	\$16.16	4128	\$22.10	Single	4

Carton, 10 gangs; standard package, 30 gangs.

\*No. 9129 has one 1 1/2-inch hole in center.

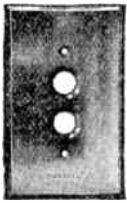
†No. 9130 has two 1 1/2-inch holes in tandem position in center.



## Hubbell Combination Brass Plates

Hubbell Combination Plates are made in .100-inch solid brass, struck up .060 and .040 inch brass. The standard finish is brush brass. If desired in Lacco finish specify and deduct 8 cents per gang from list prices. The advance for special finishes should be added to brush brass list

prices. If plates are ordered by letter only and no finish is specified, brush brass will be supplied. A combination plate must be made up of 2 or more different letters. For example: AA is not a combination plate.



**A** For Push Switch  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



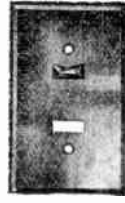
**C** With Round Bull's-eye for Pilot Light Receptacle  
\$.98—Solid  
.68—.060 Inch  
.62—.040 Inch



**T** With Rectangular Bull's-eye for Pilot Light Receptacle  
\$.98—Solid  
.68—.060 Inch  
.62—.040 Inch



**F** For No. 7712 Pilot Light Receptacle  
\$1.04—Solid



**S** For No. 7739 Switch and Bull's-eye  
\$1.04—Solid



**O** \*For 3/4-Inch Push Button  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**B** For Hubbell Round Handle Toggle Switches  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



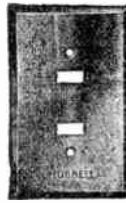
**D** \*For Outlet Box  
\$.68—Solid  
.38—.060 Inch  
.34—.040 Inch



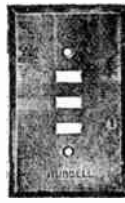
**P** For Square Handle Toggle Switch  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**Z** For Uniplex Switch with Square Handle  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**Q** For Duplex Switch with Square Handles  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**R** For Triplex Switch with Square Handles  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**L** For Uniplex Switch, Locking Type  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**U** For Duplex Switch, Locking Type  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



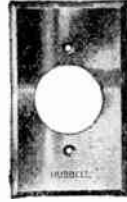
**V** For Triplex Switch, Locking Type  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**G** †For Single Convenience Outlets  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**Y** †For No. 7410 4-Wire Twist-Lock Receptacle Only  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**K** †For No. 7438 Receptacle Only  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**J** \*\*For No. 5579 Convenience Outlet Double Hinge Cover  
\$1.62—Solid



**H** For Duplex Convenience Outlet  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch

Also other Standard 2, 3 and 4-Wire Flush Receptacles with Round Faces



**M** \*For Telephone Outlet One Bushing  
\$.70—Solid  
.42—.060 Inch  
.36—.040 Inch



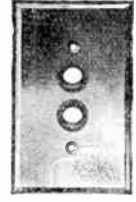
**N** \*For Telephone Outlet Two Bushings  
\$.76—Solid  
.48—.060 Inch  
.42—.040 Inch



**E** For Switch and Receptacle No. 8888 etc.  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**W** For Single Radio Outlet No. 2139  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch



**X** For Duplex Radio Outlet No. 2145  
\$.62—Solid  
.34—.060 Inch  
.28—.040 Inch

\*Screw spacing, 2 3/8 inches. Adapter to 3 3/32 inches for box mounting supplied with this section.

\*\*Only supplied in solid brass.

†Combinations embracing two adjacent G, Y, or K sections for Nos. 7250, 7310, 7410, or 7438 receptacles, require an extra blank gang between them to provide space for insertion of caps.

Standard package consists of 10 plates of one combination (not 10 gangs).

Carton consists of 1 plate.

Standard finish is brush brass, and will be so furnished unless otherwise specified.

The price of any combination plate up to and including 3-gangs is the sum of the individual prices of the component plates.

For combination plates of 4 or more horizontal gangs, add 25%. For tandem gangs, add 25% to price of horizontal plates. Tandem plates are supplied in solid brass only.

Hubbell Special Finishes

Sockets, Plug Material, Flush Plates and Metal Handles on Switches

Prices per 100 (To be Added to Price of Corresponding Device in Standard Finish)

Special Finish Description	Complete Brass Shell Sockets and Pull Switches		Brass Shell Socket and Pull Switch Parts				Brass Covered Plug Caps			Plates (B) (F) Flush Standard
	Key Keyless Push	Pull	Key Keyless Push Bodies	Pull Bodies	Caps Only	Brass Covered Bases Only	Switch Handles Shade Holders	10 A. Caps Standard	10 and 20 Amp. Large Polarized Caps	
Bakelite (Imitation).....	\$6.00	\$8.00	\$3.00	\$5.00	\$3.00	\$12.00	\$3.00	\$4.00	\$8.00	\$14.00
Barff, Bauer.....	6.00	8.00	3.00	5.00	3.00	12.00	3.00	4.00	8.00	14.00
(C) Brass, Brush.....	C	C	C	C	C	C	C	C	C	C
Brass, Flemish.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Brass, Oxidized.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Brass, Polished.....	6.00	8.00	3.00	5.00	3.00	12.00	3.00	4.00	8.00	14.00
Brass, Polished (Not Lacquered).....	6.00	7.00	3.00	4.00	3.00	12.00	3.00	4.00	7.00	14.00
Brass, Sand Blast Antique.....	22.00	24.00	11.00	13.00	11.00	30.00	11.00	12.00	24.00	42.00
Brass, Sand Blast Brush.....	18.00	20.00	9.00	11.00	9.00	28.00	9.00	8.00	20.00	35.00
(D) Bronze, Brush.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
(D) Bronze, Japanese (Dark).....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
(D) Bronze, Polished.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
(D) Bronze, Statuary (Light).....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
(D) Bronze, Sand Blast Ant.....	22.00	24.00	11.00	13.00	11.00	30.00	11.00	12.00	24.00	42.00
Chromium.....	22.00	24.00	11.00	13.00	11.00	30.00	11.00	12.00	24.00	42.00
Copper, Antique or Acid.....	16.00	18.00	8.00	10.00	8.00	25.00	8.00	10.00	18.00	28.00
Copper, Brush.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Copper, Oxidized.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Copper, Polished.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
(A) Enamel White (Lacquer).....	6.00	8.00	3.00	5.00	3.00	12.00	3.00	4.00	8.00	14.00
(B) Gold.....	B	B	B	B	B	B	B	B	B	B
Gun Metal.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Ivory (Lacquer).....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Nickel, Dull.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Nickel, Polished.....	10.00	12.00	5.00	7.00	5.00	16.00	5.00	8.00	12.00	21.00
Nickel, Sand Blast.....	22.00	24.00	11.00	13.00	11.00	30.00	11.00	12.00	24.00	42.00
Silver, Butler's (Brushed).....	20.00	30.00	10.00	20.00	10.00	25.00	10.00	14.00	30.00	63.00
Silver, Oxidized.....	20.00	30.00	10.00	20.00	10.00	25.00	10.00	14.00	30.00	63.00
Silver, Polished.....	20.00	30.00	10.00	20.00	10.00	25.00	10.00	14.00	30.00	63.00
Silver, Satin.....	20.00	30.00	10.00	20.00	10.00	25.00	10.00	14.00	30.00	63.00
Verde, Antique (Lacquer).....	6.00	8.00	3.00	5.00	3.00	12.00	3.00	4.00	8.00	14.00

Socket Material

(A) Pull devices in white finish but with chain eyelet, chain and acorn in any electro plated finish except brush brass add \$2.00 per 100 advance over price shown for key, keyless and push sockets.

(B) Finishes not listed, prices on application.

Pull devices in brush brass finish but chain, tassel and eyelet in other finishes add to list difference between columns 1 and 2.

(C) Standard finish on brass shell devices is brush brass. Furnished on all orders where no finish is specified.

Plated finish on pull chain parts furnished at an addition of \$2.00 per 100. Subject to quantity reduction.

Standard and special finishes of one catalogue number may be assorted to make up standard packages.

The above prices for special finishes apply to small lots. When ordering in quantity lots of one finish, one shipment, single or assorted catalogue numbers, they are reduced as follows:

Lots 250 to 499, finish price reduced 10%.

Lots 500 to 999, finish price reduced 20%.

Lots 1000 and over, finish price reduced 50%.

These quantity deductions should be made from prices of finishes before the trade discounts are figured.

Assembled or unassembled sockets with brush brass but unlacquered shells take same price as brush brass.

Plug Caps and Flush Plates

(D) For genuine bronze plates, prices on application.

(E) These prices should be added to brush brass prices and not Lacco.

(F) Prices applying to finishes on standard flush plates are based on single plates. When ordering gangs, add \$14.00 per 100 gangs for each gang beyond the first, regardless of finish except gold.

The above prices for special finishes apply to small lots. When ordering in quantity lots of one finish, one shipment, single or assorted catalogue numbers, they are reduced as follows:

100 to 499 gangs or caps, finish price reduced 10%.

500 to 999 gangs or caps, finish price reduced 20%.

1000 gangs or caps and over, finish price reduced 50%.

These quantity deductions should be made from prices of finishes before trade discounts are figured.

Unfinished flush plates, that are polished and buffed, will be supplied at same price as polished brass plates or at same price as brush brass if ground but not polished.

Unfinished flush plates, not polished or buffed (in rough state) will be furnished at same price as Lacco plates.

For ivory or white enamel finish on bakelite plates add the same extra as for brass plates.

## H & H Pony Size Surface Tumbler Switches

With Nickel Cover (Snap Fastening)



With polished nickel covers and indicating handles.  
Diameter of base, 2 inches.  
Height, 1 7/8 inches.

### Single-Pole

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Per 100	Description	Screw Spacing In.	Car-ton	Std. Pkg.	Wt. Lbs.
610	\$36.00	Solid, Indicating.....	1 7/16	10	100	25
611	36.00	Slotted, Indicating.....	1 7/16	10	100	24

### 3-Way

5 Amperes, 125 Volts; 2 Amperes, 250 Volts

612	\$67.88	Solid, Indicating.....	1 7/16	10	100	28
613	67.88	Slotted, Indicating.....	1 7/16	10	100	28

## H & H Surface Pony Tumbler Switches

For Outlet Boxes—With Nickel Switch Covers



Japanned box covers are standard.  
Diameter of Nos. 6064 and 6068, 3 7/16 inches.  
Diameter of Nos. 6065 and 6069, 4 1/16 inches.

### Single-Pole

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Per 100	Description	Screw Spacing In.	Car-ton	Std. Pkg.	Wt. Lbs.
6064	\$43.00	With 3 1/4-inch Cover...	2 3/4	5	50	24
6065	44.00	With 4-Inch Cover.....	3 1/2	5	50	30

### 3-Way

5 Amperes, 125 Volts; 2 Amperes, 250 Volts

6068	\$74.94	With 3 1/4-Inch Cover...	2 3/4	5	50	25
6069	77.78	With 4-Inch Cover.....	2 3/4	5	50	30

## H & H Surface Tumbler Switches

With Nickel Covers



With slotted base and polished nickel covers.

Diameter of base, 2 1/2 inches.

Screws spaced 1 3/4 inches on centers.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs.
			125 Volts	250 Volts			
8472	\$84.00	Single-Pole	10	5	10	100	41
8474	118.22	Double-Pole	..	10	10	100	44
8490	233.32	Double-Pole	..	20	10	30	22
8476	118.22	3-Way.....	10	5	10	50	25

## H & H Surface Tumbler Switches



No. 6085

With Outlet Box Cover

and Nickel Switch Cover

Cat. No.	Per 100	Description	Size Cover In.	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs.
				125 Volts	250 Volts			
6081	\$91.76	Single-Pole	3 1/4	10	5	10	50	30
6085	94.88	Single-Pole	4	10	5	10	50	35
6082	125.98	Double-Pole	3 1/4	..	10	10	50	33
6086	129.10	Double-Pole	4	..	10	10	50	38
6083	125.98	3-Way.....	3 1/4	10	5	10	50	33
6087	129.10	3-Way.....	4	10	5	10	50	33

For bakelite switch cover, add BC to Cat. No.; there is no difference in prices.

## H & H Surface Switches



### Single-Pole

Small Size: 5 Amperes, 125 Volts; 3 Amperes, 250 Volts  
Diameter base, 2 inches. Height over all, 1 3/8 inches.

Cat. No.	Per 100	Description	Screw Spacing In.	Car-ton	Std. Pkg.	Wt. Lbs.
2162	\$42.00	Solid, Indicating.....	1 13/16	10	100	24
2163	42.00	Slotted, Indicating.....	1 13/16	10	100	23

Large Size: 5 Amperes, 125 Volts; 3 Amperes, 250 Volts  
Diameter base, 2 1/8 inches. Height over all, 1 3/4 inches.

220	\$56.56	Solid, Indicating.....	1 7/16	10	100	26
320	56.56	Slotted, Indicating.....	1 7/16	10	100	25

10 Amperes, 125 Volts; 5 Amperes, 250 Volts  
Diameter base, 2 1/2 inches. Height over all, 2 1/16 in.

221	\$84.00	Solid, Indicating.....	1 3/4	10	100	41
321	84.00	Slotted, Indicating.....	1 3/4	10	100	40

### Double-Pole

5 Amperes, 250 Volts

2087	\$99.54	Solid, Indicating.....	1 7/16	10	100	33
2088	99.54	Slotted, Indicating.....	1 7/16	10	100	33

10 Amperes, 250 Volts

222	\$118.22	Solid, Indicating.....	1 3/4	10	100	50
322	118.22	Slotted, Indicating.....	1 3/4	10	100	50

### 3-Way

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

2152	\$67.88	Solid, Non-Indicating..	1 7/16	10	100	31
2153	67.88	Slotted, Non-Indicating	1 7/16	10	100	31

5 Amperes, 125 Volts; 3 Amperes, 250 Volts

2089	\$79.18	Solid, Non-Indicating..	1 7/16	10	100	33
2090	79.18	Slotted, Non-Indicating	1 7/16	10	100	33

## H & H Push Switches

With Porcelain Base



No. 4401



No. 2081

Depth, 1 Inch

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs.
			125 Volts	250 Volts			
4401	\$38.88	Single-Pole.....	10	5	10	100	31
4402	108.88	Double-Pole.....	..	10	10	50	17
4403	55.56	3-Way.....	10	5	10	50	17
4404	311.08	4-Way.....	5	2	2	10	8

Metal buttons supplied when specified; add M to Cat. No. Price upon application.

Wide plaster ears are optional; add G to Cat. No.

Lock Type—Depth, 1 Inch

4401-L	\$126.38	Single-Pole.....	10	5	10	100	31
4403-L	161.56	3-Way.....	10	5	10	50	17

One No. 5003 Key is furnished with each lock switch.

Depth, 1 1/2 Inches

2081	\$70.00	Single-Pole.....	10	5	10	100	49
2082	108.88	Double-Pole.....	10	10	10	50	29
2083	108.88	3-Way.....	10	5	10	50	29
2084	311.08	4-Way.....	10	5	2	10	9

Metal buttons supplied when specified; add M to Cat. No.

Lock Type—Depth, 1 1/2 Inches

2081-L	\$133.00	Single-Pole.....	10	5	10	100	50
2083-L	171.88	3-Way.....	10	5	10	50	30

One key is furnished with each lock switch.



**H & H Tumbler Switches**  
**Square Handle, Shallow 1-Inch Base**  
**Porcelain Base**

Wide plaster ears and brown handles are standard. Black handles supplied on special order.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
			125 V.	250 V.			
8601	\$32.00	Single-Pole	10	5	10	100	30
8602	84.00	Double-Pole	10	5	10	50	17
8603	50.00	3-Way	10	5	10	50	21
8604	280.00	4-Way	5	2	2	10	8



No. 8601



No. 731



No. 1611



No. 8601-L

**Roller Contact Type**

Wide plaster ears and brown handles are standard.

701	\$32.00	Single-Pole	10	5	10	100	26
703	50.00	3-Way	10	5	10	50	17

**Composition Base**

Brown handles are standard. Black handles supplied on special order.

Wide plaster ears are optional. Add G to Cat. No. if desired.

May be furnished with luminous jewel in operating lever at 50 cents each additional. Prefix RB to Cat. No.

1611	\$77.78	Single-Pole	10	5	10	50	17
1612	127.26	Double-Pole	10	5	10	2	10
1613	98.98	3-Way	10	5	10	20	10
1614	311.08	4-Way	5	2	2	10	8

**Lock Type—Porcelain Base**

Wide plaster ears are standard. No. 5003 Key furnished with each lock switch.

8601-L	\$112.28	Single-Pole	10	5	10	100	30
8603-L	133.48	3-Way	10	5	10	50	17

**Lock Type—Composition Base**

Wide plaster ears are optional. Add G to Cat. No. if desired.

1611-L	\$140.78	Single-Pole	10	5	10	50	17
1613-L	162.62	3-Way	10	5	10	20	10

**H & H Type C Flush Tumbler Switches**  
**For Type C Gas Filled Lamps**

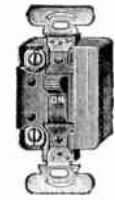
Specially built to handle the initial current surge of gas filled medium size lamps.

Base is all bakelite, 2 inches deep.

Special phosphor bronze blades and contacts with large surfaces provide for the absorption and dissipation of heat.

Two arc snuffers cut off the arc and greatly increase breaking capacity.

Fit standard tumbler switch plates.



No. 4281

**20 Amperes, 250 Volts**

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
			125 Volts	250 Volts			
4281	\$127.26	Single-Pole	30	10	30	20	
4282	141.40	Double-Pole	20	2	10	6	
4283	141.40	3-Way	20	2	10	6	
4286	424.20	4-Way	20	10	2	10	6
4284	141.40	Single-Pole, Quadruple Break	20	2	10	6	
4285	141.40	Single-Pole, Multiple Break	20	2	10	6	

Also furnished in lock type.

**30 Amperes**

Current carrying parts of these switches are three times heavier than ordinary switches to withstand the terrific smash of the largest cold Type C Lamps.

The mechanism has a kick-off or self starting feature which makes it impossible for the mechanism to stick.

4271	\$151.90	Single-Pole	30	10	30	20	
4272	201.50	Double-Pole	30	2	10	6	
4273	201.50	3-Way	30	2	10	6	
4274	607.62	4-Way	20	10	2	10	6
4275	201.50	Single-Pole, Quadruple Break	30	2	10	6	
4276	201.50	Single-Pole, Multiple Break	30	2	10	6	

Also furnished in lock type.

**H & H Time-Saver Switches**

Switches fit standard plates, brass or bakelite. Switch mechanisms are fully enclosed in a one-piece bakelite base. Combinations come ready wired, completely assembled, all made up ready to install on the job.

**Single Switches**

Supplied in lock style when specified.

Cat. No.	Per 100	Description	AMPERES		Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
			125 V.	250 V.			
TL-1	\$32.00	Single-Pole	10	5	10	100	18
TL-2	84.00	Double-Pole	10	5	10	50	17
TL-3	50.00	3-Way	10	5	10	50	21
TL-4	280.00	4-Way	5	2	2	10	8



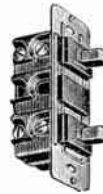
No. TL-1

**2-Lever Switch Combinations**

Supplied in lock style when specified. If only one lock is wanted instructions must be given on order.

Carton, 2. Standard package, 10.

Cat. No.	Per 100	Description	Pkg. Wt. Lbs.
TL-11	\$64.00	2 Single-Pole	3
TL-13	82.00	1 S. P. and One 3-Way	3
TL-33	100.00	Two 3-Way	3



No. TL-11

**3-Lever Switch Combinations**

Supplied in lock style, but instructions must be given as to lock units desired.

TL-111	\$96.00	3 Single-Pole	3
TL-113	114.00	2 S. P. and One 3-Way	3

**Switches and Receptacles**

Carton, 2. Standard package, 10.

Cat. No.	Per 100	Description	Pkg. Wt. Lbs.
TL-15	\$42.00	S.P. Switch and Receptacle	3
TL-115	79.00	2 S.P. Switches and Recept.	3
TL-155	62.00	1 S.P. Switch and 2 Recept.	3



No. TL-15

**Switches and Pilot Lights**

Carton, 2. Standard package, 10.

TL-61	\$127.50	Light and 1 S.P. Switch	3
TL-611	159.50	Light and 2 S.P. Switches	4

**Pilot Lights and Receptacles**

Receptacles and pilot lights are connected.

Carton, 2. Standard package, 10.

Cat. No.	Per 100	Description	Pkg. Wt. Lbs.
TL-67	\$120.50	Pilot Light and Receptacle	3
TL-677	145.50	Pilot Light and 2 Receptacles	3

**Pilot Lights, Switches and Receptacles**

Receptacle and pilot light are connected in combination TL-617.

Carton, 2. Standard package, 10.

Cat. No.	Per 100	Description	Pkg. Wt. Lbs.
TL-615	\$142.50	Pilot Light, S.P. Switch and Receptacle	3
TL-617	152.50	Pilot Light, S.P. Switch and Receptacle	3



No. TL-617

**No. 7903-R Red Lamps for Pilot Lights**

For replacements on TL combinations.

125-Volt Lamps ..... per 100

**3-Outlet Receptacles and Plates**

Plate is included with No. TL-555.



No. TL-555



No. TL-A

Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
TL-555	\$39.00	Receptacle and Plate	2	10	5
TL-A	5.50	Pull Handle Cap.	10	100	5

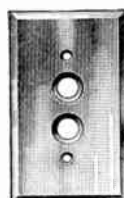
## H & H Plates

### For Push Switches

Carton, 10 gangs. Standard package, 100 gangs.  
All plates for push switches may be assorted in standard packages and cartons.

#### Struck-Up, .040 Brass

Brush Brass		Duro Finish		For No. of Switches	Pkg. Wt. Lbs.
Cat. No.	Per 100	Cat. No.	Per 100		
4077	\$12.00	4077-D	\$10.50	1	19
4078	24.00	4078-D	21.00	2	16



No. 4077

### For Square Handle Tumbler Switches

Carton, 10 gangs. Standard package, 100 gangs.

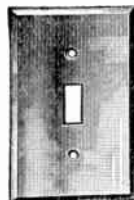
All plates for square handle tumbler switches may be assorted in standard packages and cartons.

#### Struck-Up, .040 Brass

8841	\$12.00	8841-D	\$10.50	1	19
8842	24.00	8842-D	21.00	2	16
8843	36.30	8843-D	31.56	3	14

#### Struck-Up, .060 Brass

8861	\$22.10	8861-D	\$20.52	1	26
8851	\$52.64	8851-D	\$51.06	1	32



No. 8841

### For Duplex Convenience Outlets

Carton, 10 gangs. Standard package, 100 gangs.

All duplex receptacle plates may be assorted in standard packages and cartons.

#### Struck-Up, .040 Brass

1485	\$12.00	1485-D	\$10.50	1	16
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### For Single Convenience Outlets Without Lid

Carton, 10 gangs. Standard package, 100 gangs.

Single outlet plates may be assorted.

8631	\$12.00	8631-D	\$10.50	1	18
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No. 1485

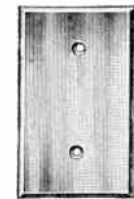
## H & H Plates

### Blank Plates

Carton, 10 gangs; standard package, 50.  
All blank plates may be assorted for standard packages and cartons.

#### .040-Inch Brass

Brush Brass		Duro Finish		No. Gangs	Pkg. Wt. Lbs.
Cat. No.	Per 100	Cat. No.	Per 100		
4068	\$25.46	4068-D	\$23.88	1	11



No. 4068

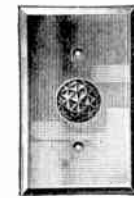
### For Bull's-Eye Receptacles

#### With Ruby Bull's-Eye

Carton, 10 gangs; standard package, 30.  
All bull's-eye plates may be assorted for standard packages and cartons.

#### .040-Inch Brass

8691	\$47.46	8691-D	\$45.88	1	10
3000	\$88.00	3000-D	\$86.42	1	13



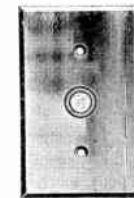
No. 8619

### Bell Bush Plate With Push Button

Carton, 10. Standard package, 50.  
Screw holes spaced  $2\frac{3}{8}$  inches on centers.

#### Solid Brass

3141	\$118.78	3141-D	\$113.12	1	21
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No. 3141

### For Telephone Outlets

Carton, 10 gangs; standard package, 50.  
All telephone plates may be assorted in standard packages and cartons.

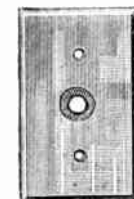
Screw holes spaced  $2\frac{3}{8}$  inches on centers. This is a standard spacing and accomplished by using a sub-frame which is fastened to the box, and the plate is then attached to this frame, thus allowing adjustment for unevenness in box installation.

#### Single Outlet, .040-Inch Brass

3144	\$28.28	3144-D	\$26.70	1	10
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#### Double Outlet, .040-Inch Brass

3244	\$33.94	3244-D	\$28.28	1	10
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No. 3144

## H & H Hegemite Plates

### For Push Switches

CAT. NOS.		Per 100	No. Gangs	Carton	Std. Pkg.	Pkg. Wt. Lbs.
Matte Surface	Border Design					
8982	9011	\$10.48	1	10	100	11
8982-2	9012	23.00	2	10	100	10



No. 9021

### For Square Handle Tumbler Switches

8981	9021	\$10.48	1	10	100	11
8981-2	9022	20.94	2	10	100	8
8981-3	9023	31.60	3	10	100	8
8981-4	9024	64.64	4	10	100	8



No. 9030

### For Single Convenience Outlets

8983	9030	\$10.48	1	10	100	10
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### For Duplex Convenience Outlets

8984	9040	\$9.48	1	10	100	10
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No. 8968

### For Blank Plates

8987	9034	\$22.10	1	10	50	7
8990	9035	44.20	2	10	50	7

### For Telephone Plates

One opening.						
8988	9036	\$22.10	1	10	50	6

### Miscellaneous Plates

Carton, 2 gangs. Standard package, 10 gangs.

#### For Switch and Receptacle

CAT. NOS.		Per 100	No. Gangs	Pkg. Wt. Lbs.
Matte Surface	Border Design			
8968	.....	\$21.82	1	3

#### For Switch and Duplex Outfit

8986	9019	\$30.00	2	3
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#### For 2 Switches and Duplex Outlet

.....	9056	\$54.54	3	4
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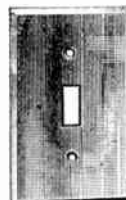
No. 8986

## H & H Duracrome Plates

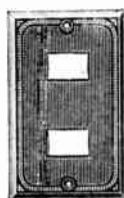
Of .040-inch brass, dull chromium finished.

Carton, 10 gangs. Standard package, 100 gangs.

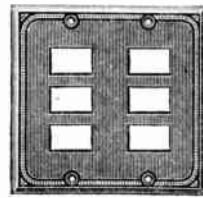
Cat. No.	Per 100	Description	No. Gangs	Pkg. Wt. Lbs.
4151	\$30.00	For Tumbler Switch...	1	19
4150	30.00	For Duplex Receptacle	1	16



## H & H Time-Saver Bakelite Plates



No. 9060



No. 9063

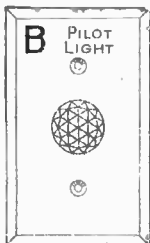
Cat. No.	Per 100	Description	Carton	Std. Pkg.	Pkg. Wt. Lbs.
9060	\$15.00	1 Gang, 2 Openings	10	50	5
9061	21.00	1 Gang, 3 Openings	5	25	2
9062	30.00	2 Gangs, 4 Openings	5	25	2
9063	42.00	2 Gangs, 6 Openings	2	20	2



**H & H Plates**

**Symbols for Plates in Combinations**

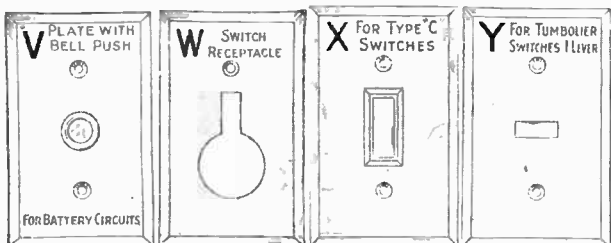
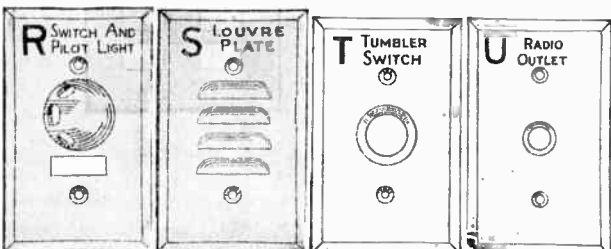
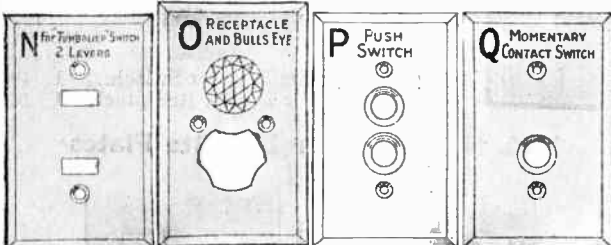
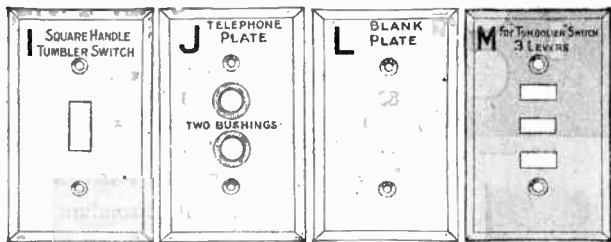
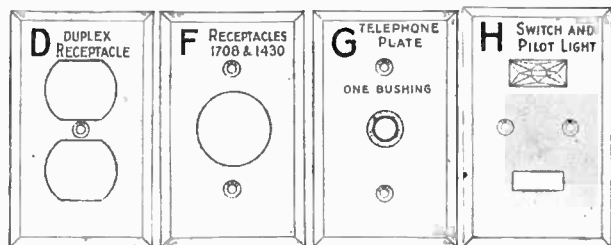
Standard combination plates of at least two different units are made up to order, from the units listed below. If spacings or dimensions differ from the standard units, special plate prices apply.



The price of a combination plate is the sum of the individual prices of the component plates. For a tandem combination, or a combination plate in which the gangs are placed in more than one row, add 25 per cent to the prices shown. For example, if plate PBD were a tandem plate, the price would be \$2.22 plus 25 per cent or \$2.77.

Standard package is 10 separate plates of the same combination.

Standard finish is brush brass.



**H & H Bakelite Canopy Pull Switches**

These switches can be wired easily and quickly, without removing the mechanism. Just slip off the bakelite disc, attach the wires and replace the disc, bending down the tab. Made of lustrous brown bakelite.

Possibility of shorting is eliminated—current carrying parts are enclosed in a bakelite compartment separated and insulated from all other metal parts.

**Regular Style, without Mounting Attachment**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Furnished with short chain and 6-foot cord.



Cat. No.	Per 100	Length Stem In.	Car-ton	Std. Pkg.	Pkg. Wt. Lbs.
7745	\$70.00	1/4	10	100	12
7746	70.00	3/8	10	100	12
No. 7745	7716	5/8	10	100	12

**With Adjustable U Bracket**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



For pan type fixtures. Adjustable for any depth of pan. Gives a rigid, straight down easy pull.

Offers greater wiring convenience and economy of installation.

Complete with short chain and 6-foot cord.

7745-B	\$70.00	1/4	10	100	17
7746-B	70.00	3/8	10	100	17
7716-B	70.00	5/8	10	100	17

No. 7745-B

**With Z Bar**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



A new, rigid canopy switch support. Fastens to fixture stud with lock nut and switch is attached to Z bar with stem. Affords a straight down pull, removing all strain from the canopy.

The short chain and 6-foot cord go out through a small knockout in lower side of canopy.

7745-Z	\$70.00	1/4	10	100	17
7746-Z	70.00	3/8	10	100	17
7716-Z	70.00	5/8	10	100	17

No. 7745-Z

**With Chain Link**

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



Used between any two links. Tighten the stem and the switch is locked to the chain. It can't slip out or pull out. Makes a stable permanent installation. Furnished with short chain and 6-foot cord.

Standard finish is statuary bronze, but brass, black, or nickel is optional.

7745-II	\$70.00	1/4	10	100	17
7746-II	70.00	3/8	10	100	17
7716-II	70.00	5/8	10	100	17
*7746-AH	70.00	3/8	10	100	17

No. 7746-AH

\*Angle pull.

**Rotary Switches**

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Depth of rotary switch, 3/8 inch.

Diameter of stem, 5/8 inch.



Fitted with 6-inch No. 48 stranded fixture wire. Wires up to and including 8 inches supplied without extra charge. For longer wires, add 9 cents per foot for each conductor.

Standard finish is brass on exposed parts, but wash nickel, bronze, or black is optional.

No. 7776

**With Removable Metal Handles**

7776	\$15.80	5/16	25	100	25
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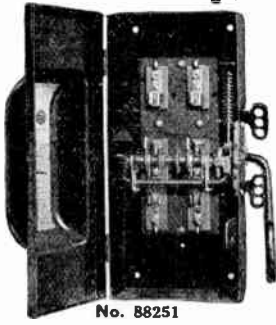
**With Fixed Metal Handles**

No. 7784	7784	\$15.80	5/16	25	100	25
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No. 7784



## Type A Square D Safety Switches Quick-Make and Quick-Break Interlocked Cover Control Single Throw—Fusible



No. 88251

All switch parts are mounted on individual insulating bases, making it possible to remove and replace any switch part from the front of the switch in a few minutes time.

The cover control makes it impossible to open the cover when the switch is in the "on" position. Prevents operation of switch with box cover open.

Positive quick-make and quick-break action prevents the arc from holding and burning blades and jaws.

### 230 Volts A.C., 250 Volts D.C.

Cat. No.	Each	Amp.	H.P.	Poles	Box No.	Wt. lbs.
*88251	\$12.00	30	2	2	424-K	117
88252	15.00	60	5	2	424-K	16
88253	23.00	100	15	2	428-T	25
88254	40.00	200	30	2	431-X	56
88255	90.00	400	..	2	459-D	90
88256	130.00	600	..	2	464-C	155
†88257	220.00	800	..	2	.....	160
†88258	305.00	1200	..	2	.....	238
†88259	560.00	1800	..	2	.....	..
†88250	680.00	2400	..	2	.....	..
*88351	15.00	30	3	3	430-M	20
88352	20.00	60	5	3	430-M	20
88353	30.00	100	10	3	433-M	38
88354	45.00	200	25	3	431-X	63
88355	100.00	400	..	3	456-C	135
88356	155.00	600	..	3	463-E	240
†88357	300.00	800	..	3	.....	280
†88358	385.00	1200	..	3	.....	350
†88359	790.00	1800	..	3	.....	..
†88350	935.00	2400	..	3	.....	..
*88451	18.00	30	3	4	425-BB	24
88452	24.00	60	7½	4	425-BB	24
88453	40.00	100	15	4	431-Y	55
88454	60.00	200	30	4	437-G	86
88455	130.00	400	..	4	456-D	150
88456	205.00	600	..	4	463-F	275
†88457	385.00	800	..	4	.....	347
†88458	510.00	1200	..	4	.....	590
†88459	1020.00	1800	..	4	.....	..
†88450	1260.00	2400	..	4	.....	..

### Equipped with Arc Suppressors 575 Volts A.C., 600 Volts D.C.

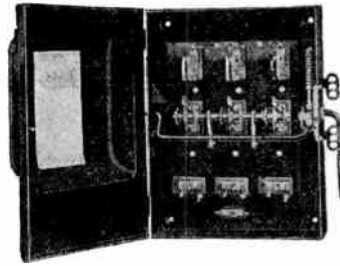
*88261	\$18.00	30	5	2	430M	34
88262	19.00	60	15	2	425-BB	26
88263	30.00	100	30	2	433-M	44
88264	47.00	200	50	2	461-J	70
88265	110.00	400	..	2	462-D	135
88266	175.00	600	..	2	463-E	224
▲†88247	270.00	800	..	2	.....	..
▲†88248	380.00	1200	..	2	.....	..

### 575 Volts A.C.

*88341	\$22.00	30	7½	3	425-BB	25
88342	23.00	60	15	3	425-BB	25
88345	35.00	100	30	3	433-M	41
88344	58.00	200	50	3	461-J	70
88345	120.00	400	..	3	462-D	145
88346	200.00	600	..	3	463-E	250
†88347	350.00	800	..	3	.....	260
†88348	460.00	1200	..	3	.....	350
*88441	27.00	30	10	4	445-L	32
88442	29.00	60	20	4	445-L	32
88443	46.00	100	40	4	431-Y	45
88444	70.00	200	50	4	437-G	80
88445	155.00	400	..	4	462-E	160
88446	240.00	600	..	4	463-F	285
†88447	450.00	800	..	4	.....	280
†88448	575.00	1200	..	4	.....	370

\*60-ampere switch with 30-ampere fuse spacing and clips.  
†Double lugs. ††Triple lugs. †††Quadruple lugs. These are quick-break only with no cover control.  
▲575 volts only.

## Type A Square D Safety Switches Solid and Switched—Neutral Switches Quick-Make and Quick-Break Interlocked—Cover Control—Positive—Pressure Fuse Clips Single Throw—Fusible



No. 89412

All switch parts are mounted on individual insulating bases, making it possible to remove and replace any switch part from the front of the switch in a short time.

Positive quick-make and quick-break action prevents the arc from holding and burning blades and jaws.

### 230 Volts A.C., 250 Volts D.C. 3-Wire Solid Neutral (2 Blades, 2 Fuses)

Cat. No.	Each	Amps.	Box No.	Weight Pounds
89311	\$14.00	30	424-K	17
89312	17.00	60	424-K	17
89313	27.00	100	428-T	25
89314	44.00	200	431-X	46
89315	100.00	400	459-D	90
89316	145.00	600	464-C	155
†97317	240.00	800	.....	160
†97318	340.00	1200	.....	238

### 3-Wire Switched Neutral (3 Blades, 2 Fuses)

*89351	\$15.00	30	430-M	19
89352	20.00	60	430-M	20
89353	30.00	100	433-M	38
89354	45.00	200	431-X	63
89355	100.00	400	456-C	135
89356	155.00	600	463-E	240
†89357	300.00	800	.....	280
†89358	385.00	1200	.....	350
†89359	790.00	1800	.....	..
†89350	935.00	2400	.....	..

### 4-Wire Solid Neutral (3 Blades, 3 Fuses)

*89411	\$18.00	30	430-M	20
89412	23.00	60	430-M	20
89413	36.00	100	433-M	38
89414	55.00	200	431-X	63
89415	115.00	400	456-C	135
89416	175.00	600	463-E	240
†97417	340.00	800	.....	280
†97418	420.00	1200	.....	350

### 5-Wire Solid Neutral (4 Blades, 4 Fuses)

*89511	\$21.00	30	425-BB	24
89512	27.00	60	425-BB	24
89513	45.00	100	431-Y	55
89514	70.00	200	437-G	86
89515	145.00	400	456-D	150
89516	225.00	600	463-F	275

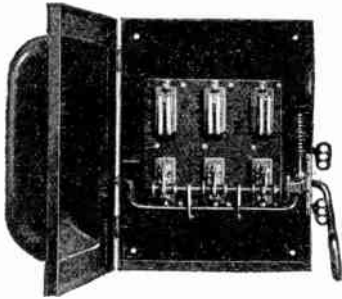
### 575 Volts A.C.

#### 3-Wire Switched Neutral (3 Blades, 2 Fuses)

*89341	\$22.00	30	453-C	32
89342	23.00	60	433-J	32
89343	35.00	100	431-H	45
89344	58.00	200	437-C	80
89345	120.00	400	.....	160
89346	200.00	600	.....	285
†89347	350.00	800	.....	..
†89348	460.00	1200	.....	..

\*60-ampere switch with 30-ampere fuse spacing and clips.  
†Double lugs. Standard single lugs furnished on order.  
Quick-break only. No cover control.  
††Triple lugs. Quick-break only. No cover control.  
†††Quadruple lugs. Quick-break only. No cover control.

**Type A Square D Safety Switches**  
**Quick-Make and Quick-Break**  
 Interlocked Cover Control  
**Single Throw—Not Fusible**



No. 84343

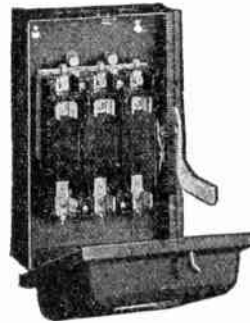
All switch parts are mounted on individual insulating bases, making it possible to remove and replace any switch part from the front of the switch in a few minutes' time.

Positive quick-make and quick-break action prevents the arc from holding and burning blades and jaws.

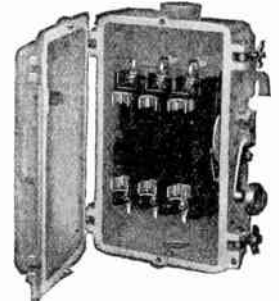
Square D Cover Control makes it impossible to open the box cover when the switch is in the "on" position. It also prevents the operation of the switch with the box cover open. By means of a key authorized persons can open the cover when the switch is "on" and can operate the switch when the cover is open.

**50,000 Line of Square D Compact Switches**

**Quick-Make and Quick-Break**  
 Interlocked



Switch in Standard Sheet Metal Box



Dust-Tight, Weatherproof Cast Iron Box

**Single Throw—Fusible**  
 230 Volts A.C.—250 Volts D.C.  
 2-Pole

**230 Volts A.C., 250 Volts D.C.**

Cat. No.	Each	Amp.	H.P.	Poles	Box No.	Wt. Lbs.
84251	\$11.00	30	5	2	447-W	15
84351	13.00	30	10	3	448-V	20
84451	18.00	30	10	4	448-V	25

**230-275 Volts A.C., 250-600 Volts D.C.**

84262	\$15.00	30-60	15	2	447-W	16
84263	23.00	100	40	2	430-N	23
84264	31.00	200	50	2	428-W	40
84265	90.00	400	..	2	461-H	78
84266	130.00	600	..	2	466-B	120
*†84247	195.00	800	..	2	..	135
*†84248	265.00	1200	..	2	..	200
*†84249	460.00	1800	..	2	..	..
*†84240	580.00	2400	..	2	..	..

**Equipped with Arc Suppressors**

**230-575 Volts A.C.**

84342	\$18.00	30-60	25	3	448-V	21
84343	27.00	100	40	3	425-FF	29
84344	38.00	200	50	3	455-D	55
84345	100.00	400	..	3	460-E	102
84346	160.00	600	..	3	465-C	134
†84347	260.00	800	..	3	..	170
†84348	350.00	1200	..	3	..	208
†84349	615.00	1800	..	3	..	..
†84340	845.00	2400	..	3	..	..
84442	24.00	30-60	30	4	448-V	29
84443	35.00	100	40	4	453-J	36
84444	51.00	200	50	4	546	90
84445	130.00	400	..	4	460-F	120
84446	195.00	600	..	4	547	185
†84447	335.00	800	..	4	..	205
†84448	460.00	1200	..	4	..	255
†84449	895.00	1800	..	4	..	..
†84440	1110.00	2400	..	4	..	..

\*250 volts d.e., 575 volts a.e. only.

†Double lugs. Standard single lugs furnished on order. Quick-break only. No cover control.

††Triple lugs. Quick-break only. No cover control.

‡Quadruple lugs. Quick-break only. No cover control.

Sheet Metal Boxes Front Operated		Castiron Boxes Side Operated		Amps.	H. P. Rating
Cat. No.	Each	Cat. No.	Each		
56251	\$12.00	55251	\$36.00	30	2
56252	15.00	55252	43.50	60	5
56253	23.00	55253	135.00	100	..
56254	40.00	55254	155.00	200	..
3-Pole					
56351	\$15.00	55351	\$37.50	30	3
56352	20.00	55352	45.50	60	5
56353	30.00	55353	145.00	100	..
56354	45.00	55354	172.00	200	..
3-Wire, Switched Neutral					
59351	\$15.00	50351	\$37.50	30	3
59352	20.00	50352	45.50	60	5
59353	30.00	50353	145.00	100	..
59354	45.00	50354	172.00	200	..
3-Wire, Solid Neutral					
59311	\$14.00	50311	\$37.50	30	3
59312	17.00	50312	45.50	60	5
59313	27.00	50313	145.00	100	..
59314	44.00	50314	172.00	200	..

**575 Volts A.C. —600 Volts D.C.**

2-Pole		3-Pole		Amps.	H. P. Rating
Cat. No.	Each	Cat. No.	Each		
56261	\$18.00	55261	\$45.00	30	5
56262	19.00	55262	45.00	60	15
56263	30.00	55263	154.00	100	..
56264	47.00	55264	179.00	200	..
3-Pole					
56341	\$22.00	55341	\$47.50	30	7½
56342	23.00	55342	47.50	60	15
56343	35.00	55343	158.50	100	..
56344	58.00	55344	191.00	200	..

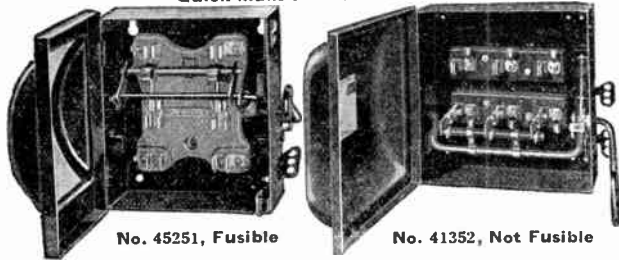
**Single Throw—Not Fusible**

**575 Volts A.C. —600 Volts D.C.**

2-Pole		3-Pole		Amps.	H. P. Rating
Cat. No.	Each	Cat. No.	Each		
51261	\$11.00	53261	\$35.50	30	5
51262	15.00	53262	43.00	60	15
51263	23.00	53263	150.00	100	..
51264	31.00	53264	175.00	200	..
3-Pole					
51341	\$13.00	53341	\$36.50	30	10
51342	18.00	53342	45.00	60	25
51343	27.00	53343	154.00	100	..
51344	38.00	53344	187.00	200	..

## Type C Square D Safety Switches

Quick Make and Quick Break



### Single Throw—Fusible

Cat. No.	Each	230 Volts A. C.	Amps.	H.P.	Volts D. C.	Poles	Box No.	Wt. Lbs.
45251	\$4.00	30	2	2	442-N	5		
*46251	9.00	30	2	2	447-S	14		
46252	10.00	60	3	2	447-S	14		
46253	16.00	100	7½	2	430-V	20		
46254	22.00	200	15	2	428-Z	38		
46255	64.00	400	...	2	459-G	85		
46256	99.00	600	...	2	464-D	...		
45351	6.00	30	3	3	423-M	10		
*46351	11.00	30	3	3	430-T	18		
46352	11.00	60	5	3	430-T	16		
46353	20.00	100	10	3	425-AD	27		
46354	29.00	200	25	3	431-J	46		
46355	74.00	400	...	3	456-E	130		
46356	115.00	600	...	3	463-G	...		
48351	6.00	30	...	3SWN	423-M	10		
47352	11.00	60	...	3SWN	430-T	16		
47353	20.00	100	...	3SWN	425-AD	27		
47354	29.00	200	...	3SWN	431-J	46		
47355	74.00	400	...	3SWN	456-E	130		
47356	115.00	600	...	3SWN	463-G	...		
45451	13.00	30	3	4	440-E	12		
*46451	15.00	30	3	4	425-AB	21		
46452	15.00	60	7½	4	425-AB	22		
46453	30.00	100	15	4	431-Z	44		
46454	48.00	200	30	4	437-G	90		
46455	105.00	400	...	4	456-D	150		
46456	165.00	600	...	4	463-F	...		

### 575 Volts A.C.—With Arc Suppressors

46341	\$12.00	30	7½	3	430-T	18		
46342	15.00	60	15	3	425-AB	17		
46343	28.00	100	30	3	428-Y	27		
46344	42.00	200	50	3	431-J	65		
46441	20.00	30	10	4	445-M	27		
46442	22.00	60	20	4	445-M	32		
46443	40.00	100	40	4	431-Z	55		
46444	57.00	200	50	4	437-G	90		

\*60-ampere switch with 30-ampere fuse spacing and clips.  
SWN 3-wire switched neutral with 3 blades, 2 fuses.

### Single Throw—Not Fusible

Cat. No.	Each	230 Volts A. C.	Amps.	H.P.	Volts D. C.	Poles	Box No.	Wt. Lbs.
43251	\$4.00	30	3	2	442-N	5		
41252	9.00	60	5	2	447-P	10		
41253	16.00	100	7½	2	447-R	13		
41254	21.00	200	15	2	428-Z	35		
41255	45.00	400	...	2	461-K	66		
41256	76.00	600	...	2	466-C	...		
43351	6.00	30	3	3	423-N	9		
41352	10.00	60	5	3	447-P	14		
41353	17.00	100	10	3	448-W	21		
41354	25.00	200	25	3	455-E	37		
41355	57.00	400	...	3	460-G	81		
41356	90.00	600	...	3	465-D	...		
41452	15.00	60	7½	4	448-X	21		
41453	27.00	100	15	4	453-K	31		
41454	42.00	200	30	4	546	82		
41455	75.00	400	...	4	460-F	87		
41456	150.00	600	...	4	547	...		

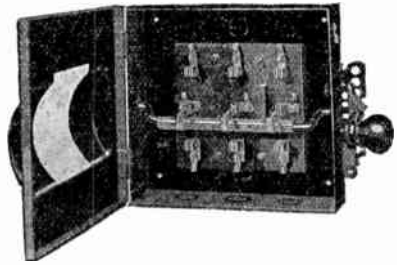
### 575 Volts A.C.—With Arc Suppressors

43341	\$9.00	30	7½	3	423-N	9		
41342	12.00	30-60	15	3	447-P	14		
41343	22.00	100	30	3	448-W	21		
41344	32.00	200	50	3	455-E	37		
41345	49.00	400	...	3	...	...		
41442	20.00	30-60	20	4	448-X	21		
41443	31.00	100	40	4	453-K	31		
41444	47.00	200	50	4	546	82		
41445	66.00	400	...	4	...	...		

## Square D Safety Switches

Not Quick Break—Slate Base Construction

Double Throw—Not Fusible



No. 92351

250 Volts D.C. and 230 Volts A.C.

Cat. No.	Each	Amps.	Poles	Box No.	Weight Pounds
92251	\$13.00	30	2	423-C	10
92351	15.00	30	3	440-B	14
92451	22.00	30	4	448-E	20
92252	17.00	60	2	447-A	16
92352	20.00	60	3	448-E	22
92452	32.00	60	4	452-C	27
92253	30.00	100	2	426-E	24
92353	37.00	100	3	425-C	30
92453	66.00	100	4	451-A	58
92254	42.00	200	2	428-P	30
92354	61.00	200	3	451-A	65
92454	96.00	200	4	437-C	95
92255	120.00	400	2	.....	81
92355	160.00	400	3	.....	110
92455	216.00	400	4	.....	130
92256	170.00	600	2	.....	90
92356	224.00	600	3	.....	140
92456	280.00	600	4	.....	175

### 575 Volts, A.C.—Equipped with Arc Suppressors

92242	\$19.00	30-60	2	447-A	16
92342	22.00	30-60	3	448-E	22
92442	35.00	30-60	4	452-C	27
92243	33.00	100	2	426-E	24
92343	40.00	100	3	425-C	30
92443	75.00	100	4	451-A	58
92244	47.00	200	2	428-P	30
92344	65.00	200	3	451-A	65
92444	105.00	200	4	437-C	95
92245	135.00	400	2	.....	81
92345	170.00	400	3	.....	110
92445	235.00	400	4	.....	130
92246	190.00	600	2	.....	90
92346	246.00	600	3	.....	140
92446	305.00	600	4	.....	175

## Square D Cover Control Keys



No. 70010

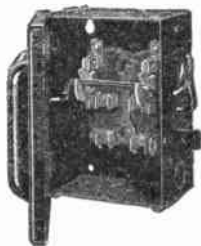
Keys are not furnished with each switch as their distribution should be limited to those authorized to make inspections.

Cat. No. 70000, for Cover Control Type A Switches, ea. \$ .50  
Cat. No. 70010, for Motor Starters, ea. .50





Square D General Service Switches



No. 98251

Fusible

Close End Boxes

2-Pole

Cat. No.	Each	Amp.	Fuses
*99211	\$2.00	30	2-Plug
†96211	2.50	30	2-Plug
*98251	2.50	30	2-Cart.
†99251	3.00	30	2-Cart.
96252	8.00	60	.....
96253	14.00	100	.....
3-Pole			
99311	\$3.00	30	3-Plug
99351	4.50	30	3-Cart.
96352	9.50	60	.....
96353	16.00	100	.....
4-Pole			
96411	\$6.50	30	4-Plug
96451	7.00	30	4-Cart.
96452	13.00	60	.....
96453	25.00	100	.....

\*Box dimensions: 7 $\frac{1}{8}$ x5 $\frac{1}{8}$ x3 $\frac{3}{8}$  inches.

†Box dimensions: 7 $\frac{3}{8}$ x6 $\frac{3}{8}$ x3 $\frac{3}{8}$  inches.

Quick Break  
(Except 30-Ampere)

Single Throw

230 Volts A.C.  
250 Volts D.C.

Fusible

Open Top Boxes

With shutters for meters having NELA standard terminal chambers.

2-Pole

Cat. No.	Each	Amp.
99252	\$8.00	60
99253	14.00	100
3-Pole		
99352	\$9.50	60
99353	16.00	100
99354	24.70	200
99355	70.00	400

Not Fusible

Cat. No.	Each	Amp.
2-Pole		
91251	\$2.50	30
91252	7.50	60
91253	13.00	100
3-Pole		
91351	\$3.50	30
91352	8.00	60
91353	15.00	100
4-Pole		
91451	\$6.50	30
91452	11.00	60
91453	21.00	100

Square D Blue Label Switches

Rotor Disc Type—Front Operated

115-230 Volts A.C., 125-250 Volts D.C.



No. 34302



No. 90211

2-Pole

Cat. No.	Each	Amp.	Fuses	Finish
93211	\$2.00	30	2-Plug.	Black
93251	2.50	30	2-Cart.	Black
34302	8.00	60	2-Cart.	Black

2-Wire Solid Neutral (1 Blade, 1 Fuse)

Cat. No.	Each	Amp.	Finish
90211	\$1.90	30	Black

3-Wire Solid Neutral (2 Blades, 2 Fuses)

Cat. No.	Each	Amp.	Fuses	Finish
90311	\$2.70	30	2-Plug.	Black
90351	3.50	30	2-Cart.	Black
34302	8.00	60	2-Cart.	Black

Box dimensions, numbers 90311, 90351, 93211 and 93251, 6 $\frac{1}{8}$ x4 $\frac{1}{16}$ x2 $\frac{3}{8}$  inches. Meter T.O. in top.

Box dimensions, number 34302, 10 $\frac{1}{8}$ x6 $\frac{15}{16}$ x3 $\frac{7}{16}$  inches.

Box dimensions, number 90211, 5 $\frac{3}{8}$ x3 $\frac{1}{8}$ x2 $\frac{3}{8}$  inches.

Switched and Solid Neutral Switches  
Single Throw—Fusible

115-230 Volts A.C., 125-250 Volts D.C.

2-Wire Solid Neutral  
(1 Blade, 1 Fuse)

Cat. No.	Each	Amp.	Fuses
97211	\$1.90	30	1-Plug
97251	2.30	30	1-Cart.
4-Wire Solid Neutral (3 Blades, 3 Fuses)			
97451	\$6.75	30	3-Cart.
97412	11.00	60	.....
97413	21.00	100	.....
97414	33.30	200	.....
97415	88.00	400	.....
97416	160.00	600	.....
97417	340.00	800	.....
97418	420.00	1200	.....

3-Wire Solid Neutral  
(2 Blades, 2 Fuses)

Cat. No.	Each	Amp.	Fuses
97311	\$2.70	30	2-Plug
97351	3.50	30	2-Cart.
97312	8.00	60	.....
97313	15.00	100	.....
97314	22.00	200	.....
97315	68.00	400	.....
97316	110.00	600	.....
97317	240.00	800	.....
97318	340.00	1200	.....

3-Wire Switched Neutral  
(3 Blades, 2 Fuses)

Cat. No.	Each	Amp.	Fuses
95311	\$3.00	30	2-Plug
95351	4.50	30	2-Cart.
97352	9.50	60	.....
97353	16.00	100	.....
97354	24.70	200	.....
97355	70.00	400	.....

With Open Top Boxes

With shutters for meters having NELA standard terminal chambers.

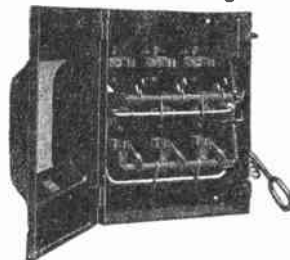
3-Wire Solid Neutral  
(2 Blades, 2 Fuses)

Cat. No.	Each	Amp.	Fuses
99351	\$3.50	30	2-Cart.
99312	8.00	60	.....
99313	15.00	100	.....
99314	22.00	200	.....
99315	68.00	400	.....

3-Wire Switched Neutral  
(3 Blades, 2 Fuses)

Cat. No.	Each	Amp.	Fuses
95311	\$3.00	30	2-Plug
95351	4.50	30	2-Cart.
94352	9.50	60	.....
94353	16.00	100	.....
94354	24.70	200	.....
94355	70.00	400	.....

Square D Motor Starters  
Straight Connected—Quick Make and Break  
Single Throw—Fusible



The running fuses are shunted by the use of a set of auxiliary blades during the starting period. The circuit is not opened going from the starting to the running position.

Square D cover control makes it impossible to open the cover when the switch is on or to operate switch when the cover is open.

With Cover Control  
230 Volts A.C., 250 Volts D.C.

Cat. No.	Each	No. of Poles	Amperes	Box No.	Wt. Lbs.
76251	\$17.00	2	30	444-A	15
76351	18.00	3	30	444-A	16
76451	25.00	4	30	448-F	20
76352	25.00	3	60	425-D	24
76452	35.00	4	60	453	33

575 Volts A.C.  
Equipped with Arc Suppressors

Cat. No.	Each	No. of Poles	Amperes	Box No.	Wt. Lbs.
76341	25.00	3	30	425-D	26
76441	35.00	4	30	453	33

Cover control keys purchased separately.

Without Cover Control  
230 Volts A.C., 250 Volts D.C.

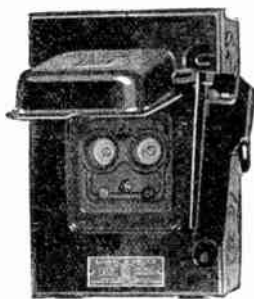
Cat. No.	Each	No. of Poles	Amperes	Box No.	Wt. Lbs.
69251	\$15.00	2	30	427	12
69351	16.00	3	30	427	14
69451	23.00	4	30	448-L	19
69352	23.00	3	60	425-P	24
69452	33.00	4	60	453-E	31

575 Volts A.C.  
Equipped with Arc Suppressors

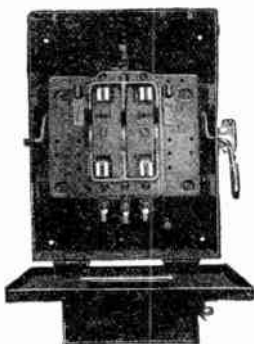
Cat. No.	Each	No. of Poles	Amperes	Box No.	Wt. Lbs.
69341	\$23.00	3	30	425-P	24
69441	33.00	4	30	453-E	31

## Square D Meter Service Switches

Accessible Main Fuses  
Meter Test and Not-Meter Test  
Sequence: Switch-Fuse-Meter



No. 30331, Flap Open



No. 10373, Open

Designed for use in connection with meter service, with the main line fuses so located at the front of the switch, that the customer may have access to them for replacement, after first throwing the switch lever to the Off position then raising the auxiliary cover or flap. Opening the flap does not afford access to the switch mechanism proper, this mechanism being under the main cover and sealed.

Both switch blades and fuses are ahead of the meter and are dead when switch is off.

The switch cannot be put in "on" position until flap is closed, the switching mechanism interlocking with the flap.

Customer's service is not interrupted while testing meters when these meter testing devices are used.

### Single Phase and D.C.

2 and 3-Wire Service—125 and 250 Volts

Meter Test With Endwall Each		Not Meter Test With Endwall Each		Amps.	Volts	Poles	Blades	Fuses	Std. Pkg.
Cat. No.	Price	Cat. No.	Price						
30211	\$ 5.85	10211	\$ 5.40	30	125	2	2	2P	10
30231	5.30	10231	5.00	30	125	2	1	1P	10
30251	6.90	10251	6.60	30	250	2	2	2C	10
30271	5.70	10271	5.70	30	125	2	1	1C	10
30331	6.50	10331	5.85	30	125-250	3	2	2P	10
30371	6.90	10371	6.60	30	125-250	3	2	2C	10
30252	14.00	10252	10.75	60	250	2	2	2C	4
30272	13.00	10272	10.75	60	125	2	1	1C	4
30372	15.00	10372	10.75	60	125-250	3	2	2C	4
*30312	15.00	*10312	10.75	60	125-250	3	2	2C	4
30253	24.00	10253	19.50	100	250	2	2	2C	2
30273	24.00	10273	19.50	100	125	2	1	1C	2
30373	26.00	*10373	19.50	100	125-250	3	2	2C	2
*30313	26.00	*10313	19.50	100	125-250	3	2	2C	2
*30314	64.00	*10314	55.00	200	125-250	3	2	2C	1
*30315	135.00	*10315	120.00	400	125-250	3	2	2C	1
.....	.....	*10316	190.00	600	125-250	3	2	2C	1
.....	.....	*10317	265.00	800	125-250	3	2	2C	1

\*Switches with visible blades. Test links are parallel and line connections to meter are located on outer edges of base.

### Polyphase

Visible Blade Construction  
3 and 4-Wire Service—230 Volts A.C.

Cat. No.	Price	Cat. No.	Price	Amps.	Volts	Poles	Blades	Fuses	Std. Pkg.
30391	\$18.00	10391	\$14.50	30	230	3	3	3C	4
30411	23.00	10411	18.00	30	230	4	3	3C	4
30392	23.50	10392	20.00	60	230	3	3	3C	4
30412	27.00	10412	21.00	60	230	4	3	3C	4
30393	45.00	10393	32.00	100	230	3	3	3C	2
30413	54.00	10413	38.00	100	230	4	3	3C	2
30394	90.00	10394	60.00	200	230	3	3	3C	1
30414	112.00	10414	77.00	200	230	4	3	3C	1
30395	160.00	10395	125.00	400	230	3	3	3C	1
.....	.....	10415	135.00	400	230	4	3	3C	1
.....	.....	10396	200.00	600	230	3	3	3C	1
.....	.....	10416	205.00	600	230	4	3	3C	1
.....	.....	10417	340.00	800	230	4	3	3C	1
.....	.....	10418	475.00	1200	230	4	3	3C	1

## Square D Meter Service Switches

With Accessible Main Fuses  
Branch Fuse Cabinets

Attached and Wired

Sequence: Switch-Fuse-Meter

Single-Phase and D.C.

30 Amperes



No. SK-2189

Cat. No.	Each	Volts	Poles	Blades	Main Fuses	Branch Fuses	Std. Pkg.
SK2187	\$8.10	125	2	1	1P	2	10
SK2188	9.00	125	2	1	1P	4	10
SK2391	9.30	125-250	3	2	2P	2	10
SK2189	10.20	125-250	3	2	2P	4	10
SK2233	8.60	125	2	2	2P	2	10
SK2197	9.55	125	2	2	2P	4	10
*SK2392	8.65	125	2	1	1P	2	10
*SK2393	9.55	125	2	1	1P	4	10
*SK2394	9.85	125-250	3	2	2P	2	10
*SK2395	10.75	125-250	3	2	2P	4	10

\*Ganging type for banked installations.

## Square D Meter Service Switches

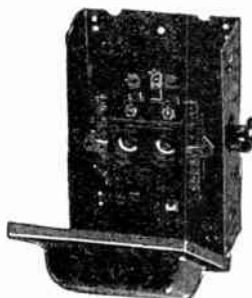
With Sealable Main Fuses  
Meter Test and

Not Meter Test

Sequence: Switch-Fuse-Meter

Single-Phase and D.C.

2 and 3-Wire Service  
125 and 250 Volts



No. 36331

Meter Test With Endwall Each		Not Meter Test With Endwall Each		Amps.	Volts	Poles	Blades	Fuses	Std. Pkg.
Cat. No.	Price	Cat. No.	Price						
36211	\$ 4.80	99211	\$2.00	30	125	2	2	2P	10
36231	4.10	97211	1.90	30	125	2	1	1P	10
36251	5.55	98251	2.50	30	250	2	2	2C	10
36271	5.20	97251	2.30	30	125	2	1	1C	10
36331	5.10	97311	2.70	30	125-250	3	2	2P	10
36371	5.85	97351	3.50	30	125-250	3	2	2C	10
36252	11.50	99252	8.00	60	250	2	2	2C	4
36272	10.50	.....	.....	60	125	2	1	1C	4
36372	12.50	99312	8.00	60	125-250	3	2	2C	4
*36312	12.50	.....	.....	60	125-250	3	2	2C	4
36253	21.00	99253	14.00	100	250	2	2	2C	2
36273	21.00	.....	.....	100	125	2	1	1C	2
36373	23.00	99313	15.00	100	125-250	3	2	2C	2
*36313	23.00	.....	.....	100	125-250	3	2	2C	2
*36314	55.00	99314	22.00	200	125-250	3	2	2C	1
*36315	125.00	99315	68.00	400	125-250	3	2	2C	1

\*Meter test switches with visible blades.

### Polyphase

3 and 4-Wire Service—230 Volts

Cat. No.	Price	SK No.	Price	Amps.	Volts	Poles	Blades	Fuses	Std. Pkg.
36351	\$15.00	SK-671	\$6.25	30	230	3	3	3	4
36411	21.50	.....	.....	30	230	4	3	3	4
36352	20.00	SK-672	13.00	60	230	3	3	3	4
36412	25.00	.....	.....	60	230	4	3	3	4
36393	35.00	SK-673	20.00	100	230	3	3	3	2
36413	44.00	.....	.....	100	230	4	3	3	2
36394	75.00	99354	24.70	200	230	3	3	3	1
36414	90.00	.....	.....	200	230	4	3	3	1
36395	170.00	99355	70.00	400	230	3	3	3	1

**Square D Meter Switches**

Universal Meter Testing

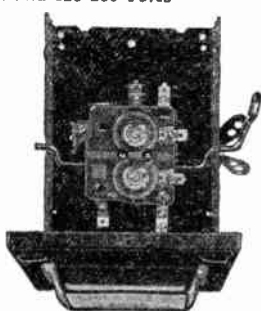
Sequence: Switch-Fuse-Meter

Single Phase and D.C.

30 Amperes—125 Volts and 125-250 Volts



No. 34311, Open



No. 33211, Main Cover Open

Cat. No.	With End Wall Each	SWITCH AND CUTOUT			BRANCH CIRCUITS			Std. Pkg.	Wt. Lbs.
		No. of Poles	No. of Blades	No. of Fuses	No. of Fuses in Ea. Cir.	Box No.			
*33211	\$5.10	2	1	1	2	2	1	432-M	10 8
†32211	5.10	2	1	1	2	2	1	432-D	10 8
32311	5.50	3	2	2	2	2	1	432-D	10 9
32311	5.50	3	2	2	1	2	2	432-D	10 9
32311	5.50	2	2	2	1	2	2	432-D	10 9
34211	6.25	2	1	1	4	4	1	432-E	10 9
34311	7.00	3	2	2	4	4	1	432-E	10 9
34311	7.00	2	2	2	2	4	2	432-E	10 9

\*Same as Cat. No. 32211 except branch fuses in vertical position allowing more wiring space.

†Same as Cat. No. 32211 except branch fuses in horizontal position.

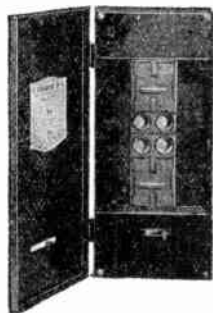
**Square D Meter Switches and Range Combinations**

Sequence: Meter-Switch-Fuse

60 Amperes

115-230 Volts A.C.

3-Pole Solid Neutral



No. 34352

With Accessible Main Fuses

Cat. No.	Each	Poles	Blades	Branch Circuits	Std. Pkg.
*34312	\$10.75	3	2	.....	4
34322	12.40	3	2	2-30A	4
34342	14.00	3	2	4-30A	4
34352	18.70	3	2	4-30A, 1-60A	4
†35352	22.00	3	2	4-30A, 1-60A	4
34362	15.70	3	2	6-30A	4
34372	20.85	3	2	6-30A, 1-60A	4

\*Switch and 60-ampere main fuse Square D Break only.

†Same as Cat. No. 34352 but for flush mounting.

With Sealable Main Fuses

Main and range fuses equipped with fuse pullers. Nos. SK-2380 and SK-2398 have split main door, permitting access to branch fuses when main fuses are sealed, and have top shutter endwalls. Nos. SK-2434 and SK-2436 have solid door and knockout endwalls.

SK-2434	\$15.50	3	2	4-30A, 1-60A	4
SK-2380	15.50	3	2	4-30A, 1-60A	4
SK-2436	18.00	3	2	6-30A, 1-60A	4
SK-2398	18.00	3	2	6-30A, 1-60A	4

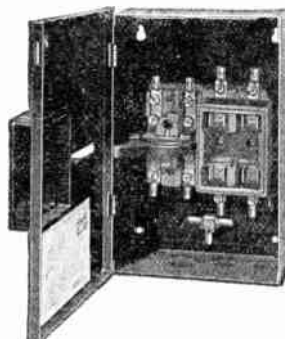
**Square D Meter Switches and Range Combinations**

With Accessible Main Fuses

Sequence: Switch-Meter-Fuse

With Test Facilities

30-60 Amperes—115-230 Volts A.C.

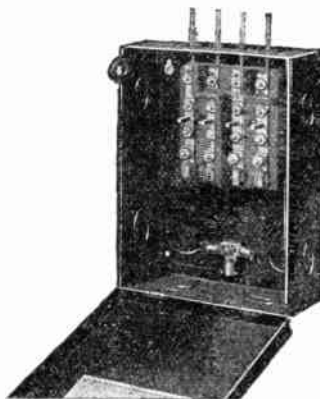


No. 31312

Cat. No.	With End Wall Each	Amp.	METER SWITCH		BRANCH CIRCUITS		Std. Pkg.
			Poles	Blades	30-Amp. Fuses	60-Amp. Range Fuses	
31211	\$ 5.30	30	2	1	..	..	10
31311	6.50	30	3	2	..	..	10
*SK2445	8.10	30	2	1	2	..	10
*SK2446	9.00	30	2	1	4	..	10
*SK2447	9.30	30	3	2	2	..	10
*SK2448	10.20	30	3	2	4	..	10
31312	11.00	60	3	2	..	..	4
†31322	17.60	60	3	2	..	2	4
31352	19.00	60	3	2	4	2	4
31372	22.10	60	3	2	6	2	4
31302	23.40	60	3	2	8	2	4
31313	20.00	100	3	2	..	..	2

\*Combination wired and nipped. †Provided with 60-ampere lugs behind main fuse for service to existing circuits.

**Square D Indoor Meter Boxes**



\*No. 12411 is used on meter control panels as a test block and meter trim.

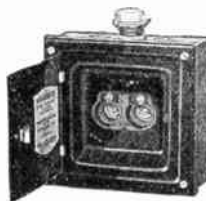
\*\*Nos. 12452, 12461, 12462, 12463 and 12464 are supplied with a blank steel shutter closing the opening at the top of box.

†No. 12372 has plug-in type meter connectors. Box is sealable and contains test links.

‡No. 12392 is a small compact box with a two-in, two-out test block and has removable test links.

Cat. No.	With End Wall Each	Amps.	Volts	Wire	Std. Pkg.
*12411	\$4.50	30	125-250	2-3	10
**12461	5.50	30	250-600	2-3	10
†12372	5.50	60	125-250	2-3	4
‡12392	4.50	60	125-250	2-3	4
*12452	7.00	60	125-250	2-3	4
**12462	10.00	60	250-600	2-3	4
**12463	12.00	100	250-600	2-3	2
**12464	17.00	200	250-600	2-3	1

**Square D Branch Circuit Attachments**



Cat. No.	Unwired Each	Wired Each	Circuits	Std. Pkg.
39271	\$2.35	\$2.80	2	10
39471	3.25	3.70	4	10
39671	5.75	6.20	6	10



## Square D Aluminum Outdoor Meter Boxes



No. 12651  
With Cover Removed

Die cast of virgin aluminum and has indefinite life.

Box is 15 3/4 inches high over all, 8 inches wide, and 8 inches deep.

Has four mounting feet on back. A 1-inch threaded conduit boss at top and 1-inch knockout in back and bottom. Also 1/2-inch knockout for ground.

Block is two-in, two-out. No cross-over.

Semi-rigid meter connectors included.

Standard package, 4.  
No. 12651, with Test Block ea. \$7.40  
No. 12641, without Test Block

..... ea. 6.40  
No. 12691, Test Block Only.... 1.50

## Square D Outdoor Meter Boxes

For 60-Ampere Services

Dimensions: 20 7/8 inches high, 7 7/8 inches wide, 7 1/8 inches deep.

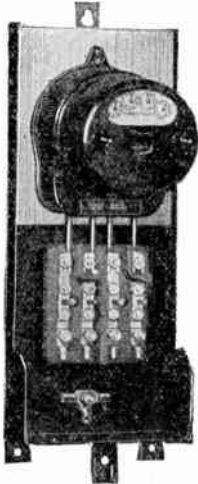
No. 12601 has galvanized sheet metal cabinet with one coat of gray enamel and cross over test block, permitting straight connection to meter. Knockouts: Sides, 1-inch; bottoms 1, 1/2, and 1-inch; back, 1-inch and 1-inch. For concentric knockouts add initial A to Cat. No.

Nos. 12621 and SK 2186 have standard sheet-metal cabinets. Galvanized or cadmium-plated finish at \$3.00 each additional.

No. 12621 test block is standard type.

SK2186 is cabinet without test block. Knockouts: Sides, 3/4, 1, 1 1/4-inch (concentric); bottom (3/4, 1, 1 1/4-inch), (1/2-inch), (3/4, 1, 1 1/4-inch).

No. SK-2186 is cabinet only without test block, for use by No. 12621.



No. 12601, Open  
Showing Method of  
Mounting Meter

Cat. No.	Steel Cabinet Each	Galv. or Cad. Plated Each	Std. Pkg.
12601	\$9.00	.....	4
12621	8.00	\$11.00	4
SK-2186	5.50	8.50	4

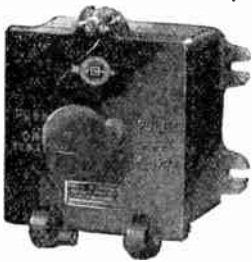
## No. 7251 Square D Cast Iron Switches

For Cartridge Fuses  
30 Amperes, 250 Volts—2-Pole

This switch is enclosed in a cast iron case. Cover interlocks with the mechanism so it cannot be opened when switch is on.

Has brass plunger rods. Quick make and break action. Can be gasketed to make switch weatherproof. An end plate is required in each end.

Box No. 401-A.  
Weight, 10 pounds.  
Cat. No. 7251.....each \$20.00



## End Plates for Use with Cast Iron Switches



No. 18711

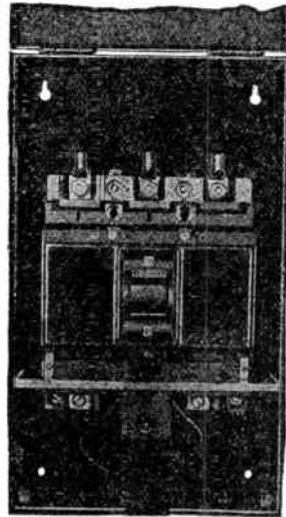


No. 18723

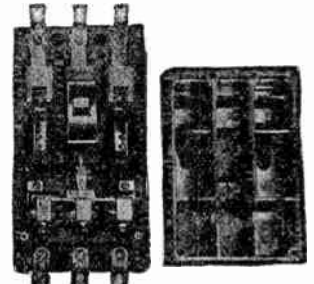
No.	Each	Description	Std. Pkg.	Wt. Lbs.
18711	\$.50	For One 1/2-Inch Conduit	5	4
18712	.50	For One 3/4-Inch Conduit	5	4
18713	.50	For One 1-Inch Conduit	5	4
18714	.50	For One 1 1/4-Inch Conduit	5	4
18721	.50	For Two 1/2-Inch Conduits	5	4 1/2
18722	.50	For Two 3/4-Inch Conduits	5	4 1/2
18723	.50	For Two 1-Inch Conduits	5	4 1/2
19700	.40	Blank (Steel)	5	1

## Square D Industrial Nofuze Circuit Breakers

Manually Operable—Quick-Make and Quick-Break  
230 Volts A.C., 125-250 Volts D.C.



No. 67316  
With Main Cover Open



50-Ampere Frame—Cover  
Removed



No. 67216 Breaker  
Removed from Box

### 50-Ampere Frame Non-Interchangeable Trip Unit

Cat. No.	Flush Mounting		Surface Mounting		Amp.	Poles
	Each		Cat. No.	Each		
66215F	\$20.00		66215S	\$18.00	15	2
66315F	25.00		66315S	23.00	15	3
66220F	20.00		66220S	18.00	20	2
66320F	25.00		66320S	23.00	20	3
66225F	20.00		66225S	18.00	25	2
66325F	25.00		66325S	23.00	25	3
66235F	22.00		66235S	20.00	35	2
66335F	27.00		66335S	25.00	35	3
66250F	22.00		66250S	20.00	50	2
66350F	27.00		66350S	25.00	50	3

### 100-Ampere Frame Interchangeable Trip Unit

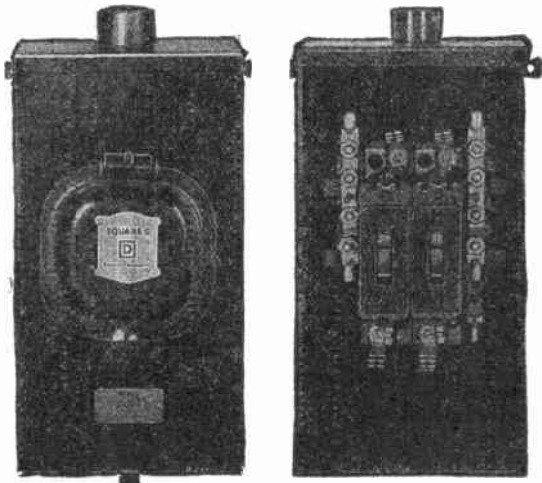
Cat. No.	Each	Cat. No.	Each	Amp.	Poles
67250F	\$40.50	67250S	\$38.00	50	2
67350F	50.50	67350S	48.00	50	3
67270F	41.50	67270S	39.00	70	2
67370F	52.50	67370S	50.00	70	3
67290F	43.50	67290S	41.00	90	2
67390F	54.50	67390S	52.00	90	3
67216F	44.50	67216S	42.00	100	2
67316F	56.50	67316S	54.00	100	3

### 225-Ampere Frame

Interchangeable Trip Unit				600-Ampere Frame Interchangeable Trip Unit						
Cat. No.	Flush Mounting		Surface Mounting		Amp. Poles	Surface Mounting Only				
	Each		Cat. No.	Each		Cat. No.	Each	Amp. Poles		
68250F	\$92.00		68250S	\$89.00	50	2	69227	\$241.00	225	2
68350F	112.00		68350S	109.00	50	3	69327	282.00	225	3
68270F	92.00		68270S	89.00	70	2	69228	251.00	250	2
68370F	112.00		68370S	109.00	70	3	69328	294.00	250	3
68290F	92.00		68290S	89.00	90	2	69237	260.00	325	2
68390F	112.00		68390S	109.00	90	3	69337	306.00	325	3
68216F	92.00		68216S	89.00	100	2	69246	270.00	400	2
68316F	112.00		68316S	109.00	100	3	69346	318.00	400	3
68217F	94.00		68217S	91.00	125	2	68248	279.00	450	2
68317F	115.00		68317S	112.00	125	3	69348	330.00	450	3
68218F	96.00		68218S	93.00	150	2	69256	289.00	500	2
68318F	117.00		68318S	114.00	150	3	69356	341.00	500	3
68219F	97.00		68219S	94.00	175	2	69258	298.00	550	2
68319F	119.00		68319S	116.00	175	3	69358	353.00	550	3
68226F	99.00		68226S	96.00	200	2	69266	308.00	600	2
68326F	122.00		68326S	119.00	200	3	69366	365.00	600	3
68227F	101.00		68227S	98.00	225	2				
68327F	124.00		68327S	121.00	225	3				

Surface covers hinged. Flush covers removable.

**Square D Circuit Breakers  
With Weatherproof Flipons  
Quick-Make and Quick-Break**



No. 63650

No. 60950  
Cover Removed

For general outdoor use. In steel, rust resisting cabinets.

**2-Pole, 1 Single-Pole Flipon, Solid Neutral**  
1 Handle, One 1-Inch Pipe Fitting

Meter Test			Not Meter Test			
Cat. No.	Each	Test Links	Cat. No.	Each	Amp.	Volts
60415	\$8.95	1	63415	\$8.25	15	125
60420	8.95	1	63420	8.25	20	125
60425	8.95	1	63425	8.25	25	125
60435	9.60	1	63435	8.90	35	125
60450	9.60	1	63450	8.90	50	125

**3-Pole, 2 Single-Pole Flipons, Solid Neutral**  
2 Handles, One 1-Inch Pipe Fitting

Cat. No.	Each	Test Links	Cat. No.	Each	Amp.	Volts
60915	\$14.40	2	63915	\$13.00	15	125-250
60920	14.40	2	63920	13.00	20	125-250
60925	14.40	2	63925	13.00	25	125-250
60935	15.70	2	63935	14.30	35	125-250
60950	15.70	2	63950	14.30	50	125-250

**3-Pole, 1 Double-Pole Flipon, Solid Neutral**  
1 Handle, One 1-Inch Pipe Fitting

Cat. No.	Each	Test Links	Cat. No.	Each	Amp.	Volts
60615	\$14.90	2	63615	\$13.50	15	125-250
60620	14.90	2	63620	13.50	20	125-250
60625	14.90	2	63625	13.50	25	125-250
60635	15.65	2	63635	14.25	35	125-250
60650	15.65	2	63650	14.25	50	125-250

**Square D Circuit Breakers  
With Explosion Resisting Flipons  
Cast Malleable Enclosed**

For Lighting and Motor Circuits  
In Class 1 Group D and Class 2 Group G Hazardous Locations  
125, 125-250 Volts A.C. or D.C.

**1 Single-Pole Flipon**  
1 Conduit Hub Each End

Cat. No.	Each	Amp.	Conduit Hubs In.
62115	\$25.55	15	1/2
62120	25.55	20	1/2
62125	25.55	25	3/4
62135	26.20	35	3/4
62150	26.20	50	1

**1 Double-Pole Flipon**  
1 Conduit Hub Each End

Cat. No.	Each	Amp.	Conduit Hubs In.
62215	\$34.20	15	1/2
62220	34.20	20	1/2
62225	34.20	25	3/4
62235	34.95	35	3/4
62250	35.25	50	1

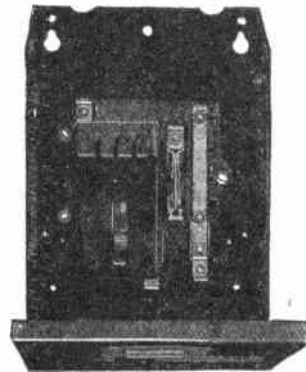
**1 Double-Pole Flipon**  
2 Conduit Hubs One End Only

Cat. No.	Each	Amp.	Conduit Hubs In.
62915	\$34.20	15	1/2
62920	34.20	20	1/2
62925	34.20	25	3/4
62935	34.95	35	3/4
62950	35.25	50	1



No. 62215

**Square D Meter Service Breakers**



Single-Phase or D.C.  
Service

Quick Make and Quick  
Break

2 and 3-Pole Solid Neutral  
125, 125-250 Volts

Insulated Neutral

**2-Wire, Solid Neutral, Single Pole Flipon**

Cat. No.	Meter Test		Cat. No.	Not Meter Test		Amps.
	With Endwall Each	Without Endwall Each		With Endwall Each	Without Endwall Each	
60215	\$8.20	\$7.80	63215	\$7.50	\$7.10	15
60220	8.20	7.80	63220	7.50	7.10	20
60225	8.20	7.80	63225	7.50	7.10	25
60235	8.85	8.45	63235	8.15	7.75	35
60250	8.85	8.45	63250	8.15	7.75	50

**3-Wire, Solid Neutral, Double Pole Flipon**

Cat. No.	With Endwall Each	Without Endwall Each	Cat. No.	With Endwall Each	Without Endwall Each	Amps.
60315	\$14.15	\$13.75	63315	\$12.75	\$12.35	15
60320	14.15	13.75	63320	12.75	12.35	20
60325	14.15	13.75	63325	12.75	12.35	25
60335	14.90	14.50	63335	13.50	13.10	35
60350	14.90	14.50	63350	13.50	13.10	50

**3-Wire, Solid Neutral, Two Single Pole Flipons**

Cat. No.	With Endwall Each	Without Endwall Each	Cat. No.	With Endwall Each	Without Endwall Each	Amps.
60015	\$13.65	\$13.25	63015	\$12.25	\$11.85	15
60020	13.65	13.25	63020	12.25	11.85	20
60025	13.65	13.25	63025	12.25	11.85	25
60035	14.95	14.55	63035	13.55	13.15	35
60050	14.95	14.55	63050	13.55	13.15	50

**Square D Circuit Breakers  
With Industrial Flipons  
Inverse Time Element, Trip Free**

Quick-Make Quick-Break  
One Single-Pole Flipon

125 Volts A.C. or D.C.—Single Handle

CAT. NOS.		Each	Amp.
Flush Mounting	Surface Mounting		
61115F	61115S	\$6.75	15
61120F	61120S	6.75	20
61125F	61125S	6.75	25
61135F	61135S	7.40	35
61150F	61150S	7.40	50

**Two Single-Pole Flipons**

125-250 Volts A.C. or D.C.—Two Handles		Each	Amp.
61815F	61815S	\$11.80	15
61820F	61820S	11.80	20
61825F	61825S	11.80	25
61835F	61835S	13.10	35
61850F	61850S	13.10	50

**One Double-Pole Flipon**

125-250 Volts A.C. or D.C.—One Handle		Each	Amp.
61715F	61715S	\$12.30	15
61720F	61720S	12.30	20
61725F	61725S	12.30	25
61735F	61735S	13.05	35
61750F	61750S	13.05	50

Finish, surface cover, black; flush cover, gray.



No. 61015  
Cover Removed





No. 16323

## Bull Dog Type A Safety Switches

Safety Interlocks  
Quick-Make  
Quick-Break  
Single Throw  
Fusible

(Switches 800 Amps. and above Non-Interlocking)

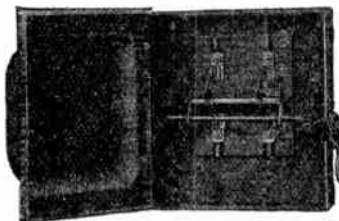
Black enamel finish; luminized finish can be furnished at 5% additional.

## Bull Dog Type A Safety Switches

Safety Interlocks  
Quick-Make  
Quick-Break  
Single Throw  
Not Fusible

(Switches 800 Amps. and above are Non-Interlocking)

Black enamel finish; luminized finish can be furnished at 5% additional.



### †2-Pole, 250 Volts D.C., 230 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
10221	\$12.00	30	3	15	109
10222	15.00	60	5	16	109
10223	23.00	100	10	27	102
10224	40.00	200	...	48	114
10225	90.00	400	...	74	121
10226	130.00	600	...	114	123
10227	220.00	800	...	117	124
10228	305.00	1200	...	225	127D8

### †3-Pole, 230 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
10321	\$15.00	30	3	21	111
10322	20.00	60	5	22	111
10323	30.00	100	10	34	113
10324	45.00	200	25	62	115
10325	100.00	400	...	98	117
10326	155.00	600	...	156	124
10327	300.00	800	...	274	125
10328	385.00	1200	...	377	126D8

### 3-Pole, Switched Neutral, 125-250 Volts

3 Blades, 2 Fuse Connections

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
11321	\$15.00	30	...	21	111
11322	20.00	60	...	22	111
11323	30.00	100	...	34	113
11324	45.00	200	...	62	115
11325	100.00	400	...	98	117
11326	155.00	600	...	156	124
11327	300.00	800	...	274	125
11328	385.00	1200	...	377	126D8

### †4-Pole, 230 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
10421	\$18.00	30	3	25	106TR
10422	24.00	60	7½	26	106TR
10423	40.00	100	15	59	115
10424	60.00	200	30	94	117
10425	130.00	400	...	116	124
10426	205.00	600	...	195	125
*10427	385.00	*800	...	370	...
*10428	510.00	*1200	...	525	...

### 2-Pole, 600 Volts D.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
10261	\$18.00	30	5	32	113D
10262	19.00	60	15	33	113D
10263	30.00	100	25	52	122
10264	47.00	200	50	77	121D
10265	110.00	400	...	128	124
10266	175.00	600	...	148	124
*10267	270.00	*800	...	...	...
*10268	380.00	*1200	...	...	...

### 3-Pole, 575 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
10351	\$22.00	30	7½	28	110
10352	23.00	60	15	29	110
10353	35.00	100	30	36	113
10354	58.00	200	50	67	115
10355	120.00	400	...	142	124
10356	200.00	600	...	159	124
*10357	350.00	*800	...	289	125
*10358	460.00	*1200	...	402	126D8

### 4-Pole, 575 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
10451	\$27.00	30	10	25	105
10452	29.00	60	20	34	105
10453	46.00	100	40	68	115
10454	70.00	200	50	96	117
10455	155.00	400	...	145	124
10456	240.00	600	...	210	125
*10457	450.00	*800	...	...	...
*10458	575.00	*1200	...	...	...

\*Quick-break only.

†Furnished also in 1800 and 2400 amperes.

### 2-Pole, 250 Volts D.C., 230 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
13222	\$11.00	30-60	5	15	109
13223	22.00	100	10	19	112
13224	28.00	200	20	32	102D
13225	60.00	400	...	62	122
13226	100.00	600	...	70	122D
13227	195.00	800	...	110	117D
13228	265.00	1200	...	180	124 D8
*13229	460.00	*1800	...	...	...
*13220	580.00	*2400	...	...	...

### 2-Pole, 600 Volts D.C., 575 Volts A.C., with Arc Chokers

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
13262	\$15.00	30-60	15	29	105D
13263	23.00	100	25	48	122
13264	31.00	200	50	58	122D
13265	90.00	400	...	80	117D
13266	130.00	600	...	116	117D

### 3-Pole, 575 Volts A.C., with Arc Chokers

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
†13321	\$13.00	†30	...	15	112
13352	18.00	30-60	25	17	112
13353	27.00	100	30	24	106
13354	38.00	200	50	38	105D
13355	100.00	400	...	74	120
13356	160.00	600	...	101	117D
13357	260.00	800	...	168	124
13358	350.00	1200	...	254	125 D8
*13359	615.00	*1800	...	...	...
*13350	845.00	*2400	...	...	...

### 4-Pole, 575 Volts A.C., with Arc Chokers

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
†13421	\$18.00	†30	...	20	111TR
13452	24.00	30-60	30	21	111TR
13453	35.00	100	40	35	105
13454	51.00	200	50	68	120
13455	130.00	400	...	112	117D
13456	195.00	600	...	130	117D
13457	335.00	800	...	220	...
*13458	460.00	*1200	...	300	...
*13459	895.00	*1800	...	...	...
*13450	1110.00	*2400	...	...	...

### Double Throw, Not Fusible, Quick-Break

#### 2-Pole, 250 Volts D.C., 230 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
†32221	\$13.00	†30	...	14	101D
23222	17.00	30-60	3	21	111
23223	30.00	100	5	29	110
23224	42.00	200	10	40	113D
23225	120.00	400	...	73	121
23226	170.00	600	...	103	120D

#### 3-Pole, 230 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
†33321	\$15.00	†30	...	17	101D
23322	20.00	30-60	5	25	106
23323	37.00	100	7½	40	105
23324	61.00	200	15	63	118
23325	160.00	400	...	105	117
23326	224.00	600	...	123	117D

#### 4-Pole, 230 Volts A.C.

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
†34421	\$22.00	†30	...	19	112
23422	32.00	30-60	5	26	106TR
23423	66.00	100	7½	73	118
23424	96.00	200	15	79	120
23425	216.00	400	...	128	124
23426	280.00	600	...	188	125

### 2-Pole, 600 Volts D.C., 575 Volts A.C., with Arc Chokers

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
23262	\$19.00	30-60	...	31	105D
23263	33.00	100	...	55	122
23264	47.00	200	...	80	117D
23265	135.00	400	...	...	...
23266	190.00	600	...	...	...

### 3-Pole, 575 Volts A.C., with Arc Chokers

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
23352	\$22.00	30-60	10	25	106
23353	40.00	100	15	40	105
23354	65.00	200	30	63	118
23355	170.00	400	...	105	117
23356	246.00	600	...	123	124

### 4-Pole, 575 Volts A.C., with Arc Chokers

Cat. No.	Each	Amps.	H.P. Rating	Wt. Lbs.	Box Ref. No.
23452	\$35.00	30-60	10	26	106TR
23453	75.00	100	15	73	118
23454	105.00	200	30	79	120
23455	235.00	400	...	128	124
23456	305.00	600	...	188	125

\*Quick-break only.

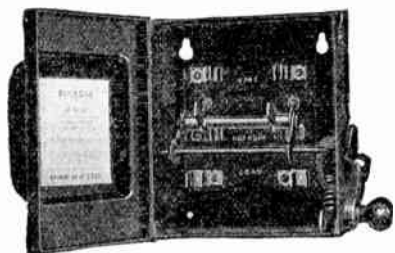
†230 Volts A.C. only, no arc chokers.

‡Type C non-interlocking.



**Bull Dog Type C Safety Switches**

Non-Interlocking, Quick-Make, Quick-Break  
Single Throw, Fusible



No. 50221S

Bull Dog Type C (punched clip) externally operated switches are designed for use where severe service conditions do not exist to warrant investment in the more ruggedly constructed, machine made, Type A Switch.

Quick-make and quick-break is a feature of the Bull Dog Type C line. As a safety factor quick-make is more important than quick-break, as it prevents unintentional operation of the switch, because of the conscious effort required to compress the quick-make spring.

Only one spring is used to perform both the functions of quick-make and quick-break. The operation of the switch is not dependent on this spring, however. The switch could be operated if the spring broke or were removed.

The blade and crossbar construction is unique. There is no chance for a blade to remain in contact after the handle is pulled to the "off" position.

Black enamel finish; luminized finish can be furnished at additional 10 per cent.

**2-Pole, 250 Volts D.C.**

Cat. No.	Each	Amps.	H.P. Rating	Std. Pkg.	Wt., Lbs. Each	Box Ref. No.
*50221P	\$4.00	*30	2	5	6	100
†50221S	4.00	†30	2	5	6	100
50221	6.00	30	2	5	6	100
50222	10.00	60	5	5	13	109
50223	16.00	100	10	3	24	102
50224	22.00	200	....	2	48	114
50225	64.00	400	....	1	74	121
50226	99.00	600	....	..	114	.....

**3-Pole, 230 Volts, A.C.**

*50321P	\$6.00	*30	3	5	10	101
†50321S	6.00	†30	3	5	10	101
50322	11.00	60	5	5	20	111
50323	20.00	100	10	3	31	113
50324	29.00	200	25	2	66	115
50325	74.00	400	....	1	97	117
50326	115.00	600	....	..	155	.....

**4-Pole, 230 Volts A.C.**

50421S	\$13.00	30	3	5	13	109TR
50422	15.00	60	7½	3	25	106TR
50423	30.00	100	15	2	58	105
50424	48.00	200	30	1	90	120
50425	105.00	400	....	1	116	124
50426	165.00	600	....	..	195	.....

**3-Pole, Switched Neutral, 125-250 Volts**  
3 Blades, 2 Fuse Connections

51321	\$6.00	30	....	5	10	101
51322	11.00	60	....	5	20	111
51323	20.00	100	....	3	31	113
51324	29.00	200	....	2	66	115
51325	74.00	400	....	1	97	117
51326	115.00	600	....	..	155	.....

**3-Pole, 575 Volts A.C., with Arc Chokers**

50351	\$12.00	30	7½	5	26	110
50352	15.00	60	15	3	27	110
50353	28.00	100	30	2	39	113
50354	42.00	200	50	2	68	.....

**4-Pole, 575 Volts A.C., with Arc Chokers**

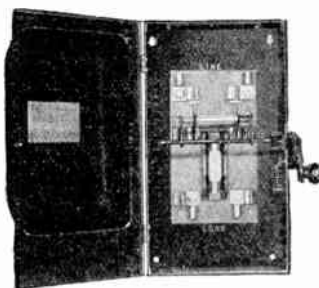
50451	\$20.00	30	10	5	32	105
50452	22.00	60	20	3	33	105
50453	40.00	100	40	2	68	115
50454	57.00	200	50	1	96	117

\*Porcelain base switch with removable end plate.

†Porcelain base switch with solid end box.

**Bull Dog Type C Safety Switches**

Quick-Make, Quick-Break



Non-Interlocking  
Single Throw, Fusible

With the exception of 400-ampere and over, the 3-pole switches listed below are equipped with removable end plate at top.

Black enamel finish; luminized finish can be furnished at 10% additional.

**3-Pole, Solid Neutral, 125-250 Volts**  
2 Blades, 2 Fuse Connections

Cat. No.	Each	Amps.	Std. Pkg.	Wt., Lbs. Each	Box Ref. No.
52322	\$10.00	60	5	11	109
52323	16.00	100	3	22	111
52324	25.00	200	2	43	113D
52325	70.00	400	1	95	122
52326	110.00	600	1	120	121D
52327	200.00	800	1	265	124D8
52328	270.00	1200	1	360	127D8

**4-Pole, Solid Neutral, 115-230 Volts A.C.**  
3 Blades, 3 Fuse Connections

52421	\$9.00	30	5	12	101
52422	12.50	60	5	23	111
52423	22.50	100	3	56	113
52424	40.00	200	2	88	115
52425	90.00	400	1	112	124
52426	160.00	600	1	190	124
52427	340.00	800	1	365	.....
52428	420.00	1200	1	520	.....

**5-Pole, Solid Neutral, 115-230 Volts A.C.**  
4 Blades, 4 Fuse Connections

52521	\$14.00	15	5	15	101
52522	22.00	25	5	25	106TR
52523	39.50	67	3	67	105
52524	56.00	93	2	93	120
52525	134.00	164	1	164	124
52526	220.00	198	1	198	125

**Bull Dog Type C Safety Switches**

Non-Interlocking, Quick-Make, Quick-Break  
Single Throw, Not Fusible

Black enamel finish; luminized finish can be furnished at 10% additional.

**2-Pole, 250 Volts D.C.**

Cat. No.	Each	Amps.	H.P. Rating	Std. Pkg.	Wt. Lbs. Each	Box Ref. No.
*53221S	\$4.00	*30	3	5	6	100
53222	9.00	30-60	5	5	13	109
53223	16.00	100	7½	3	17	112
53224	21.00	200	10	2	31	102D
53225	45.00	400	....	1	61	122
53226	76.00	600	....	..	70	.....

**3-Pole, 230 Volts A.C.**

*53321S	\$6.00	*30	3	5	10	101
53322	10.00	30-60	5	5	16	112
53323	17.00	100	10	3	23	106
53324	25.00	200	25	2	38	105D
53325	57.00	400	....	1	74	120
53326	90.00	600	....	..	101	.....

**4-Pole, 230 Volts A.C.**

53422	\$15.00	30-60	10	5	21	109TR
53423	27.00	100	15	3	34	111TR
53424	42.00	200	30	2	50	106TR
53425	75.00	400	....	1	110	118
53426	150.00	600	....	1	130	117D

**3-Pole, 575 Volts A.C., with Arc Chokers**

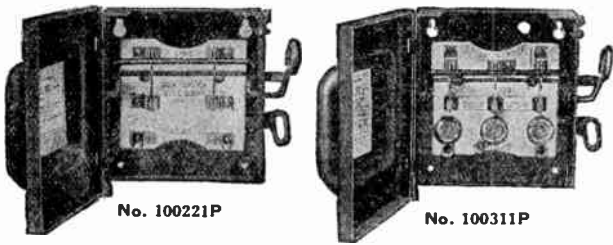
53352	\$12.00	30-60	15	1	16	112
53353	22.00	100	30	1	23	106
53354	32.00	200	50	1	38	105D

**4-Pole, 575 Volts A.C., with Arc Chokers**

53452	\$20.00	30-60	20	1	21	111TR
53453	31.00	100	40	1	34	106TR
53454	47.00	200	50	1	50	118

\*Porcelain base.

## Bull Dog Type D General Service Safety Switches



Black enamel finish; luminized finish can be furnished at 10% additional.

Suffix P in Cat. No. denotes porcelain base switch with removable end plate.

Suffix S in Cat. No. denotes porcelain base switch with solid end box.

### Fusible, Single Throw 125-250 Volts D.C., 230 Volts A.C. 2-Pole

Cat. No.	Each	Amps.	Fuse Connections	Std. Pkg.	Wt., Lbs. Each	Box Ref. No.
100211P	\$2.00	30	2 Plug	5	5	100
100211S	2.00	30	2 Plug	5	5	100
102211P	1.90	30SN	1 Plug	5	5	100
100221P	2.50	30	2 Cart.	5	5	100
100221S	2.50	30	2 Cart.	5	5	100
<b>Quick-Break</b>						
50222D	\$8.00	60	.....	5	14	109
50223D	14.00	100	.....	3	25	102
<b>3-Pole</b>						
100311P	\$3.00	30	3 Plug	5	6	100
100311S	3.00	30	3 Plug	5	6	100
100321P	4.50	30	3 Cart.	5	10	101
100321S	4.50	30	3 Cart.	5	10	101
<b>Quick-Break</b>						
50322D	\$9.50	60	3 Cart.	5	20	111
50323D	16.00	100	3 Cart.	3	31	113
<b>4-Pole</b>						
50421SD	\$7.00	30	4 Cart.	5	12	109TR
50422D	13.00	60	4 Cart.	3	24	106TR
50423D	25.00	100	4 Cart.	2	57	105

<b>3-Pole Switched Neutral 3 Blades 2 Fuse Connections</b>						
101311P	\$3.00	30	2 Plug	5	6	100
101321P	4.50	30	2 Cart.	5	6	100
<b>Quick-Break</b>						
51322D	\$9.50	60	2 Cart.	5	14	111
51323D	16.00	100	2 Cart.	3	30	113

<b>3-Pole Solid Neutral 2 Blades 2 Fuse Connections</b>						
102311P	\$2.70	30	2 Plug	5	6	100
102321P	3.50	30	2 Cart.	5	10	100
<b>Quick-Break</b>						
52322D	\$8.00	60	2 Cart.	5	11	109
52323D	15.00	100	2 Cart.	3	22	111

<b>4-Pole Solid Neutral 3 Blades 3 Fuse Connections</b>						
52421D	\$6.75	30	4 Cart.	5	12	101
52422D	11.00	60	.....	5	23	111
52423D	21.00	100	.....	3	56	113

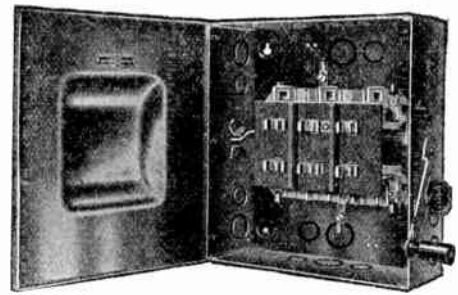
<b>5-Pole Solid Neutral 4 Blades 4 Fuse Connections</b>						
52521D	\$10.00	30	4 Cart.	5	15	101
52522D	17.00	60	.....	5	25	106TR
52523D	33.00	100	.....	3	67	105

### Not Fusible, Single Throw 250 Volts D.C., 230 Volts A.C. 2-Pole

Cat. No.	Each	Amps.	Std. Pkg.	Wt., Lbs. Each	Box Ref. No.
103221P	\$2.50	30	5	5	100
103221S	2.50	30	5	5	100
<b>Quick-Break</b>					
53222D	\$7.50	30-60	5	13	109
53223D	13.00	100	3	17	112
<b>3-Pole</b>					
53321SD	\$3.50	30	5	10	101
53322D	8.00	60	5	16	112
53323D	15.00	100	3	23	106
<b>4-Pole</b>					
53421SD	\$6.50	30	5	11	109TR
53422D	11.00	60	3	21	111TR
53423D	21.00	100	2	34	106TR

## Type A Colt-Noark Quadbreak Switches

Quick-Make and Quick-Break—Single Throw



No. 74236

### Fusible Cover Interlock

Cat. No.	Each	Amps. H.P.	Volts	Poles	Wt. Lbs.
*27223	\$12.00	30 2	250 A.C. or D.C.	2	6
*27233	15.00	30 3	230 A.C.	3	7 1/2
*27243	18.00	30 3	230 A.C.	4	9 1/2
74226	15.00	60 3	250 A.C. or D.C.	2	14
74236	20.00	60 5	230 A.C.	3	17
75746	24.00	60 7 1/2	230 A.C.	4	20
75721	23.00	100 15	250 A.C. or D.C.	2	20
75731	30.00	100 10	230 A.C.	3	28
75741	40.00	100 15	230 A.C.	4	37
75722	40.00	200 30	250 A.C. or D.C.	2	60
*27232	45.00	200 25	230 A.C.	3	50
75742	60.00	200 30	230 A.C.	4	90
75724	90.00	400 .....	250 A.C. or D.C.	2	130
75734	100.00	400 .....	230 A.C.	3	160
75744	130.00	400 .....	230 A.C.	4	190
75727	130.00	600 .....	250 A.C. or D.C.	2	200
75737	155.00	600 .....	230 A.C.	3	260
75747	205.00	600 .....	230 A.C.	4	340
75728	220.00	800 .....	250 A.C. or D.C.	2	325
75738	300.00	800 .....	230 A.C.	3	435
75748	385.00	800 .....	230 A.C.	4	545
75729	305.00	1200 .....	250 A.C. or D.C.	2	510
75739	385.00	1200 .....	230 A.C.	3	680
75749	510.00	1200 .....	230 A.C.	4	850

### Solid Neutral—Plain Cover

<b>3-Pole—2 Blades—2 Poles Fusible</b>						
*25733	\$14.00	30 3	125-250 or 230 A. C.	3	6	
75536	17.00	60 7 1/2	125-250 or 230 A. C.	3	17	
75531	27.00	100 15	125-250 or 230 A. C.	3	24	
75532	44.00	200 30	125-250 or 230 A. C.	3	50	
75534	100.00	400 .....	125-250 or 230 A. C.	3	163	
75537	145.00	600 .....	125-250 or 230 A. C.	3	235	
75538	240.00	800 .....	125-250 or 230 A. C.	3	325	
75539	340.00	1200 .....	125-250 or 230 A. C.	3	510	

### 4-Pole—3 Blades—3 Poles Fusible

*25743	\$18.00	30 3	230 A. C.	4	7 1/2
75546	23.00	60 7 1/2	230 A. C.	4	24
75541	36.00	100 15	230 A. C.	4	35 1/2
*25742	55.00	200 30	230 A. C.	4	52
75544	115.00	400 .....	230 A. C.	4	193
75547	175.00	600 .....	230 A. C.	4	325
75548	340.00	800 .....	230 A. C.	4	435
75549	420.00	1200 .....	230 A. C.	4	680

### 5-Pole—4 Blades—4 Poles Fusible

*25753	\$21.00	30 3	115-230 A. C.	5	10
75556	27.00	60 7 1/2	115-230 A. C.	5	31 1/2
75551	45.00	100 15	115-230 A. C.	5	42
75552	70.00	200 30	115-230 A. C.	5	121
75554	145.00	400 .....	115-230 A. C.	5	223
75557	225.00	600 .....	115-230 A. C.	5	415

\*Dualbreak.

Type A Colt-Noark Quadbreak Switches

Quick-Make and Quick-Break—Single Throw

Fusible—Cover Interlock

Cat. No.	Each	Amps.	H.P.	Volts	Poles	Wt. Lbs.
75923	\$18.00	30	5	575 A.C. or 600 D.C.	2	11
75933	22.00	30	7½	575 A.C.	3	13
75943	27.00	30	10	575 A.C.	4	15½
74426	19.00	60	10	575 A.C. or 600 D.C.	2	14
74436	23.00	60	15	575 A.C.	3	17
75946	29.00	60	20	575 A.C.	4	20
75921	30.00	100	30	575 A.C. or 600 D.C.	2	22
75931	35.00	100	30	575 A.C.	3	30
75941	46.00	100	40	575 A.C.	4	39
75922	47.00	200	50	575 A.C. or 600 D.C.	2	63
75932	58.00	200	50	575 A.C.	3	56
75942	70.00	200	50	575 A.C.	4	95
75924	110.00	400	....	575 A.C. or 600 D.C.	2	135
75934	120.00	400	....	575 A.C.	3	165
75944	155.00	400	....	575 A.C.	4	200
75927	175.00	600	....	575 A.C. or 600 D.C.	2	205
75937	200.00	600	....	575 A.C.	3	267
75947	240.00	600	....	575 A.C.	4	350
75928	270.00	800	....	575 A.C. or 600 D.C.	2	325
75938	350.00	800	....	575 A.C.	3	440
75948	450.00	800	....	575 A.C.	4	550
75929	380.00	1200	....	575 A.C. or 600 D.C.	2	515
75939	460.00	1200	....	575 A.C.	3	690
75949	575.00	1200	....	575 A.C.	4	860

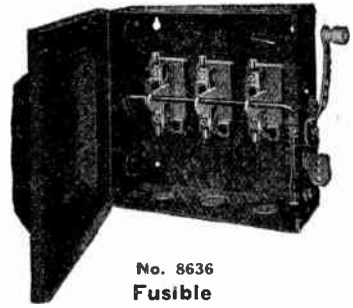
Switches with solid switching neutral can be supplied at same price as those of the same capacity with all poles fusible.

Non-Fusible—Cover Interlock

70923	\$11.00	30	5	575 A.C. or 600 D.C.	2	11
70933	13.00	30	10	{250-600 D.C.}	3	13
70943	18.00	30	10	{230-575 A.C.}	4	15½
71426	15.00	60	10	575 A.C. or 600 D.C.	2	14
71436	18.00	60	25	{250-600 D.C.}	3	17
70946	24.00	60	25	{230-575 A.C.}	4	20
70921	23.00	100	40	575 A.C. or 600 D.C.	2	20
70931	27.00	100	40	{250-600 D.C.}	3	28
70941	35.00	100	40	{230-575 A.C.}	4	37
70922	31.00	200	50	575 A.C. or 600 D.C.	2	60
70932	38.00	200	50	{250-600 D.C.}	3	56
70942	51.00	200	50	{230-575 A.C.}	4	90
70924	90.00	400	..	575 A.C. or 600 D.C.	2	130
70934	100.00	400	..	{250-600 D.C.}	3	160
70944	130.00	400	..	{230-575 A.C.}	4	190
70927	130.00	600	..	575 A.C. or 600 D.C.	2	200
70937	160.00	600	..	{250-600 D.C.}	3	260
70947	195.00	600	..	{230-575 A.C.}	4	340
70928	195.00	800	..	575 A.C. or 600 D.C.	2	325
70938	260.00	800	..	{250-600 D.C.}	3	435
70948	335.00	800	..	{230-575 A.C.}	4	545
70929	265.00	1200	..	575 A.C. or 600 D.C.	2	510
70939	350.00	1200	..	{250-600 D.C.}	3	680
70949	460.00	1200	..	{230-575 A.C.}	4	850

Type C Colt-Noark Nublade Switches

Quick-Make and Quick-Break—Single Throw



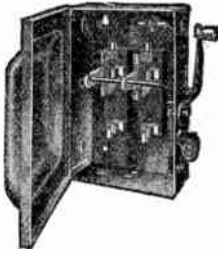
No. 8636  
Fusible  
230 Volts A.C., 250 Volts D.C.

Cat. No.	Each	Amps.	H.P.	Poles	Wt. Lbs.
8223	\$4.00	30	2	2	5
8233	6.00	30	3	3	6
8933	6.00	30	3	3SWN	6½
8243	13.00	30	3	4	9½
8226	10.00	60	3	2	12
8236	11.00	60	5	3	16
8936	11.00	60	5	3SWN	16
8246	15.00	60	7½	4	20
8221	16.00	100	10	2	19½
8231	20.00	100	10	3	25½
8931	20.00	100	10	3SWN	25½
8241	30.00	100	15	4	30
8222	22.00	200	20	2	37
8232	29.00	200	25	3	49
8932	29.00	200	25	3SWN	48
8242	48.00	200	25	4	63
8224	64.00	400	....	2	88
8234	74.00	400	....	3	133
8934	74.00	400	....	3SWN	121
8244	105.00	400	....	4	170
8227	99.00	600	....	2	127
8237	115.00	600	....	3	180
8937	115.00	600	....	3SWN	165
8247	165.00	600	....	4	247
<b>575 Volts A.C.</b>					
8433	\$12.00	30	....	3	10
8443	20.00	30	....	4	13¾
8436	15.00	60	....	3	18
8446	22.00	60	....	4	22
8431	28.00	100	....	3	29
8441	40.00	100	....	4	35
8432	42.00	200	....	3	58
8442	57.00	200	....	4	89
<b>Non-Fusible</b>					
<b>230 Volts A.C., 250 Volts D.C.</b>					
8723	\$4.00	30	2	2	5
8733	6.00	30	3	3	6½
8743	11.00	30	5	4	9
8726	9.00	60	5	2	12
8736	10.00	60	5	3	15½
8746	15.00	60	10	4	18
8721	16.00	100	10	2	17½
8731	17.00	100	10	3	23
8741	27.00	100	15	4	26
8722	21.00	200	20	2	35
8732	25.00	200	25	3	45
8742	42.00	200	25	4	55
8724	45.00	400	....	2	65
8734	57.00	400	....	3	100
8744	75.00	400	....	4	135
8727	76.00	600	....	2	85
8737	90.00	600	....	3	120
8747	150.00	600	....	4	155
<b>575 Volts A.C.</b>					
8633	\$9.00	30	....	3	9
8643	12.00	30	....	4	10
8636	12.00	60	....	3	15½
8646	20.00	60	....	4	18
8631	22.00	100	....	3	29
8641	31.00	100	....	4	35
8632	32.00	200	....	3	56
8642	47.00	200	....	4	86



## Type C Colt-Noark Nublade Switches

Quick-Make and Quick-Break—Single Throw  
Solid Neutral



No. 8131

3-Pole—2 Blades—2 Poles Fusible

Cat. No.	Each	Amps.	Volts	Weight Pounds
8133	\$4.50	30	125-250 or 230 A.C.	5½
8136	10.00	60	125-250 or 230 A.C.	13
8131	16.00	100	125-250 or 230 A.C.	19½
8132	25.00	200	125-250 or 230 A.C.	39
8134	70.00	400	125-250 or 230 A.C.	121
8137	110.00	600	125-250 or 230 A.C.	165

Cat. No.	Each	Amps.	Volts	Weight Pounds
8143	\$9.00	30	230 A.C.	7
8146	13.00	60	230 A.C.	17
8141	23.00	100	230 A.C.	23½
8142	35.00	200	230 A.C.	52
8144	90.00	400	230 A.C.	158
8147	160.00	600	230 A.C.	203

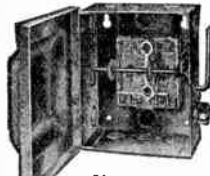
Cat. No.	Each	Amps.	Volts	Weight Pounds
8153	\$14.00	30	115-230 A.C.	9½
8156	22.00	60	115-230 A.C.	21
8151	40.00	100	115-230 A.C.	31
8152	56.00	200	115-230 A.C.	61½
8154	134.00	400	115-230 A.C.	175
8157	230.00	600	115-230 A.C.	255

## Type D Colt-Noark Switches

Closed Ends with Conduit Knockouts



No. 8393



No. 8683

Single Throw—For Plug Fuses

Cat. No.	Each	Amps.	Volts	Poles	Switch Fuses	Blades	Neutral	Wt. Lbs.
513	\$1.90	30	125	2	1	1	Solid	1¾
8283	1.90	30	125	2	1	1	Solid	4
8383	2.00	30	125-250	2	2	2	All Fused	4
8393	2.70	30	125-250	3	2	2	Solid	4½
8093	3.00	30	125-250	3	3	3	All Fused	5

Single Throw—For Cartridge Fuses

Cat. No.	Each	Amps.	Volts	Poles	Wt. Lbs.
8683	\$2.50	30	230 A.C.	2	4½
8263	4.50	30	230 A.C.	3	6
8963	4.50	30	230 A.C.	3SWN	6
8273	7.00	30	230 A.C.	4	9
8226-2	8.00	60	230 A.C.	2	12
8236-2	9.50	60	230 A.C.	3	15½
8936-2	9.50	60	230 A.C.	3SWN	15½
8246-2	13.00	60	230 A.C.	4	20
8221-2	14.00	100	230 A.C.	2	19½
8231-2	16.00	100	230 A.C.	3	25
8931-2	16.00	100	230 A.C.	3SWN	25
8241-2	25.00	100	230 A.C.	4	28½
*8222-2	20.25	200	230 A.C.	2	37
*8232-2	24.70	200	230 A.C.	3	49
*8932-2	24.70	200	230 A.C.	3SWN	48
*8242-2	44.40	200	230 A.C.	4	63
*8224-2	48.80	400	230 A.C.	2	88
*8234-2	70.00	400	230 A.C.	3	133
*8934-2	70.00	400	230 A.C.	3SWN	121
*8244-2	90.00	400	230 A.C.	4	170

\* Quick-break.

## Type D Colt-Noark Switches

Single Throw

Closed Ends with Conduit Knockouts  
Non-Fusible

Cat. No.	Each	Amps.	Volts	Poles	Wt. Lbs.
8753	\$2.50	30	230 A.C.	2	4½
8713	3.50	30	230 A.C.	3	5¾
8703	6.50	30	230 A.C.	4	9
8726-2	7.50	60	230 A.C.	2	12
8736-2	8.00	60	230 A.C.	3	15
8746-2	11.00	60	230 A.C.	4	18
8721-2	13.00	100	230 A.C.	2	17
8731-2	15.00	100	230 A.C.	3	22½
8741-2	21.00	100	230 A.C.	4	26
*8722-2	17.00	200	230 A.C.	2	35
*8732-2	23.20	200	230 A.C.	3	45
*8742-2	36.00	200	230 A.C.	4	55
*8724-2	37.50	400	230 A.C.	2	65
*8734-2	49.00	400	230 A.C.	3	100
*8744-2	65.50	400	230 A.C.	4	135

Solid Neutral

Cat. No.	Each	Amps.	Volts	Poles	Wt. Lbs.
8163	\$3.50	30	125-250 or 230 A.C.	3	4¾
8136-2	8.00	60	125-250 or 230 A.C.	3	12¼
8136-4	8.00	60	125-250 or 230 A.C.	3	12¼
8131-2	15.00	100	125-250 or 230 A.C.	3	19½
*8132-2	22.00	200	125-250 or 230 A.C.	3	39
*8134-2	68.00	400	125-250 or 230 A.C.	3	121

Cat. No.	Each	Amps.	Volts	Poles	Wt. Lbs.
8173	\$6.75	30	230 A.C.	4	5¾
8146-2	11.00	60	230 A.C.	4	17
8141-2	21.00	100	230 A.C.	4	23½
*8142-2	33.30	200	230 A.C.	4	52
*8144-2	88.00	400	230 A.C.	4	158

Cat. No.	Each	Amps.	Volts	Poles	Wt. Lbs.
8153-2	\$10.00	30	115-230 A.C.	5	9½
8156-2	17.00	60	115-230 A.C.	5	21
8151-2	33.00	100	115-230 A.C.	5	31
*8152-2	53.30	200	115-230 A.C.	5	61½
*8154-2	127.50	400	115-230 A.C.	5	175

\*Quick-break.

## Type D Colt-Noark Open End Switches

Sealable Fuse Covers

With Standardized Meter Terminal Chamber Knockouts  
in the Upper End

For Plug Fuses

Cat. No.	Each	Amps.	Volts	Fus-Switch Poles	Blades	Neutral	Wt. Lbs.	
8283-M	\$1.90	30	125	2	1	1	Solid	4
8383-M	2.00	30	125-250	2	2	2	All Fused	4
8393-M	2.70	30	125-250	3	2	2	Solid	4
8093-M	3.00	30	125-250	3	3	3	All Fused	5

For Cartridge Fuses

Cat. No.	Each	Amps.	Volts	Fus-Switch Poles	Blades	Neutral	Wt. Lbs.	
8683-M	\$2.50	30	230	2	2	2	All Fused	4½
8263-M	4.50	30	230	3	3	3	All Fused	6
8163-M	3.50	30	125-250	3	2	2	Solid	5
8963-M	4.50	30	125-250	3	2	3	Solid Switching	6
8173-M	6.75	30	125-250	4	3	3	Solid	5¾
8273-M	7.00	30	230	4	4	4	All Fused	9
8153-M	10.00	30	125-250	5	4	4	Solid	9½
8226-M	8.00	60	250	2	2	2	All Fused	11¾
8236-M	9.50	60	230	3	3	3	All Fused	15¼
8936-M	9.50	60	125-250	3	2	3	Solid Switching	15¼
8136-M	8.00	60	125-250	3	2	2	Solid	12¾
8246-M	13.00	60	230	4	4	4	All Fused	20
8146-M	11.00	60	230	4	3	3	Solid	17
8156-M	17.00	60	125-250	5	4	4	Solid	21

Cat. No.	Each	Amps.	Volts	Fus-Switch Poles	Blades	Neutral	Wt. Lbs.	
8221-M	14.00	100	250	2	2	2	All Fused	19½
8231-M	16.00	100	230	3	3	3	All Fused	25
8931-M	16.00	100	125-250	3	2	3	Solid Switching	25
8131-M	15.00	100	125-250	3	2	2	Solid	19½
8241-M	25.00	100	230	4	4	4	All Fused	28½
8141-M	21.00	100	125-250	4	3	3	Solid	23½
8151-M	33.00	100	125-250	5	4	4	Solid	31

**Colt-Noark "Acco" Meter Service Switches**

**Standardized—Accessible Service Side Fuse Type**

Sequence: Switch-Fuse-Meter

The "Acco" Switch provides a complete meter service unit including main switch and cutout, with meter protective and testing facilities.

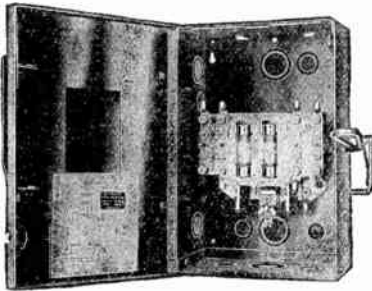
When the switch is at "off" position, the slide cover may be opened and fuses removed with assurance that the fuse contacts are dead; the switch cannot again be moved to

"on" until the slide is closed.

For testing purposes separate switches are provided on the load side of the meter.

The "Acco" conforms to standard cabinet dimensions, using all standardized endwalls and accessories.

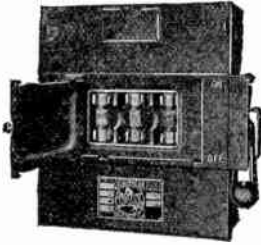
**For Single-Phase and D.C. Service**



No. 66336

Cat. No.	Switch with Endwall Each	Switch without Endwall Each	Amp.	Volts	Poles	Fusing	Switch Blades	Neutral	Test Blades	Std. Pkg.
9323	\$6.50	\$6.10	30	125-250	3	2 Plug	2	Solid	2	10
9333	6.90	6.50	30	125-250	3	2 Encl.	2	Solid	2	10
9343	5.30	4.90	30	125	2	1 Plug	1	Solid	1	10
9353	5.85	5.45	30	125	2	2 Plug	2	All Fused	2	10
9363	6.90	6.50	30	125 or 250	2	2 Encl.	2	All Fused	1	10
9373	5.70	5.30	30	125	2	1 Encl.	1	Solid	1	10
66376	13.00	12.10	60	125	2	1 N.E.C.	1	Solid	1 Set	4
66366	14.00	13.10	60	250	2	2 N.E.C.	2	None	1 Set	4
*66336	15.00	14.10	60	125-250	3	2 N.E.C.	2	Solid	2 Sets	4
66371	24.00	23.10	100	125	2	1 N.E.C.	1	Solid	1 Set	2
66361	24.00	23.10	100	250	2	2 N.E.C.	2	None	1 Set	2
*66331	26.00	25.10	100	125-250	3	2 N.E.C.	2	Solid	2 Sets	2

\*Also 230 volts a. c.



No. 67036 Open

**"Acco" Dualbreak Polyphase Meter Service Switch**

Cat. No.	Switch with Endwall Each	Switch without Endwall Each	Amp.	Volts	Poles	Switching	Fusible	Kind of Fuse	Set of Test Links	Std. Pkg.
67033	\$18.00	\$17.45	30	230	3	3	3 Legs	Encl.	2	4
68143	23.00	22.45	30	230	4	3	3 Legs	Encl.	3	4
67036	23.50	22.60	60	230	3	3	3 Legs	Encl.	2	4
68146	27.00	26.10	60	230	4	3	3 Legs	Encl.	3	4
67031	45.00	44.10	100	230	3	3	3 Legs	Encl.	2	2
68141	54.00	53.10	100	230	4	3	3 Legs	Encl.	3	2

**Colt-Noark "Seco" Meter Service Switches**  
**Single Break Type—Standardized—Sealed Service Side Fuse Type**

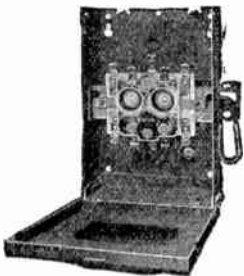
Sequence: Switch-Fuse-Meter

The "Seco" Switch is a complete meter service unit providing a main switch and cutout, service side fuses, full meter protection, and testing facilities, all sealed within the cabinet so that none but an authorized person may have access to them.

For testing purposes separate switches are provided on the load side of the meter.

The Seco conforms to standard cabinet dimensions, using all standardized endwalls and accessories.

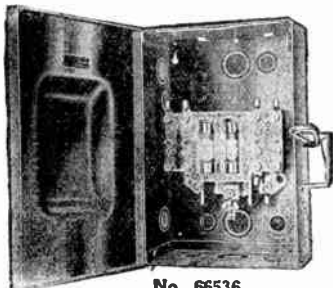
**For Single-Phase and D.C. Service**



No. 9523

Cat. No.	Switch with Endwall Each	Switch without Endwall Each	Amp.	Volts	Poles	Fusing	Switch Blades	Neutral	Test Blades	Std. Pkg.
9523	\$5.10	\$4.70	30	125-250	3	2 Plug	2	Solid	2	10
9533	5.85	5.45	30	125-250	3	2 Encl.	2	Solid	2	10
9543	4.10	3.70	30	125	2	1 Plug	1	Solid	1	10
9553	4.80	4.40	30	125	2	2 Plug	2	All Fused	1	10
9563	5.55	5.15	30	125 or 250	2	2 Encl.	2	All Fused	1	10
9573	5.20	4.80	30	125	2	1 Encl.	1	Solid	1	10
66576	10.50	9.60	60	125	2	1 N.E.C.	1	Solid	1 Set	4
66566	11.50	10.60	60	250	2	2 N.E.C.	2	None	1 Set	4
*66536	12.50	11.60	60	125-250	3	2 N.E.C.	2	Solid	2 Sets	4
66571	21.00	20.10	100	125	2	1 N.E.C.	1	Solid	1 Set	2
66561	21.00	20.10	100	250	2	2 N.E.C.	2	None	1 Set	2
*66531	23.00	22.10	100	125-250	3	2 N.E.C.	2	Solid	2 Sets	2

\*Also 230 volts a. c.

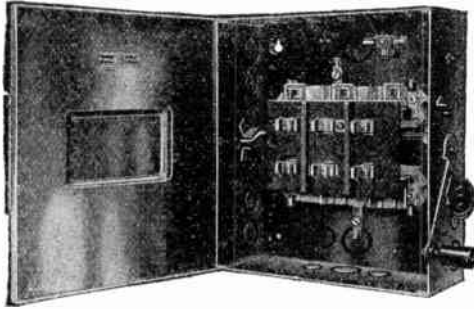


No. 66536

**"Seco" Dualbreak Polyphase Meter Service Switch—Sealed Fuses**

Cat. No.	Switch with Endwall Each	Switch without Endwall Each	Amp.	Volts	Poles	Switching	Fusible	Kind of Fuse	Set of Test Links	Std. Pkg.
67533	\$15.00	\$14.45	30	230	3	3	3 Legs	Encl.	2	4
68643	21.50	20.95	30	230	4	3	3 Legs	Encl.	3	4
67536	20.00	19.10	60	230	3	3	3 Legs	Encl.	2	4
68646	25.00	24.10	60	230	4	3	3 Legs	Encl.	3	4
67531	35.00	34.10	100	230	3	3	3 Legs	Encl.	2	2
68641	44.00	43.10	100	230	4	3	3 Legs	Encl.	3	2

## Colt-Noark Entrance Switches Accessible Fuse Covers



### Single Phase and D.C.—Solid Neutral

Cat. No.	Each	Amp.	Volts	Switch Blades	Fusible	Std. Pkg.	Wt. Lbs.
8323	\$5.85	30		2	2 Legs	10	8 <sup>3</sup> / <sub>4</sub>
8333	6.60	30		2	2 Legs	10	9
8343	5.00	30		2	2 Legs	10	8 <sup>3</sup> / <sub>4</sub>
7636	10.75	60	115-230 A.C.	2	2 Legs	4	11
76331	19.50	100	125-250 D.C.	2	2 Legs	2	35
76232	55.00	200		2	2 Legs	1	65
76234	120.00	400		2	2 Legs	1	138
76237	190.00	600		2	2 Legs	1	205
76238	265.00	800		2	2 Legs	1	325
<b>3-Phase—3-Wire</b>							
77033	\$14.50	30	230	3	3 Legs	4	11 <sup>1</sup> / <sub>2</sub>
77036	20.00	60	230	3	3 Legs	4	20
77031	32.00	100	230	3	3 Legs	2	36
75232	60.00	200	230	3	3 Legs	1	82
75234	125.00	400	230	3	3 Legs	1	170
75237	200.00	600	230	3	3 Legs	1	280
75238	320.00	800	230	3	3 Legs	1	450
<b>3-Phase—4-Wire—Solid Neutral</b>							
77143	\$18.00	30	230	3	3 Legs	4	11 <sup>1</sup> / <sub>2</sub>
77146	21.00	60	230	3	3 Legs	4	20
77141	38.00	100	230	3	3 Legs	2	36
76242	77.00	200	230	3	3 Legs	1	82
76244	135.00	400	230	3	3 Legs	1	170
76247	205.00	600	230	3	3 Legs	1	280
76248	340.00	800	230	3	3 Legs	1	460
<b>2-Phase—5-Wire—Solid Neutral</b>							
76253	\$26.00	30	115-230	4	4 Legs	4	11
76256	32.00	60	115-230	4	4 Legs	4	22
76251	50.00	100	115-230	4	4 Legs	2	41
76252	94.00	200	115-230	4	4 Legs	1	100
76254	175.00	400	115-230	4	4 Legs	1	205
76257	250.00	600	115-230	4	4 Legs	1	355

## Colt-Noark Standardized Universal Meter Service Switches Accessible Branch Plug Fuses For Single-Phase and D.C. Service 30 Amperes



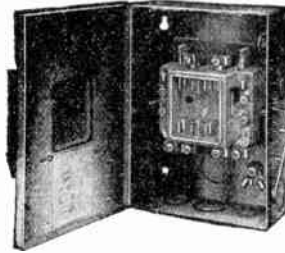
Switch-fuse-meter type; blades, fuses and all current-carrying parts are dead when switch is off. Service switch, service fuses and all service connections are sealed and accessible only to authorized persons. Branch circuits are accessible at all times.

Cat. No.	With Endwall Each	Without Endwall Each	SERVICE SWITCH			BRANCH CIRCUITS			Std. Pkg.
			No. Poles	No. Blades	No. Fuses	No. Circuits	No. Fuses Ea.	Circuit	
971123	\$5.10	\$4.70	2	1	1	2	2	1	10
*9723	6.75	6.35	2	1	1	4	4	1	10
972123	6.25	5.85	2	1	1	4	4	1	10
973333	5.50	5.10	2	1	1	1	2	2	10
			2	2	2	1	2	2	10
			3	2	2	1	2	2	10
*9753	7.50	7.10	2	1	1	2	4	2	10
			3	2	2	4	4	1	10
			2	1	1	2	4	2	10
975333	7.00	6.60	2	2	2	2	4	2	10
			3	2	2	4	4	1	10
			3	2	2	2	4	2	10
*9793	7.50	7.10	3	2	2	2	4	2	10
979333	7.00	6.60	3	2	2	2	4	2	10

\*Enclosed in long cabinets; equipped with testing links.

## Colt-Noark New Sequence Meter Service Switches

### Sequence: Switch-Meter-Fuse



### Accessible Fuse Covers

The S.M.F. System is built upon two general types of devices: One with the switch blade on each side of the fuses, and the other with both switch blades at the left of the fuses. The former is particularly adapted to the use of links, and the latter to the use of flexible jumpers for testing.

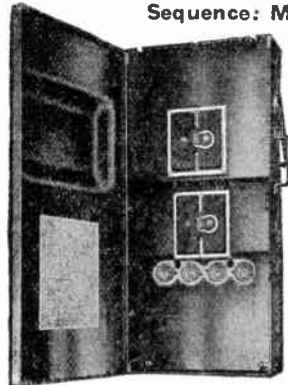
No. 6636

### Solid Neutral—125-250 Volts

Cat. No.	Fuses Between Switch Blades	Switch Blades at Left of Fuses	With Endwall Each	Amp.	Poles	Main Fuses	Switch Blades	Range Fuses	Lighting Fuses	Std. Pkg.
*6623	.....	.....	\$5.30	30	2	1	1	0	0	10
*6623-2	.....	.....	8.10	30	2	1	1	0	2	10
*6623-4	.....	.....	9.00	30	2	1	1	0	4	10
*6633	*6933	.....	6.50	30	3	2	2	0	0	10
*6633-2	*6933-2	.....	9.30	30	3	2	2	0	2	10
*6633-4	*6933-4	.....	10.20	30	3	2	2	0	4	10
6636	6936	.....	11.00	60	3	2	2	0	0	4
6636R	6936R	.....	17.60	60	3	2	2	0	0	4
6636RL4	6936RL4	.....	19.00	60	3	2	2	2	4	4
6636RL6	6936RL6	.....	22.10	60	3	2	2	2	6	4
6636RL8	6936RL8	.....	23.40	60	3	2	2	2	8	4
.....	6931	.....	20.00	100	3	2	2	0	0	2

\*Plug fuses.

## Colt-Noark Combination Entrance Switches Sequence: Meter-Switch-Fuse



No. 7936RL4

No testing facilities.

For use with separate meter test box. Single door and dead front plate over main switch and branch circuit distribution blocks.

Conduit endwalls.

### Solid Neutral 60 Amps., 125-250 V. 3-Pole

Cat. No.	Each	Main Fuses	Range Fuses	Lighting Fuses	Std. Pkg.
7936R	\$13.50	2	2	0	4
7936L4	11.00	2	0	4	4
7936RL4	15.50	2	2	4	4
7936RL6	18.00	2	2	6	4
7936RL8	20.00	2	2	8	4

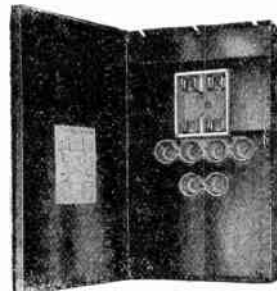
## Colt-Noark Combination Fuse Cabinets

### Surface Mounting

These cabinets may be coupled directly to the meter service or entrance switch or mounted in some other convenient location in the building. The 60-ampere cutout is equipped with a fuse puller.

All wiring within the cabinet is covered by a dead front plate.

Cat. Nos. 2 and 4 are also supplied already wired for convenience in attaching to meter cabinet.



No. 5RL6

Cat. No.	Each	60-Amp. Cir.	30-Amp. Cir.	Ht. In.	Width In.	Depth In.	Std. Pkg.
5R	\$7.15	1	0	9 <sup>1</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	4
5RL4	10.90	1	4	11 <sup>5</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	4
5RL6	12.75	1	6	14	8 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	4
5RL8	16.55	1	8	14	8 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	4
2	1.70	0	2	4 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>8</sub>	10
2W	2.80	0	2	4 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>8</sub>	10
4	2.34	0	4	7	6 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	10
4W	3.70	0	4	7	6 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	10



**Type A Trumbull Safety Switches**  
Quick Make and Quick Break—Interlocking

2, 3 and 4-Pole, 30-2400 Amperes  
230-575 Volts A.C., 250-600 Volts D.C.  
800 Amperes and Above, Quick Break Only



No. 36364

Knockouts in ends, sides and rear. Above 400 amperes, no knockouts furnished.

Multiple terminal lugs furnished on switches 800 amperes and above.

All switches 400 amperes and above have ebony asbestos bases.

All switches listed below will break full rated load, except the 800 and 1200-am-

peres which break full load at 230 volts a.c.—250 volts d.c. and loads of not over 200 amperes at 575 volts a.c.—600 volts d.c.

**Single Throw—No Fuse—Snuf-Arc Type**  
575 Volts A.C., 600 Volts D.C.—2-Pole

Cat. No.	Each	Amps.	H.P.	Shp. Wt. Lbs.	Cat. No.	Each	Amps.	H.P.	Shp. Wt. Lbs.
*36221	\$11.00	30	3	11	†36265	\$90.00	400	78	78
36261	11.00	30	10	13	†36266	130.00	600	100	100
36262	15.00	60	15	13	30267	195.00	800	180	180
36263	23.00	100	25	23	30268	265.00	1200	270	270
36264	31.00	200	50	33					

575 Volts A.C.—3-Pole

*36321	\$13.00	30	5	12	36365	\$100.00	400	100	100
36362	18.00	30-60	25	18	36366	160.00	600	123	123
36363	27.00	100	40	29	30367	260.00	800	240	240
36364	38.00	200	50	40	30368	350.00	1200	360	360

575 Volts A.C.—4-Pole

*36421	\$18.00	30	5	16	36465	\$130.00	400	112	112
36462	24.00	30-60	25	24	36466	195.00	600	190	190
36463	35.00	100	40	34	30467	335.00	800	300	300
36464	51.00	200	50	43	30468	460.00	1200	450	450

\*230 volts a.c., 250 volts d.c. without snuf-arcs.

†Breaks full rated load at 575 volts a.c. only.

**Single Throw—Fusible—Without Snuf-Arcs**

230 Volts A.C., 250 Volts D.C.—2-Pole

72221	\$12.00	30	2	12	72225	\$90.00	400	95	95
72222	15.00	60	5	14	†72226	130.00	600	121	121
72223	23.00	100	10	27	†60227	220.00	800	211	211
72224	40.00	200	20	44	†60228	305.00	1200	251	251

230 Volts A.C.—3-Pole

72321	\$15.00	30	3	14	†72326	\$155.00	600	163	163
72322	20.00	60	5	20	†60327	300.00	800	282	282
72323	30.00	100	10	36	†60328	385.00	1200	332	332
72324	45.00	200	25	64	60329	790.00	1800	...	...
72325	100.00	400	...	135	60320	935.00	2400	...	...

230 Volts A.C.—4-Pole

72421	\$18.00	30	3	17	†72426	\$205.00	600	203	203
72422	24.00	60	7½	29	†60427	385.00	800	383	383
72423	40.00	100	15	47	†60428	510.00	1200	453	453
72424	60.00	200	30	87	60429	1020.00	1800	...	...
72425	130.00	400	...	165	60420	1260.00	2400	...	...

†With snuf-arcs.

**Single Throw—Fusible—Snuf-Arc Type**

575 Volts A.C., 600 Volts D.C.—2-Pole

72261	\$18.00	30	5	20	†72265	\$110.00	400	111	111
72262	19.00	60	15	22	†72266	175.00	600	135	135
72263	30.00	100	25	35	60267	270.00	800	225	225
72264	47.00	200	50	58	60268	380.00	1200	265	265

575 Volts A.C.—3-Pole

72361	\$22.00	30	7½	24	72365	\$120.00	400	150	150
72362	23.00	60	15	25	72366	200.00	600	185	185
72363	35.00	100	30	41	60367	350.00	800	304	304
72364	58.00	200	60	70	60368	460.00	1200	491	491

575 Volts A.C.—4-Pole

72461	\$27.00	30	10	29	72465	\$155.00	400	174	174
72462	29.00	60	20	31	72466	240.00	600	236	236
72463	45.00	100	40	53	60467	450.00	800	416	416
72464	70.00	200	50	90	60468	575.00	1200	486	486

†Breaks full rated load at 575 volts a.c. only.

**Type R.B. Trumbull Safety Switches**  
Quick Make and Quick Break—Interlocking



No. 68322

All switches will break full rated load except the 800-ampere which will break full load at 230 volts a.c., 250 volts d.c. and loads of not over 200 amperes at 575 volts a.c., 600 volts d.c.

All switch parts are cadmium-plated.

The 3-pole switches can be furnished at regular prices with solid neutral strap replacing one blade and fuse assembly, or with neutral strap replacing one fuse (switching neutral). Add the letters SWN to regular Cat. No.

**Side Operated—Single Throw—No Fuse**

575 Volts A.C.,

600 Volts D.C.—2-Pole

575 Volts A.C.—3-Pole

Cat. No.	Each	Amp.	H.P. Rating	Cat. No.	Each	Amp.	H.P. Rating
34261	\$11.00	30	* 5	34361	\$13.00	30	*10
34262	15.00	60	*10	34362	18.00	60	*25
34263	23.00	100	*20	34363	27.00	100	*40
34264	31.00	200	*25	34364	38.00	200	*50
34265	90.00	400	...	34365	100.00	400	.....
34266	130.00	600	...	34366	160.00	600	.....
34267	195.00	800	...	34367	260.00	800	.....

**Side Operated—Single Throw—Fusible**

230 Volts A.C.,

250 Volts D.C.—2-Pole

575 Volts A.C.,

600 Volts D.C.—2-Pole

68221	\$12.00	30	2	68261	\$18.00	30	* 5
68222	15.00	60	5	68262	19.00	60	*10
68223	23.00	100	10	68263	30.00	100	*20
68224	40.00	200	20	68264	47.00	200	*25
68225	90.00	400	...	68265	110.00	400	.....
68226	130.00	600	...	68266	175.00	600	.....
68227	220.00	800	...	68267	270.00	800	.....

230 Volts A.C.—3-Pole

575 Volts A.C.—3-Pole

68321	\$15.00	30	3	68361	\$22.00	30	* 7½
68322	20.00	60	5	68362	23.00	60	*15
68323	30.00	100	10	68363	35.00	100	*30
68324	45.00	200	25	68364	58.00	200	*50
68325	100.00	400	...	68365	120.00	400	.....
68326	155.00	600	...	68366	200.00	600	.....
68327	300.00	800	...	68367	350.00	800	.....

**Front Operated—Single Throw—No Fuse**

575 Volts A.C.,

600 Volts D.C.—2-Pole

575 Volts A.C.—3-Pole

32261	\$11.00	30	* 5	32361	\$13.00	30	*10
32262	15.00	60	*10	32362	18.00	60	*25
32263	23.00	100	*20	32363	27.00	100	*40
32264	31.00	200	*25	32364	38.00	200	*50
32265	90.00	400	...	32365	100.00	400	.....
32266	130.00	600	...	32366	160.00	600	.....
32267	195.00	800	...	32367	260.00	800	.....

**Front Operated—Single Throw—Fusible**

230 Volts A.C.,

250 Volts D.C.—2-Pole

575 Volts A.C.,

600 Volts D.C.—2-Pole

64221	\$12.00	30	2	64261	\$18.00	30	* 5
64222	15.00	60	5	64262	19.00	60	*10
64223	23.00	100	10	64263	30.00	100	*20
64224	40.00	200	20	64264	47.00	200	*25
64225	90.00	400	...	64265	110.00	400	.....
64226	130.00	600	...	64266	175.00	600	.....
64227	220.00	800	...	64267	270.00	800	.....

230 Volts A.C.—3-Pole

575 Volts A.C.—3-Pole

64321	\$15.00	30	3	64361	\$22.00	30	* 7½
64322	20.00	60	5	64362	23.00	60	*15
64323	30.00	100	10	64363	35.00	100	*30
64324	45.00	200	25	64364	58.00	200	*50
64325	100.00	400	...	64365	120.00	400	.....
64326	155.00	600	...	64366	200.00	600	.....
64327	300.00	800	...	64367	350.00	800	.....

\*460-575 volts a.c. only.

## Type RM Trumbull Safety Switches

Quick Make and Quick Break—Interlocking

Break Full Rated Load

### RM (Rotor Movement) Design

A rugged, full safety device for installations where size is a prime factor. Entire switch and fuse block unit is removable from box. Thus, entire box space is available for connecting conduit and running wires.

When switch is pulled off, the blades throw into deep narrow slots in the base and thus effectually snuff out any arc which might have a tendency to follow.



No. 92321-C

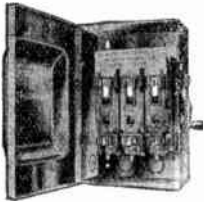
The fuse block mounted over the switch base, brings fuses directly to the front in most accessible position. Dead front construction.

### Single Throw—No Fuse

230 Volts A.C.—250 Volts D.C.

Amp.	H.P. Rating	Pole	Volts	Mounted in Steel Boxes		In Weatherproof Cast Iron Boxes	
				Cat. No.	Each	Cat. No.	Each
30	3	2	{ 230 A.C. 250 D.C. }	46221	\$11.00	56	46221C \$35.50
30	7½	3	230 A.C.	46321	13.00	69	46321C 36.50
30	7½	4	230 A.C.	46421	18.00	82	.....
575 Volts A.C.—600 Volts D.C.							
60	15	2	{ 575 A.C. 600 D.C. }	46262	\$15.00	*18	46262C 43.00
60	25	3	575 A.C.	46362	18.00	*20	46362C 45.00
60	25	4	575 A.C.	46462	24.00	*22	.....

### Single Throw—Fusible



No. 92362



No. 92362-C

230 Volts A.C.—250 Volts D.C.

30	2	2	{ 230 A.C. 250 D.C. }	92221	\$12.00	61	92221C \$36.00
30	3	3	230 A.C.	92321	15.00	72	92321C 37.50
30	3	4	230 A.C.	92421	18.00	94	92421C 40.50
60	5	2	{ 230 A.C. 250 D.C. }	92222	15.00	*15	92222C 43.50
60	5	3	230 A.C.	92322	20.00	*18	92322C 45.50
60	7½	4	230 A.C.	92422	24.00	*22	.....
575 Volts A.C.—600 Volts D.C.							
30	5	2	{ 575 A.C. 600 D.C. }	92261	\$18.00	*13	92261C \$45.00
30	7½	3	575 A.C.	92361	22.00	*11	92361C 47.50
30	10	1	575 A.C.	92461	27.00	*23	.....
60	15	2	{ 575 A.C. 600 D.C. }	92262	19.00	*16	92262C 45.00
60	15	3	575 A.C.	92362	23.00	*19	92362C 47.50
60	25	4	575 A.C.	92462	29.00	*23	.....

\*Weight of carton of 1.

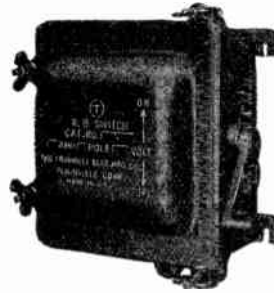
†60-ampere construction.

Three and four-pole fusible switches with solid neutral strap replacing fuse can be furnished at regular prices.

## Trumbull Safety Switches

In Cast Iron Weatherproof Boxes

Quick Make and Quick Break—Interlocking



No. 34361C

Equipped with gaskets in cover making a weatherproof box.

All switches break full rated load.

The 3 and 4-pole switches with a neutral strap replacing either one blade and fuse assembly or one blade only can be furnished at same price as the regular switches.

Special charge for drilling holes in cast iron boxes.

### Type A Switches

Single Throw—Fusible

Without Snuff-Arcs

230 Volts A.C., 250 Volts D.C.—2-Pole

Cat. No.	Each	Amp.	H.P. Rating
72223C	\$135.00	100	10
72224C	155.00	200	20
230 Volts A.C.—3-Pole			
72323C	\$145.00	100	10
72324C	172.00	200	25
230 Volts A.C.—4-Pole			
72423C	\$159.00	100	15

With Snuff-Arcs

575 Volts A.C., 600 Volts D.C.—2-Pole

72263C	\$154.00	100	25
72264C	179.00	200	50
575 Volts A.C.—3-Pole			
72363C	\$158.50	100	30
72364C	191.00	200	50
575 Volts A.C.—4-Pole			
72463C	\$162.50	100	40

### Type R.B. Switches

Side Operated—Single Throw—No Fuse

230-575 Volts A.C., 250-600 Volts D.C.—2-Pole

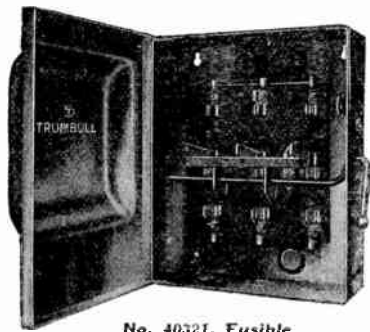
Cat. No.	Each	Amp.	H.P. RATINGS	
			230 A.C.	250 D.C.
34261C	\$35.50	30	5	3
34262C	43.00	60	10	5
34263C	150.00	100	15	10
230-575 Volts A.C.—3-Pole				
34361C	\$36.50	30	10	10
34362C	45.00	60	20	25
34363C	154.00	100	30	40

Side Operated—Single Throw—Fusible

230 Volts A.C., 250 Volts D.C.—2-Pole

68221C	\$36.00	30	2	2
68222C	43.50	60	5	5
68223C	135.00	100	7½	10
68224C	155.00	200	10	20
575 Volts A.C., 600 Volts D.C.—2-Pole				
68261C	\$45.00	30	..	5
68262C	45.00	60	..	10
68263C	154.00	100	..	20
230 Volts A.C.—3-Pole				
68321C	\$37.50	30	3	..
68322C	45.50	60	5	..
68323C	145.00	100	10	..
68324C	172.00	200	25	..
575 Volts A.C.—3-Pole				
68361C	\$47.50	30	..	7½
68362C	47.50	60	..	15
68363C	158.50	100	..	30

**Type C Trumbull Enclosed Switches**  
**Single Throw—Quick Make and Quick Break**  
 Break Full Rated Load



No. 40321, Fusible

Key slots in rear of box at top with which to hang box in position until ready to fasten permanently.

All switches equipped with outside grounding lug.

Knockouts in ends, sides and rear.

The 30-ampere 575-volt switches are made of 60-ampere stock.

This line meets requirements for a high-class punched-clip switch in externally-operated box.

Type C line has no interlocking features. Switch is of punched-clip construction; there is a difference between punched-clip switches in machine work, alignment, adjustment and in electrical and mechanical strength.

**No Fuse—Without Snuf-Arcs**

230 Volts A.C., 250 Volts D.C.—2-Pole				230 Volts A.C.—3-Pole					
Cat. No.	Each	Amp.	H.P. Rating	Wt. Lbs.	Cat. No.	Each	H.P. Rating	Wt. Lbs.	
20221	\$ 5.50	30	2	6	20321	\$ 7.00	30	3	9
20222	9.00	60	5	11	20322	10.00	60	5	13
20223	16.00	100	10	16	20323	17.00	100	10	18
20224	21.00	200	20	22	20324	25.00	200	25	34
*20225	45.00	400	..	..	*20325	57.00	400	..	..
*20226	76.00	600	..	..	*20326	90.00	600	..	..

**No Fuse—With Snuf-Arcs**

575 Volts A.C.—3-Pole				575 Volts A.C.—4-Pole					
Cat. No.	Each	Amp.	H.P. Rating	Wt. Lbs.	Cat. No.	Each	H.P. Rating	Wt. Lbs.	
20361	\$9.00	30	15	12	20461	\$12.00	30	15	20
20362	12.00	30-60	15	13	20462	20.00	30-60	15	21
20363	22.00	100	30	18	20463	31.00	100	40	34
20364	32.00	200	50	34	20464	47.00	200	50	50

**Fusible—Without Snuf-Arcs**

230 Volts A.C., 250 Volts D.C.—2-Pole				230 Volts A.C.—3-Pole					
Cat. No.	Each	Amp.	H.P. Rating	Wt. Lbs.	Cat. No.	Each	H.P. Rating	Wt. Lbs.	
†13221	\$ 4.00	30	..	6	†13321	\$ 6.00	30	..	8
40221	6.00	30	2	8	40321	7.50	30	3	9
40222	10.00	60	3	12	40322	11.00	60	5	17
40223	16.00	100	7½	23	40323	20.00	100	10	30
40224	22.00	200	15	36	40324	29.00	200	25	50
*40225	64.00	400	..	92	*40325	74.00	400	..	125
*40226	99.00	600	..	..	*40326	115.00	600	..	..

230 Volts A.C., 3-Pole, 3 Blades, 2 Fuses				230 Volts A.C.—4-Pole					
Cat. No.	Each	Amp.	H.P. Rating	Wt. Lbs.	Cat. No.	Each	H.P. Rating	Wt. Lbs.	
42321	\$ 7.50	30	3	9	40421	\$13.00	30	3	14
42322	11.00	60	5	17	40422	15.00	60	7½	25
42323	20.00	100	10	30	40423	30.00	100	15	66
*42324	29.00	200	25	50	*40424	48.00	200	30	92
*42325	74.00	400	..	125	*40425	105.00	400	..	165
*42326	115.00	600	..	..	*40426	165.00	600	..	..

**Fusible—With Snuf-Arcs**

575 Volts A.C.—3-Pole				575 Volts A.C.—4-Pole					
Cat. No.	Each	Amp.	H.P. Rating	Wt. Lbs.	Cat. No.	Each	H.P. Rating	Wt. Lbs.	
40361	\$12.00	30	7½	19	40461	\$20.00	30	10	29
40362	15.00	60	15	20	40462	22.00	60	15	30
40363	28.00	100	30	35	40463	40.00	100	40	66
40364	42.00	200	50	75	40464	57.00	200	50	96

**Solid Neutral**

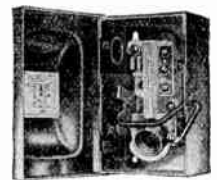
115-230 Volts A.C., 125-250 Volts D.C., 3-Pole, 2 Blades, 2 Fuses				115-230 Volts A.C., 4-Pole, 3 Blades, 3 Fuses					
Cat. No.	Each	Amp.	H.P. Rating	Wt. Lbs.	Cat. No.	Each	H.P. Rating	Wt. Lbs.	
41321	\$ 7.00	30	2	8	41421	\$ 9.00	30	3	10
41322	10.00	60	3	12	41422	13.00	60	5	18
41323	16.00	100	7½	23	41423	23.00	100	10	31
*41324	25.00	200	15	36	*41424	35.00	200	25	51
*41325	70.00	400	..	95	*41425	90.00	400	..	130
*41326	110.00	600	..	120	*41426	160.00	600	..	165

\*Copper parts of Type A construction.  
 †Porcelain base, interlocking cover.

**Type D Trumbull Enclosed Switches**  
**Single Throw**



No. 12321



No. 24111

**No Fuse—250 Volts, 230 Volts A.C.**

Cat. No.	Each	Amp.	Volts	Pole	Blades	Wt., Lbs. Each
12221	\$2.50	30	250	2	2	5
12321	3.50	30	230 A.C.	3	3	8
12421	6.50	30	230 A.C.	4	4	10
12222	7.50	60	250	2	2	9
12322	8.00	60	230 A.C.	3	3	12
12422	11.00	60	230 A.C.	4	4	15½
12223	13.00	100	250	2	2	14
12323	15.00	100	230 A.C.	3	3	17
12423	21.00	100	230 A.C.	4	4	20
12224	17.00	200	250	2	2	22
12324	23.20	200	230 A.C.	3	3	31
12424	36.00	200	230 A.C.	4	4	50
12225	37.50	400	250	2	2	..
12325	49.00	400	230 A.C.	3	3	..
12425	65.50	400	230 A.C.	4	4	..

**For Plug Fuses—Porcelain Base—125-250 Volts**

CAT. NOS.		Each	Amp.	Volts	Pole	Blades	Fuses	Wt. Lbs.
Closed Ends	Ends with Twistouts							
†24111	.....	\$1.90	30	125	28N	1	1	30
†24111K	.....	1.90	30	125	28N	1	1	30
24211	27211	2.00	30	125	2	2	2	47
*023111	025111	1.90	30	125	28N	1	1	45
23111	25111	1.90	30	125	28N	1	1	47
24311	27311	3.00	30	125-250	3	3	3	70
23311	25311	2.70	30	125-250	38N	2	2	70
*023311	025311	2.70	30	125-250	38N	2	2	50
24311SWN	27311SWN	3.00	30	125-250	38WN	3	2	70

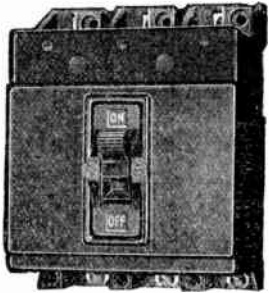
\*Removable end plates with knockouts, top and bottom.  
 †Base mounted on saddle, entire unit easily removed.  
 ‡Two separate and insulated neutral straps each having two terminal screws provide terminals for oil burner thermostat and neutral wires.

**For Cartridge Fuses—Maximum 250 Volts**

CAT. NOS.		Each	Amp.	Volts	Pole	Blades	Fuses	Wt. Lbs.
Closed Ends	Ends with Twistouts							
24221	27221	\$2.50	30	250	2	2	2	5
24321	27321	4.50	30	230 A.C.	3	3	3	8
23321	25321	3.50	30	125-250	38N	2	2	6
24321SWN	27321SWN	4.50	30	230 A.C.	38WN	3	2	8
24421	27421	7.00	30	230 A.C.	4	4	4	9
23421	25421	6.75	30	230 A.C.	48N	3	3	9
24222	27222	8.00	60	250	2	2	2	12
24322	27322	9.50	60	230 A.C.	3	3	3	11½
23322	25322	8.00	60	115-230 A.C.	38N	2	2	13
24322SWN	27322SWN	9.50	60	230 A.C.	38WN	3	2	15
24422	27422	13.00	60	230 A.C.	4	4	4	17½
23422	25422	11.00	60	230 A.C.	48N	3	3	17
24223	27223	14.00	100	250	2	2	2	20½
24323	27323	16.00	100	230 A.C.	3	3	3	23
23323	25323	15.00	100	115-230 A.C.	38N	2	2	21
24323SWN	27323SWN	16.00	100	230 A.C.	38WN	3	2	25
24423	27423	25.00	100	230 A.C.	4	4	4	28
23423	25423	21.00	100	230 A.C.	48N	3	3	27
24224	.....	20.25	200	250	2	2	2	36
24324	27324	24.70	200	230 A.C.	3	3	3	50
23324	25324	22.00	200	115-230 A.C.	38N	2	2	34
24324SWN	27324SWN	24.70	200	230 A.C.	38WN	3	2	45
24424	.....	44.40	200	230 A.C.	4	4	4	92
23424	.....	33.30	200	230 A.C.	48N	3	3	48
24225	.....	48.80	400	250	2	2	2	92
24325	27325	70.00	400	230 A.C.	3	3	3	125
23325	25325	68.00	400	115-230 A.C.	38N	2	2	90
24325SWN	27325SWN	70.00	400	230 A.C.	38WN	3	2	120
24425	.....	90.00	400	230 A.C.	4	4	4	165
23425	.....	88.00	400	230 A.C.	48N	3	3	125



## No. AF-1 Trumbull Circuit Breakers



15 to 50-Ampere  
Frame Size  
250 Volts, 3-Pole

An unusual principle of arc interruption is incorporated in the design of these breakers. On overloads of short circuits a thermal strip deflects, releasing a latch which in turn causes the contacts to open. The contacts themselves open within a heavy cylinder, creating a terrific pressure which extinguishes the arc.

The 50-ampere frame size has an interrupting capacity of 5000 amperes and the larger frame sizes an interrupting capacity of 10,000 amperes.

With one design of breaker as listed for the various frame

sizes, assemblies may be made for enclosed breakers, load centers, panelboards of all types including the convertible, as well as switchboards of front or back connected construction.

### 125 Volts A.C., 125 Volts D.C.

#### 50-Ampere Frame

Amp.	Circuit Breaker Only	With Screw Cover Top *Flush Mounting				
		SINGLE POLE		2 SINGLE POLE		
Cat. No.	Each	Cat. No.	Each	Cat. No.	Each	
15	AF11015	\$4.75	AF11015F	\$6.75	AF111015F	\$11.80
20	AF11020	4.75	AF11020F	6.75	AF111020F	11.80
25	AF11025	4.75	AF11025F	6.75	AF111025F	11.80
35	AF11035	5.40	AF11035F	7.40	AF111035F	13.10
50	AF11050	5.40	AF11050F	7.40	AF111050F	13.10

\*For surface mounting add S to Cat. No. instead of F.

### 230 Volts A.C., 125-250 Volts D.C.

#### 50-Ampere Frame

Amp.	Circuit Breaker Only	2 POLE		3-POLE	
		Each	*With Hinged Cover Box Each	Each	*With Hinged Cover Box Each
15	†AF21015	\$10.00	\$18.00	AF25015	\$29.00 \$34.00
20	†AF21020	10.00	18.00	AF25020	29.00 34.00
25	†AF21025	10.00	18.00	AF25025	29.00 34.00
35	†AF21035	10.75	20.00	AF25035	30.00 35.00
50	†AF21050	10.75	20.00	AF25050	30.00 35.00

#### 100-Ampere Frame

50	AF22050	\$32.00	\$38.00	AF26050	\$51.00 \$57.00
70	AF22070	33.00	39.00	AF26070	52.00 58.00
90	AF22090	35.00	41.00	AF26090	54.00 60.00
100	AF22100	36.00	42.00	AF26100	55.00 61.00

#### 225-Ampere Frame

50	AF23050	\$81.00	\$89.00	AF27050	95.00 103.00
70	AF23070	81.00	89.00	AF27070	95.00 103.00
90	AF23090	81.00	89.00	AF27090	95.00 103.00
100	AF23100	81.00	89.00	AF27100	95.00 103.00
125	AF23125	83.00	91.00	AF27125	97.00 105.00
150	AF23150	85.00	93.00	AF27150	98.00 107.00
175	AF23175	86.00	94.00	AF27175	101.00 109.00
200	AF23200	88.00	96.00	AF27200	102.00 110.00
225	AF23225	90.00	98.00	AF27250	104.00 112.00

#### 600-Ampere Frame

225	AF24225	\$221.00	\$241.00	AF28225	\$237.00 \$257.00
250	AF24250	231.00	251.00	AF28250	247.00 267.00
325	AF24325	240.00	260.00	AF28325	257.00 277.00
400	AF24400	250.00	270.00	AF28400	266.00 286.00
450	AF24450	259.00	279.00	AF28450	276.00 296.00
500	AF24500	269.00	289.00	AF28500	285.00 305.00
550	AF24550	278.00	298.00	AF28550	295.00 315.00
600	AF24600	288.00	308.00	AF28600	304.00 324.00

\*Add letter H to Cat. No. for hinged cover box. Enclosing cases are of bakelite. A handle guard is provided, into which may be inserted a padlock for locking the breaker in either the off or on position.

†For screw cover box add letter F to Cat. No. for flush mounting or letter S for surface mounting and add \$2.30 to list price of circuit breaker only. This enclosing case is furnished only for the 2-pole 50-ampere frame sizes.

## No. AF-1 Trumbull Circuit Breakers



Illustration shows the enclosed AF-1 breaker in a neat, rounded corner, steel box.

Starting with the 100-ampere frame size, interchangeable trip units are available and all breakers off inverse time limit protection. In breakers 100-ampere frame size and above, dual overload is provided as a standard feature.

The 50-ampere frame size breakers do not have interchangeable trip units.

### 600 Volts A.C., 250 Volts D.C. 50-Ampere Frame

Amp.	Cat. No.	2 POLE		3 POLE	
		Circuit Breaker Only Each	*With Hinged Cover Box Each	Cat. No.	*With Hinged Cover Box Each
15	AF31015	\$16.00	\$23.00	AF35015	\$38.00 \$43.00
20	AF31020	16.00	23.00	AF35020	38.00 43.00
25	AF31025	16.00	23.00	AF35025	38.00 43.00
35	AF31035	17.00	25.00	AF35035	40.00 45.00
50	AF31050	17.00	25.00	AF35050	40.00 45.00

#### 100-Ampere Frame

50	AF32050	\$42.00	\$48.00	AF36050	\$69.00 \$75.00
70	AF32070	44.00	50.00	AF36070	70.00 76.00
90	AF32090	46.00	52.00	AF36090	72.00 78.00
100	AF32100	48.00	54.00	AF36100	74.00 80.00

#### 225-Ampere Frame

50	AF33050	\$101.00	\$109.00	AF37050	\$123.00 \$131.00
70	AF33070	101.00	109.00	AF37070	123.00 131.00
90	AF33090	101.00	109.00	AF37090	123.00 131.00
100	AF33100	101.00	109.00	AF37100	123.00 131.00
125	AF33125	104.00	112.00	AF37125	125.00 133.00
150	AF33150	106.00	114.00	AF37150	127.00 135.00
175	AF33175	108.00	116.00	AF37175	130.00 138.00
200	AF33200	111.00	119.00	AF37200	132.00 140.00
225	AF33225	113.00	121.00	AF37225	135.00 143.00

#### 600-Ampere Frame

225	AF34225	\$262.00	\$282.00	AF38225	\$286.00 \$306.00
250	AF34250	274.00	294.00	AF38250	298.00 318.00
325	AF34325	286.00	306.00	AF38325	309.00 329.00
400	AF34400	298.00	318.00	AF38400	321.00 341.00
450	AF34450	310.00	330.00	AF38450	333.00 353.00
500	AF34500	321.00	341.00	AF38500	345.00 365.00
550	AF34550	333.00	353.00	AF38550	357.00 377.00
600	AF34600	345.00	365.00	AF38600	369.00 389.00

\*Add letter H to Cat. No. for hinged cover box.

### Interchangeable Trip Units 100-Ampere Frame—All Voltages

Amp.	2 POLE		3-POLE	
	Cat. No.	Each	Cat. No.	Each
50	AF226050T	\$8.00	AF326050T	\$11.00
70	AF226070T	9.00	AF326070T	13.00
90	AF226090T	11.00	AF326090T	15.00
100	AF226100T	12.00	AF326100T	17.00

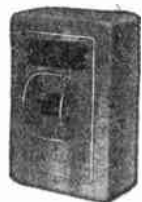
#### 225-Ampere Frame—All Voltages

50	AF237050T	\$24.00	AF337050T	\$30.00
70	AF237070T	25.00	AF337070T	31.00
90	AF237090T	26.00	AF337090T	32.00
100	AF237100T	27.00	AF337100T	33.00
125	AF237125T	29.00	AF337125T	35.00
150	AF237150T	30.00	AF337150T	36.00
175	AF237175T	31.00	AF337175T	37.00
200	AF237200T	32.00	AF337200T	38.00
225	AF237225T	33.00	AF337225T	39.00

#### 600-Ampere Frame—All Voltages

225	AF248225T	\$48.00	AF348225T	\$62.00
250	AF248250T	55.00	AF348250T	69.00
275	AF248275T	62.00	AF348275T	76.00
300	AF248300T	69.00	AF348300T	84.00
325	AF248325T	76.00	AF348325T	90.00
350	AF248350T	84.00	AF348350T	97.00
400	AF248400T	90.00	AF348400T	104.00
450	AF248450T	97.00	AF248450T	111.00
500	AF248500T	104.00	AF348500T	118.00
525	AF248525T	111.00	AF348525T	125.00
550	AF248550T	118.00	AF348550T	132.00
600	AF248600T	125.00	AF348600T	139.00

**Type R.B. Trumbull Tumbler Switches Without Overload Protection**



No. 2361

Particularly adapted for use on small motor-driven machines; with automatic apparatus such as oil burners, ice machines, either for control or as a positive disconnect. Also used on lighting circuits.

On the 2-pole, 3-way and 4-pole switches, the R.B. type roller contact provides greater rupturing capacity and longer life.

The 3-pole switch is mounted on moulded composition base which can easily be removed for wiring. Cover is held by two screws.

**2-Pole**  
30 Amp., 250 Volts; 5 Amp., 600 Volts;  
2 H.P., 250-600 Volts

Cat. No.	Each	Type Mounting	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
2228	\$2.40	Surface	10	50	50	88
3228	2.10	Flush	10	50	50	50
2228F	4.20	Float	10	50	100	100
2228S	1.65	Switch Unit	10	50	50	38

**3-Way**  
10 Amp., 125 Volts; 5 Amp., 250 Volts

Cat. No.	Each	Type Mounting	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
2328	\$2.40	Surface	10	50	50	88
3328	2.10	Flush	10	50	50	50
2328F	4.20	Float	10	50	100	100
2328S	1.65	Switch Unit	10	50	50	38

**3-Pole**  
30 Amp., 250 Volts; 5 Amp., 600 Volts;  
2 H.P., 250-600 Volts A.C.

Cat. No.	Each	Type Mounting	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
2361	\$6.00	Surface	1	10	10	30
3361	7.00	Flush	1	10	10	40
2361F	8.00	Float	1	10	10	35
2361S	4.25	Switch Unit	1	10	10	15

**4-Pole**  
30 Amp., 250 Volts; 5 Amp., 600 Volts

Cat. No.	Each	Type Mounting	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Lbs. Pkg.
2428	\$9.00	Surface	10	10	40	40

**Type T.T. Trumbull Tumbler Switches With Thermostatic Overload Protection**

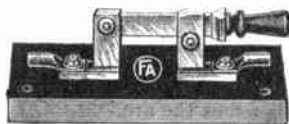
For Controlling Single Phase Motors  
Maximum Rating 1/2 H.P. 220 Volts A.C.  
and 1/4 H.P. 110 Volts A.C.

Cat. No.	Each	Amp.	Mounting	Car-ton	Wt., Lbs. Carton	Lbs.
2220 3/10	\$4.84	3/10	Surface	10	18	18
6220 3/10	3.93	3/10	Flush	10	10	10
2220 3/10S	3.63	3/10	Switch Unit	10	8	8
2220 1/2	4.84	1/2	Surface	10	18	18
6220 1/2	3.93	1/2	Flush	10	10	10
2220 1/2S	3.63	1/2	Switch Unit	10	8	8
2220 3/4	4.84	3/4	Surface	10	18	18
6220 3/4	3.93	3/4	Flush	10	10	10
2220 3/4S	3.63	3/4	Switch Unit	10	8	8
2229	4.84	1	Surface	10	18	18
6229	3.93	1	Flush	10	10	10
2229S	3.63	1	Switch Unit	10	8	8
2229 1/2	4.84	1 1/2	Surface	10	18	18
6229 1/2	3.93	1 1/2	Flush	10	10	10
2229 1/2S	3.63	1 1/2	Switch Unit	10	8	8
2222	4.84	2	Surface	10	18	18
6222	3.93	2	Flush	10	10	10
2222S	3.63	2	Switch Unit	10	8	8
2222 1/2	4.84	2 1/2	Surface	10	18	18
6222 1/2	3.93	2 1/2	Flush	10	10	10
2222 1/2S	3.63	2 1/2	Switch Unit	10	8	8
2223	4.84	3	Surface	10	18	18
6223	3.93	3	Flush	10	10	10
2223S	3.63	3	Switch Unit	10	8	8
2223 1/2	4.84	3 1/2	Surface	10	18	18
6223 1/2	3.63	3 1/2	Flush	10	10	10
2223 1/2S	3.63	3 1/2	Switch Unit	10	8	8
2224	4.84	4	Surface	10	18	18
6224	3.93	4	Flush	10	10	10
2224S	3.63	4	Switch Unit	10	8	8
2224 1/2	4.84	4 1/2	Surface	10	18	18
6224 1/2	3.93	4 1/2	Flush	10	10	10
2224 1/2S	3.63	4 1/2	Switch Unit	10	8	8
2225	4.84	5	Surface	10	18	18
6225	3.93	5	Flush	10	10	10
2225S	3.63	5	Switch Unit	10	8	8
2226	4.84	6	Surface	10	18	18
6226	3.93	6	Flush	10	10	10
2226S	3.63	6	Switch Unit	10	8	8

**FA Type A Knife Switches**

High Grade Milled-In Clip  
Without Fuse Connections

Front Connection—Satin Finish  
On Dead Black Finish Slate Bases



**SINGLE-POLE**

250 Volts D.C. or  
500 Volts A.C.

**Single-Throw**

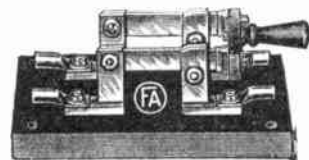
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3310	30	2 1/2	\$3.30
A 3510	30	3	3.90
A 6310	60	3	4.30
A 10310	100	4 1/2	5.50
A 20310	200	8	8.00
A 40310	400	15 1/2	15.20
A 60310	600	23	22.50
A 80310	800	37	46.20
A100310	1000	40 1/2	53.90
A120310	1200	45	81.80

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3310T	30	3	\$4.50
A 3510T	30	4	5.50
A 6310T	60	5	6.10
A 10310T	100	7	7.60
A 20310T	200	10	11.70
A 40310T	400	20	23.50
A 60310T	600	30	37.20
A 80310T	800	47 1/2	67.40
A100310T	1000	52	81.80
A120310T	1200	54 1/2	97.10

**DOUBLE POLE**

250 Volts D.C. or  
500 Volts A.C.

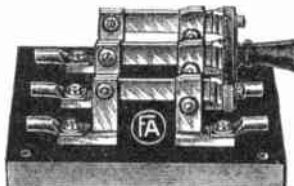


**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3320	30	3 3/4	\$6.00
A 3520	30	4	7.00
A 6320	60	5	7.80
A 10320	100	8 3/4	9.70
A 20320	200	16	14.90
A 40320	400	29	28.20
A 60320	600	37	43.10
A 80320	800	63	89.60
A100320	1000	69	105.80
A120320	1200	76 1/2	129.00

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3320T	30	5	\$8.30
A 3520T	30	7	10.50
A 6320T	60	8	11.60
A 10320T	100	11 1/2	14.60
A 20320T	200	17	22.30
A 40320T	400	33 1/2	44.90
A 60320T	600	50	71.50
A 80320T	800	79	131.00
A100320T	1000	87	157.20
A120320T	1200	91	193.80



**3-POLE**

250 Volts D.C. or  
500 Volts A.C.

**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3330	30	4 1/2	\$8.40
A 3530	30	7 1/2	10.10
A 6330	60	7 1/2	11.10
A 10330	100	12 1/2	14.20
A 20330	200	22 1/2	21.60
A 40330	400	43 1/2	42.20
A 60330	600	51	63.50
A 80330	800	84	133.20
A100330	1000	94	157.10
A120330	1200	109	192.30

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3330T	30	7 1/2	\$12.00
A 3530T	30	12	15.40
A 6330T	60	12	17.10
A 10330T	100	18	21.40
A 20330T	200	25	33.50
A 40330T	400	50	66.70
A 60330T	600	75	106.00
A 80330T	800	118	191.90
A100330T	1000	130	235.00
A120330T	1200	136	288.30

**4-POLE**

250 Volts D.C. or 500 Volts A.C.

**Single-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3340	30	6	\$11.00
A 3540	30	13	13.60
A 6340	60	13	15.10
A 10340	100	20 1/4	18.60
A 20340	200	33	29.70
A 40340	400	56	57.00
A 60340	600	78	85.50
A 80340	800	124	176.90
A100340	1000	137	208.20
A120340	1200	157	256.20

**Double-Throw**

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3340T	30	10	\$15.80
A 3540T	30	16	20.60
A 6340T	60	16	22.80
A 10340T	100	23	28.70
A 20340T	200	34	44.60
A 40340T	400	67	89.40
A 60340T	600	100	143.50
A 80340T	800	158	261.10
A100340T	1000	174	312.50
A120340T	1200	182	383.80

\*For 250 volts, d.c. only.

## FA Type A Knife Switches

High Grade Milled-In Clip  
With Cartridge Fuse Connections at Hinge End  
Front Connection—Satin Finish  
On Dead Black Finish Bases



**SINGLE-POLE**  
250 Volts D.C.  
or A.C.

### Single-Throw

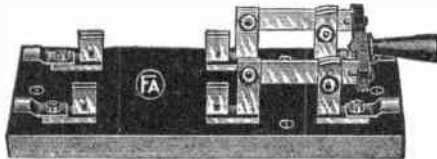
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3311	30	3	\$3.80
A 6311	60	6	5.20
A 10311	100	8½	7.60
A 20311	200	18	11.00
A 40311	400	25	19.90
A 60311	600	34½	30.60
A 80311	800	56	65.40
A100311	1000	62½	83.80
A120311	1200	70	98.60

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3311T	30	5¼	\$5.60
A 6311T	60	8	8.30
A 10311T	100	13½	12.80
A 20311T	200	22½	19.40
A 40311T	400	43	33.00
A 60311T	600	59	54.20
A 80311T	800	66	107.40
A100311T	1000	70	136.90
A120311T	1200	73	159.40

### DOUBLE-POLE

250 Volts D.C.  
or A.C.

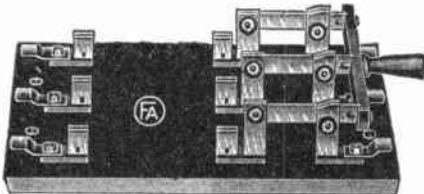


### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3322	30	5	\$7.00
A 6322	60	8¼	9.40
A 10322	100	14	14.10
A 20322	200	26	20.80
A 40322	400	44½	38.90
A 60322	600	67	58.60
A 80322	800	99	128.90
A100322	1000	110	164.00
A120322	1200	122	193.70

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3322T	30	8¾	\$11.10
A 6322T	60	13½	16.60
A 10322T	100	22½	24.90
A 20322T	200	34	36.60
A 40322T	400	72	63.00
A 60322T	600	99	106.40
A 80322T	800	110	209.40
A100322T	1000	117	266.30
A120322T	1200	122	311.80



### 3-POLE

250 Volts D.C.  
or A.C.

### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3333	30	7½	\$9.80
A 6333	60	12¾	13.90
A 10333	100	20	20.60
A 20333	200	35	30.40
A 40333	400	69½	57.10
A 60333	600	87	86.20
A 80333	800	145	192.70
A100333	1000	160	243.00
A120333	1200	177	287.80

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3333T	30	13	\$16.60
A 6333T	60	20	25.10
A 10333T	100	33	36.90
A 20333T	200	51	53.80
A 40333T	400	108	94.40
A 60333T	600	148	156.80
A 80333T	800	165	311.60
A100333T	1000	175	395.40
A120333T	1200	183	471.00

### 4-POLE

250 Volts D.C. or A.C.

### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3344	30	10	\$13.00
A 6344	60	18	18.60
A 10344	100	34	28.00
A 20344	200	60	41.70
A 40344	400	109	77.90
A 60344	600	144	117.40
A 80344	800	212	256.00
A100344	1000	235	323.70
A120344	1200	265	383.00

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3344T	30	17½	\$21.80
A 6344T	60	27	33.60
A 10344T	100	45	48.40
A 20344T	200	68	72.90
A 40344T	400	144	125.40
A 60344T	600	198	206.40
A 80344T	800	220	413.60
A100344T	1000	234	531.20
A120344T	1200	244	625.60

**NOTE.**—Double-throw switches will be furnished with fuse connections at both ends.

## FA Type F Knife Switches

Formed Clip  
Single-Pole—Unfusible  
Front Connection—Plain Finish

250 Volts D.C.  
or  
500 Volts A.C.



### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310	30	1½	\$1.80
F 3510	30	2½	2.40
F 6310	60	2½	2.60
F10310	100	4	3.40
F20310	200	7	5.40

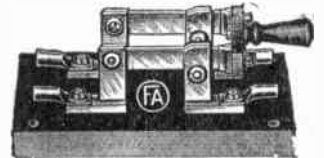
### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310T	30	3	\$2.20
F 3510T	30	4½	3.10
F 6310T	60	4½	3.40
F10310T	100	6¼	4.40
F20310T	200	12½	7.80

## FA Type F Knife Switches

Formed Clip  
Double-Pole—Unfusible  
Front Connection—Plain Finish

250 Volts D.C.  
or  
500 Volts A.C.



### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320	30	2½	\$2.50
F 3520	30	4¼	3.80
F 6320	60	4¼	4.20
F10320	100	8½	5.20
F20320	200	15½	9.50

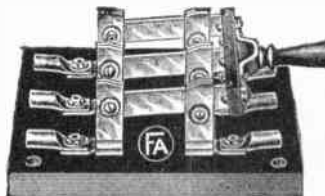
### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320T	30	4¾	\$3.50
F 3520T	30	7¾	5.40
F 6320T	60	7¾	6.00
F10320T	100	13	8.00
F20320T	200	25	14.20

## FA Type F Knife Switches

Formed Clip  
3-Pole—Unfusible  
Front Connection—Plain Finish

250 Volts D.C.  
or  
500 Volts A.C.



### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330	30	3¾	\$3.80
F 3530	30	6¼	5.40
F 6330	60	6¼	6.00
F10330	100	11½	7.70
F20330	200	22½	14.00

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330T	30	7	\$5.00
F 3530T	30	11½	8.00
F 6330T	60	11½	8.90
F10330T	100	17½	12.20
F20330T	200	32	21.90

## FA Type F Knife Switches

Formed Clip  
4-Pole—Unfusible

Front Connection—Plain Finish

250 Volts D.C.  
or  
500 Volts A.C.



### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340	30	6½	\$4.60
F 3540	30	12	7.00
F 6340	60	12	7.80
F10340	100	19½	10.50
F20340	200	32½	18.30

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340T	30	11½	\$6.60
F 3540T	30	20	10.60
F 6340T	60	20	11.80
F10340T	100	29	16.20
F20340T	200	45½	29.00

\*For 250 volts d.c. only.



**FA Type F Knife Switches**  
Formed Clip  
Single-Pole—Fusible at Bottom



Front Connection  
Plain Finish  
250 Volts D.C.  
or A.C.

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3311	30	2 3/4	\$2.20	F 3311T	30	5 1/4	\$3.00
F 6311	60	4 1/2	3.40	F 6311T	60	7 3/4	4.80
F10311	100	7 3/4	4.20	F10311T	100	12 1/2	6.90
F20311	200	11 3/4	7.00	F20311T	200	20	12.40

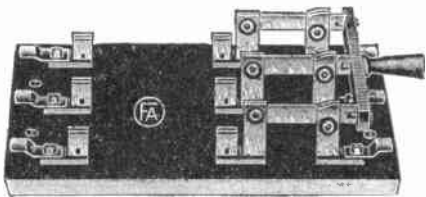
**FA Type F Knife Switches**  
Formed Clip  
Double-Pole—Fusible at Bottom

Front Connection  
Plain Finish  
250 Volts D.C.  
or A.C.



Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3322	30	4 1/2	\$3.40	F 3322T	30	8 3/4	\$5.50
F 6322	60	7 1/2	5.40	F 6322T	60	12 1/2	9.30
F10322	100	13 1/2	7.20	F10322T	100	26 1/2	13.00
F20322	200	25	12.50	F20322T	200	37 1/2	22.50

**FA Type F Knife Switches**  
Formed Clip  
3-Pole—Fusible at Bottom

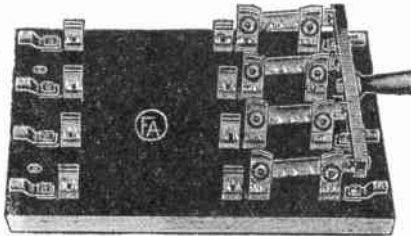


Front Connection  
Plain Finish  
250 Volts D.C.  
or A.C.

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3333	30	6 1/2	\$4.60	F 3333T	30	13	\$8.40
F 6333	60	11	8.10	F 6333T	60	18 1/2	14.30
F10333	100	19 1/2	10.60	F10333T	100	37 1/2	19.50
F20333	200	35	19.20	F20333T	200	59 1/2	33.40

**FA Type F Knife Switches**  
Formed Clip

4-Pole  
Fusible at Bottom  
Front Connector:  
Plain Finish  
250 Volts D.C.  
or A.C.

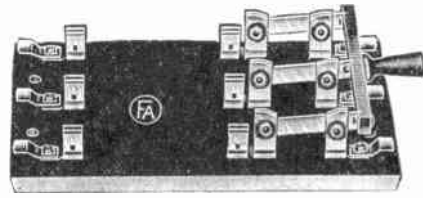


Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3344	30	9	\$5.90	F 3344T	30	18	\$11.00
F 6344	60	17	10.50	F 6344T	60	30	19.20
F10344	100	32 1/2	14.70	F10344T	100	67 1/2	25.40
F20344	200	57	25.70	F20344T	200	97	45.40

NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

**FA Type F Knife Switches**  
Formed Clip

With Cartridge Fuse Connections at Hinge End  
Front Connection—Plain Finish  
On Dead Black Finish Bases

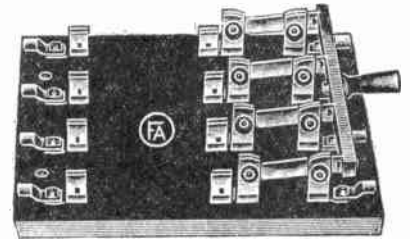


3-POLE  
500 Volts A.C.  
with 600-Volt  
Fuse Connection

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3533	30	11 1/2	\$8.30	F 3533T	30	20	\$13.80
F 6533	60	15	9.90	F 6533T	60	20 1/2	17.40
F10533	100	23	13.00	F10533T	100	33	20.80
F20533	200	35 1/2	21.40	F20533T	200	61	36.10

4-POLE

500 Volts A.C.  
with 600-Volt  
Fuse Connection

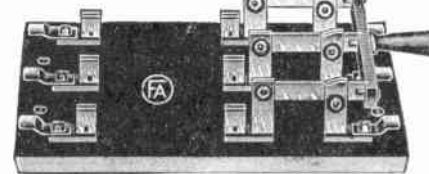


Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3544	30	20	\$11.60	F 3544T	30	31 1/2	\$20.90
F 6544	60	29 1/2	13.70	F 6544T	60	52	24.60
F10544	100	44	17.00	F10544T	100	91 1/2	27.60
F20544	200	70	28.70	F20544T	200	117	47.40

Single and double-pole made to order at special prices.  
Double-throw switches will be furnished with fuse connections at both ends.

**FA Type A Knife Switches**

High Grade Milled In Clip  
With Cartridge Fuse Connections at Hinge End  
Front Connection—Satin Finish  
On Dead Black Finish Bases



500 Volts A.C.  
with 600-Volt  
Fuse Connection

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3533	30	13 3/4	\$14.10	A 3533T	30	31	\$20.60
A 6533	60	15 1/2	14.30	A 6533T	60	41	25.90
A 10533	100	25	22.20	A 10533T	100	43	37.80
A 20533	200	36	31.90	A 20533T	200	71	56.20
A 40533	400	72 1/2	57.50	A 40533T	400	135	97.40
A 60533	600	94	89.00	A 60533T	600	184	159.20
A 80533	800	157	197.00	A 80533T	800	235	318.90
A100533	1000	174	247.40	A100533T	1000	255	409.60
A120533	1200	188	293.60	A120533T	1200	275	478.60

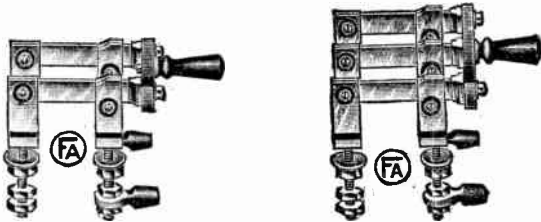
3-POLE

4-POLE			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3544	30	17 1/2	\$19.40
A 6544	60	27 1/2	19.70
A 10544	100	39	29.50
A 20544	200	61	43.00
A 40544	400	105	79.00
A 60544	600	132	119.30
A 80544	800	203	262.60
A100544	1000	225	335.00
A120544	1200	247	394.40

Single and double-pole made to order at special prices.  
Double-throw switches will be furnished with fuse connections at both ends.

## FA Type B Knife Switches High Grade Milled In Clip Without Fuse Connections

Back Connection—Satin Finish—Unmounted  
250 Volts D.C. or 500 Volts A.C.



### SINGLE-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3310	30	1	\$3.00	*B 3310T	30	1 1/4	\$4.30
B 3510	30	1 1/4	3.40	B 3510T	30	1 1/2	4.70
B 6310	60	1 1/4	3.80	B 6310T	60	1 1/2	5.30
B 10310	100	2 1/2	5.00	B 10310T	100	3	6.80
B 20310	200	4 1/2	7.80	B 20310T	200	5 1/2	11.00
B 40310	400	9 1/2	14.70	B 40310T	400	11 1/2	20.40
B 60310	600	15	22.40	B 60310T	600	19	31.20
B 80310	800	18	47.10	B 80310T	800	23	69.70
B100310	1000	20	58.70	B100310T	1000	26	88.40
B120310	1200	26 1/2	70.20	B120310T	1200	41	104.60
†B150310	1500	31	88.40	†B150310T	1500	61	133.90
†B200310	2000	47	111.50	†B200310T	2000	80 1/2	170.20

### DOUBLE-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3320	30	1 1/2	\$6.20	*B 3320T	30	1 3/4	\$7.80
B 3520	30	2	6.60	B 3520T	30	2 1/2	9.30
B 6320	60	2	7.40	B 6320T	60	2 1/2	10.30
B 10320	100	4	9.50	B 10320T	100	5	13.30
B 20320	200	7 1/2	15.40	B 20320T	200	9	21.40
B 40320	400	16	28.70	B 40320T	400	19	40.10
B 60320	600	25	43.70	B 60320T	600	32	61.30
B 80320	800	30	92.70	B 80320T	800	38	137.90
B100320	1000	33	116.70	B100320T	1000	43	174.60
B120320	1200	44	139.10	B120320T	1200	68	209.00
†B150320	1500	52	174.80	†B150320T	1500	102	265.80
†B200320	2000	78	221.00	†B200320T	2000	134	338.60

### 3-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3330	30	2 1/4	\$8.90	*B 3330T	30	2 1/2	\$12.20
B 3530	30	3	9.80	B 3530T	30	3 3/4	13.90
B 6330	60	3	10.90	B 6330T	60	3 3/4	15.40
B 10330	100	6	13.80	B 10330T	100	7 1/2	19.50
B 20330	200	11	22.60	B 20330T	200	13 1/2	31.70
B 40330	400	24	42.40	B 40330T	400	28 1/2	59.40
B 60330	600	37	64.00	B 60330T	600	48	90.50
B 80330	800	45	138.20	B 80330T	800	57	206.00
B100330	1000	50	173.50	B100330T	1000	65	260.20
B120330	1200	66	206.60	B120330T	1200	102	311.00
†B150330	1500	79	260.40	†B150330T	1500	153	397.00
†B200330	2000	116	329.50	†B200330T	2000	200	505.90

### 4-POLE

Single-Throw				Double-Throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*B 3340	30	3	\$11.80	*B 3340T	30	4 1/2	\$16.40
B 3540	30	4	13.20	B 3540T	30	5	18.60
B 6340	60	4	14.60	B 6340T	60	5	20.70
B 10340	100	8	18.50	B 10340T	100	10	26.00
B 20340	200	15	30.20	B 20340T	200	18	42.50
B 40340	400	32	57.10	B 40340T	400	38	79.80
B 60340	600	50	86.20	B 60340T	600	64	121.30
B 80340	800	60	184.00	B 80340T	800	76	255.90
B100340	1000	66	230.60	B100340T	1000	86	346.60
B120340	1200	88	275.00	B120340T	1200	136	415.00
†B150340	1500	104	345.90	†B150340T	1500	204	528.20
†B200340	2000	156	438.00	†B200340T	2000	268	673.30

\*For 250 volts d.c. only.

†Give size wire used so proper size lugs can be sent.

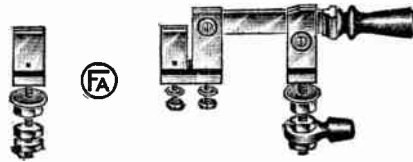
For switches mounted on slate or wood templates, add 50% up to 200 amperes, and 25% for everything over.

For polished finish, add 25%

Unless otherwise specified, all switches will be furnished for 1 1/2-inch panel mounting.

## FA Type B Knife Switches High Grade Milled In Clip With Cartridge Fuse Connections at Hinge End

Back Connection—Satin Finish—Unmounted



### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3311	30	1	\$3.40
B 6311	60	1 1/2	4.20
B 10311	100	3	6.70
B 20311	200	5 1/2	10.10
B 40311	400	11 1/2	18.90
B 60311	600	18	28.80
B 80311	800	27 1/2	62.70
B100311	1000	30 1/2	78.20
B120311	1200	44 1/2	91.70

### Double-Throw

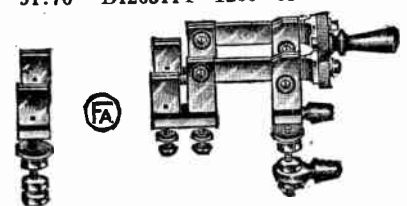
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3311T	30	1 1/4	\$4.90
B 6311T	60	1 3/4	6.20
B 10311T	100	3 3/4	10.30
B 20311T	200	8	15.70
B 40311T	400	15	28.70
B 60311T	600	23	44.90
B 80311T	800	33	106.30
B100311T	1000	36	133.40
B120311T	1200	65	159.90

### SINGLE POLE

250 Volts D.C. or A.C.

### DOUBLE POLE

250 Volts D.C. or A.C.

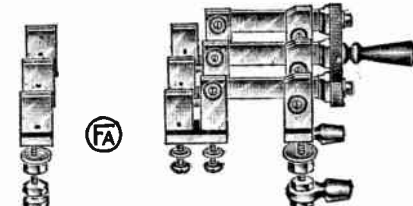


### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3322	30	1 3/4	\$6.70
B 6322	60	2 1/2	8.50
B 10322	100	5 1/4	13.20
B 20322	200	9	19.80
B 40322	400	19	37.00
B 60322	600	30	56.50
B 80322	800	46	123.10
B100322	1000	51	153.80
B120322	1200	74	181.20

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3322T	30	2	\$9.70
B 6322T	60	3	12.80
B 10322T	100	6 1/4	20.30
B 20322T	200	13	31.00
B 40322T	400	25	56.70
B 60322T	600	39	88.60
B 80322T	800	55	209.50
B100322T	1000	61	263.90
B120322T	1200	109	317.50



### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3333	30	2 3/4	\$9.80
B 6333	60	3 1/2	12.40
B 10333	100	8	19.40
B 20333	200	13 1/2	29.10
B 40333	400	28 1/2	54.80
B 60333	600	45	83.30
B 80333	800	69	183.80
B100333	1000	76	229.00
B120333	1200	111	270.20

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3333T	30	3	\$14.20
B 6333T	60	4 1/2	18.40
B 10333T	100	9 1/2	30.00
B 20333T	200	19 1/2	45.90
B 40333T	400	37	84.00
B 60333T	600	59	135.40
B 80333T	800	82	313.40
B100333T	1000	91	393.80
B120333T	1200	163	474.70

### 3-POLE

250 Volts D.C. or A.C.

250 Volts D.C. or A.C.

### Single-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3344	30	2 1/2	\$13.00
B 6344	60	5	16.80
B 10344	100	10 1/2	25.80
B 20344	200	18	38.70
B 40344	400	38	73.70
B 60344	600	60	111.80
B 80344	800	92	243.90
B100344	1000	102	304.60
B120344	1200	148	359.30

### Double-Throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
B 3344T	30	4	\$19.00
B 6344T	60	6	24.80
B 10344T	100	12 1/2	40.00
B 20344T	200	26	61.10
B 40344T	400	50	121.00
B 60344T	600	78	183.90
B 80344T	800	110	416.40
B100344T	1000	122	516.30
B120344T	1200	218	632.00

For switches on slate or wood template, add 25%. For polished finish, add 25%. Unless otherwise specified, all switches will be furnished for 1 1/2-inch panel mounting.

Double-throw switches will be furnished with fuse connections at both ends.

**Type A Trumbull Switches**  
Front Connections—Plain Finish  
250 Volts D.C. and 500 Volts A.C.

Unmounted switches without slate bases, deduct 10%. 125-volt spacings same price as 250-volt. The 2 and 3-pole switches, 800 amperes and above, and all 4-pole switches are regularly equipped with spade handles. Single-pole switches, 30-1200 amperes have straight handle. Multiple blades are regularly used on switches 800 amperes and above.



**Single Throw—No Fuse**

Single-Pole		Double-Pole		3-Pole		4-Pole		
Cap. Amps.	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each
*30	3721	\$ .80	3801	\$ 1.20	3881	\$ 1.80	3961	\$ 2.40
30	3721½	1.14	3801½	1.64	3881½	2.48	3961½	3.30
60	3722	1.20	3802	1.78	3882	2.68	3962	3.56
100	3724	2.25	3804	3.38	3884	5.08	3964	6.76
200	3726	3.48	3806	5.20	3886	7.80	3966	10.40
300	3728	5.34	3808	8.00	3888	12.00	3968	17.00
400	3729	8.14	3809	12.20	3889	18.30	3969	25.94
600	3731	11.54	3811	17.30	3891	25.96	3971	36.78
800	3732	20.00	3812	30.09	3892	45.00	3972	60.00

1200	3734	27.34	3814	41.00	3894	61.50	3974	82.00
1600	3735½	51.60	3815½	77.50	3895½	116.20	3975½	158.75
2000	3736	57.50	3816	86.50	3896	129.50	3976	173.00

\*For 250 volts only.

**Type A Trumbull Switches**

Front Connections—Plain Finish  
250 Volts D.C. and A.C.

Unmounted switches without slate bases deduct 10%. Prices do not include fuses.



**Single Throw—Fusible Bottom—N.E.C. Standard High Posts**

Single-Pole		Double-Pole		3-Pole		4-Pole		
Cap. Amps.	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each
30	4361	\$ 1.18	4381	\$ 1.76	4401	\$ 2.64	4421	\$ 3.52
60	4362	1.74	4382	2.60	4402	3.90	4422	5.20
100	4364	3.34	4384	5.00	4404	7.50	4424	10.00
200	4366	5.14	4386	7.70	4406	11.56	4426	15.40
400	4368	11.64	4388	17.46	4408	26.20	4428	37.10
600	4370	16.34	4390	24.50	4410	36.75	4430	52.06
800	4371	26.34	4391	39.50	4411	59.25	4431	79.00

1200	4373	35.68	4393	53.50	4413	80.25	4433	107.00
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**Type A Trumbull Switches**

Front Connections—Plain Finish  
251-600 Volts D.C. and 501-600 Volts A.C.

**Fusible Bottom—N.E.C. Standard—High Posts**



**Single Throw—With Quick Break Attachment**

Single-Pole		Double-Pole		3-Pole		4-Pole		
Cap. Amps.	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each
30	9600	\$ 2.18	9620	\$ 3.92	9640	\$ 6.30	9660	\$ 8.66
60	9601	2.34	9621	4.26	9641	6.82	9661	9.38
100	9603	3.90	9623	7.10	9643	11.36	9663	15.62
200	9605	6.16	9625	11.20	9645	17.92	9665	24.64
400	9607	12.94	9627	23.50	9647	37.60	9667	51.70
600	9609	17.34	9629	31.50	9649	50.40	9669	69.30

**Single Throw—Without Quick Break Attachment**

30	9610	\$ 1.84	9630	\$ 3.32	9650	\$ 5.34	9670	\$ 7.34
60	9611	2.04	9631	3.70	9651	5.92	9671	8.14
100	9613	3.48	9633	6.30	9653	10.08	9673	13.86

Unmounted switches without slate bases, deduct 10 per cent. All 3 and 4-pole switches, 600-volt, regularly equipped with spade handles. No fuses included in prices.

**Type C Trumbull Switches**  
Front Connections—Plain Finish  
250 Volts D.C. and 500 Volts A.C.



**Single Throw—No Fuse**

Cap. Amps.	Single-Pole		Double-Pole		3-Pole		4-Pole	
	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each
*30	3001	\$.42	3041	\$.68	3081	\$ 1.02	5901	\$ 1.36
30	3002	.66	3042	1.06	3082	1.60	5902	2.14
60	3003	.74	3043	1.22	3083	1.84	5903	2.44
100	3005	1.50	3045	2.50	3085	3.76	5905	5.00
200	3006	2.70	3046	4.50	3086	6.76	5906	9.00

**Double Throw—No Fuse**

*30	3021	\$.76	3061	\$ 1.16	3101	\$ 1.80	5921	\$ 2.56
30	3022	1.16	3062	1.70	3102	2.66	5922	3.84
60	3023	1.30	3063	2.00	3103	3.10	5923	4.40
100	3025	2.94	3065	4.50	3105	6.90	5925	9.80
200	3026	4.88	3066	7.50	3106	11.60	5926	15.50

\*For 250 volts d.c. only. †Double throw switches Type C are not made with quick break attachments.

All 4-pole switches regularly equipped with spade handles. Unmounted switches without slate bases, deduct 10 per cent. 125-volt spacings same price as 250-volt.

**Type C Trumbull Switches**

Front Connections—Plain Finish  
250 Volts D.C. and A.C.



**Single Throw—Fusible Bottom N.E.C. Standard—High Posts**

Single-Pole		Double-Pole		3-Pole		4-Pole		
Cap. Amps.	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each
30	1120	\$ .70	1130	\$ 1.06	1140	\$ 1.60	1150	\$ 2.12
60	1121	1.18	1131	1.80	1141	2.70	1151	3.60
100	1123	2.38	1133	3.66	1143	5.50	1153	7.30
200	1124	4.40	1134	6.76	1144	10.14	1154	13.50

For unmounted switches without slate bases, deduct 10 per cent.

The 125-volt switches are the same price as 250-volt.

All 4-pole switches are regularly equipped with spade handles.

No fuses are included in the above prices.

**Trumbull Kappa Switches**

Front Connections—Plain Finish  
250 Volts, 30 Amperes



For comparatively light work. Foot blocks and binding screws of brass. Hinge rivet spun over to prevent loosening.

**Single Throw—No Fuse**

Price, No. 20, Single-Pole.....	each	\$ .38
Price, No. 22, Double-Pole.....	each	.60
Price, No. 23, Three-Pole.....	each	.90

**Single Throw—Fusible N.E.C. Std. Bottom High Jaws**

Price, No. 29, Single-Pole.....	each	\$ .64
Price, No. 30, Double-Pole.....	each	.97
Price, No. 31, Three-Pole.....	each	1.45

Unmounted switches without slate bases, deduct 10 per cent. No fuses are included in above prices.



## Trumbull Telephone or Battery Switches

25 Amperes—Slate Base—Front Connections



No. 14

All the telephone or battery switches are fitted with the return bend, self-adjusting type of clip, which is unusually suitable for this type of switch. Projections on posts prevent turning on bases.

Cat. No.	Style	SIZE OF BASE, INCHES Length Width	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
14	D.P., S.T.	2 1/2 x 2	20	8	\$ .45
15	D.P., D.T.	3 5/8 x 2	10	6	.75
16	3P., S.T.	2 1/2 x 3 1/4	10	6	.66
17	3P., D.T.	3 5/8 x 3 1/4	10	8	1.10
18	4P., S.T.	2 1/2 x 4 1/2	10	9	1.00
19	4P., D.T.	3 5/8 x 4 1/2	5	6	1.70

## Trumbull Telephone or Battery Switches

25 Amperes—Fiber Base—Front Connections



No. 7



No. 11

Fitted with return bend self-adjusting clip. Projections on posts prevent turning on bases.

### With Composition Handle

Cat. No.	Style	BASE, INCHES Length Width	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
7	S.P., S.T.	2 1/2 x 1 1/8	20	40	6	\$ .22
8	S.P., D.T.	3 3/4 x 1 1/8	10	20	3 1/2	.34
9	D.P., S.T.	2 1/2 x 2	10	20	5	.42
10	D.P., D.T.	3 3/4 x 2	10	20	8	.65
40	3P., S.T.	2 1/2 x 3 1/4	10	20	10	.75
41	3P., D.T.	3 3/4 x 3 1/4	10	20	12	1.25
42	4P., S.T.	2 1/2 x 4 3/8	10	20	12	1.10
43	4P., D.T.	4 3/4 x 3 3/8	10	20	20	1.75

### With Black Enameled Handle

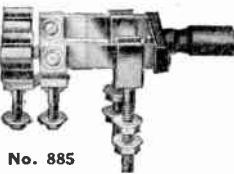
11	S.P., S.T.	2 1/2 x 1 1/8	20	40	5 1/2	\$ .20
13	S.P., D.T.	3 3/4 x 1 1/8	10	20	3 1/2	.32

## Trumbull Telephone or Battery Switches

25 Amperes—Back Connections—Unmounted



No. 783



No. 885

### No Fuse

Cat. No.	Polished Each	Brush Each	Style	Std. Pkg.	Wt. Lbs. Std. Pkg.
783	\$ .40	\$ .30	S. P. S. T.	50	10
784	.56	.42	S. P. D. T.	50	13
785	.80	.62	D. P. S. T.	50	18
786	1.16	.80	D. P. D. T.	25	10
787	1.20	.96	3 P. S. T.	25	10
788	1.74	1.25	3 P. D. T.	10	5
789	2.35	1.75	4 P. S. T.	10	5 1/2
790	3.10	2.30	4 P. D. T.	10	8
791	2.70	2.00	5 P. S. T.	10	8
792	3.65	2.75	5 P. D. T.	10	10
793	3.25	2.45	6 P. S. T.	5	4
794	4.45	3.35	6 P. D. T.	5	5

### Fusible

883	.50	.38	S. P. S. T.	50	13
885	1.00	.78	D. P. S. T.	25	15
887	1.50	1.20	3 P. S. T.	25	20
889	2.15	1.56	4 P. S. T.	10	12

## Trumbull Telephone or Battery Switches

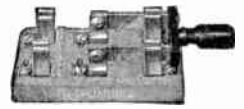
25 Amperes—Porcelain Base—Front Connections



No. 707



No. 709



No. 710

Fitted with return bend, self-adjusting clip. Projections on posts prevent turning on bases.

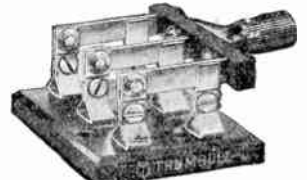
Cat. No.	Style	BASE, INCHES Length Width	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
707	S.P., S.T.	2 7/16 x 1 1/4	10	40	10	\$ .20
708	S.P., D.T.	3 5/8 x 1 5/16	5	40	6	.32
709	D.P., S.T.	2 7/16 x 2	10	20	7	.35
710	D.P., D.T.	3 5/8 x 2	5	10	5	.50
711	3P., S.T.	2 7/16 x 3 1/4	5	10	6	.56
712	3P., D.T.	3 5/8 x 3 1/4	5	10	10	.90

## Circle T Trumbull Radio Switches

Schedule B



No. 917, S. P. S. T.



No. 921, 3 P. S. T.

This line of small switches for radio work, is so designed as to stand up under the severest use to which they will be subjected, and at the same time to take up a minimum amount of space. Unusually strong and compact.

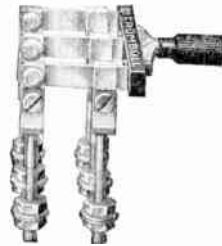
Connections can be made from either front or rear. Contact screws are placed in the switch posts thus making the wiring easy. Four projecting corner points on each post hold the connecting wires in position after they have been fastened under the binding screws.

All metal parts are nickel-plated. Mounted on polished fibre base.

Cat. No.	Style	Base Inches	Car- ton	Std. Pkg.	Approx. Wt., Lbs. Std. Pkg.	Price Each
917	SPST	2 x 1	20	40	6	\$ .30
918	SPDT	2 7/8 x 1	10	20	5	.40
919	DPST	2 x 1 5/8	10	20	5	.50
920	DPDT	2 7/8 x 1 5/8	10	20	6	.70
921	3PST	2 x 2 1/2	10	20	8	1.00
922	3PDT	2 7/8 x 2 1/2	10	20	10	1.50

## Circle T Trumbull Radio Switches

For Panel Mounting



No. 821 3 P., S.T.



No. 820 D.P., D.T.

Cat. No.	Each	Style	Std. Pkg.	Wt. Lbs. Std. Pkg.
817	\$ .40	S. P. S. T.	50	3
818	.55	S. P. D. T.	50	4
819	.80	D. P. S. T.	50	4
820	1.15	D. P. D. T.	25	2 1/2
821	1.20	3 P. S. T.	25	5
822	1.70	3 P. D. T.	10	3
823	2.35	4 P. S. T.	10	3
824	3.10	4 P. D. T.	10	4
825	2.70	5 P. S. T.	5	2
826	3.65	5 P. D. T.	5	2 1/2
827	3.25	6 P. S. T.	5	2 1/2
828	4.45	6 P. D. T.	5	3

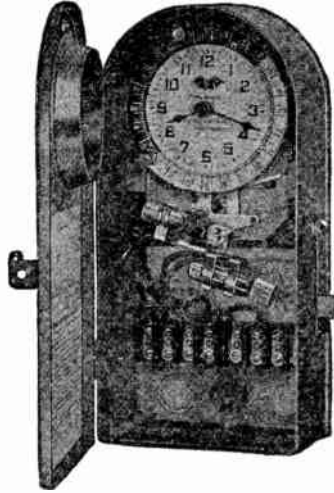
Studs 1/2-inch threaded 1-inch 8x32.

**Mercoid-Triplex Time Switches**

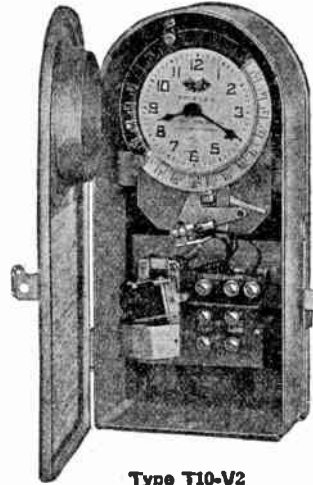
**Mercoid-Triplex Time Switches**



Type No. 402, Closed



Type No. 402, Open



Type T10-V2

With self-starting synchronous motor movement of the highest quality with heavy cut brass wheels and pinions turned and milled from tool steel, hardened and polished.

Has snap action switch mechanism with positive make and break of contact and locking in On and Off position. Operated by cams on bottom of On and Off clamps which are easily adjustable around the all-metallic finish, brass, rotating 24-hour or weekly program rim. Clamps can be set closely so the time switch will operate at times desired. Extra On and Off clamps may be used for additional operations. On and Off clamps may be set adjacent to each other, in which position switch will throw On and Off in 30 minutes with the 24-hour rim and in 3½ hours with the weekly program rim. Lever is provided for operating switch mechanism by hand, which also indicates On and Off position of switch.

Mercoid mercury tubes are used. There can be no open arcing, oxidation or corrosion. The contact is permanently clean and instantaneous in operation and will last indefinitely without deterioration.

Clock face has silver finished dial and time is quickly read from distinct hands and legible numerals. Seconds indicator rotates while current is on.

Clock is quickly set on time from center thumb screw without loosening On and Off clamps.

Steel housing is cadmium-plated to prevent rusting; has a gasketed, padlockable and sealable door opener. Mechanism is easily demountable by removing two screws.

Molded terminal block with wiring screws in bottom row for quick connection of line and load wires.

Dimensions of housing: height, 12 inches; width, 6¾ inches; depth, 3¾ inches.

Synchronous motor regularly shipped for connection to 110-volt 60-cycle current. If so specified on order can be furnished for connection to 220 volts 60 cycles or for 110 or 220 volts 50 cycles.

Packed 10 in a standard package.

Approximate shipping weight, 7 pounds.

No.	Poles	Throw	CAP. AMPS. 110 or 220 VOLTS, A.C.		24-HOUR DIAL		WEEKLY PROGRAM DIAL	
			*Per Circuit	Total	Type No.	Each	Type No.	Each
1	Single	20	20	201	\$32.00	7201	\$40.00	
2	Single	20	†40	402	39.00	7402	47.00	
1	Double	20	20	202	39.00	7202	47.00	

Additional On and Off Clamps . . . . . per set \$ 5.50

\*May be used to control 1-h.p. a.c. repulsion-induction motor or ¼-h.p. a.c. split phase motor.

†Type No. 402 may be connected to control two separate 20-ampere single-pole circuits or a 20-ampere double-pole circuit.

**Combination Type**

Illustration shows Mercoid Type V Transformer Relay installed in Triplex Time Switch housing. This relay meets the severe service conditions encountered with frequently operating automatic equipment such as oil burners, stokers, air conditioners, etc. Also for many other operations requiring thoroughly dependable remote control.

When used in combination with Triplex Time Switch, the switch may be set to connect day or night thermostat to relay or to control (by time) the relay operation when used for other purposes.

Prices on application.

**Cast Iron Weatherproof Housing**

This type is furnished for outdoor installations.

A heavy wing nut compresses soft rubber door gasket against case.

Height, 13½ inches; width, 8¼ inches; depth, 4½ inches.

Approximate shipping weight, 20 pounds.

Type W, without Glass Opening in Cover

.....extra \$8.00

Type WO, with Glass Opening.....extra 10.00

Padlock with 2 Keys

.....extra 2.00



**Special Mounting**

Illustration shows Triplex Time Switch mounted on bakelite plate without steel housing. Overall dimensions: 7 inches high, 5½ inches wide, 2⅝ inches deep. This type can be mounted in traffic light housings, on panel boards, or with equipment where housing is not required.

Snap action switch mechanism can be furnished with Mercoid tube or tubes to provide: Single pole, double pole, single pole double throw, and with smaller

capacity tubes for single, double, triple or 4 pole; single or double throw.

Prices on application.

**Triplex Weekly Program Dial**



This dial makes one revolution in 7 days. Each day is provided with On and Off clamps, easily adjustable to daily schedule. Clamps may be removed from the rim for any day or days; switch will then remain in last position thrown until the next clamp operates. For example, in heating a school, night thermostat can remain in control from Friday at 4 P.M. until Monday morning at 7 when day thermostat is connected.



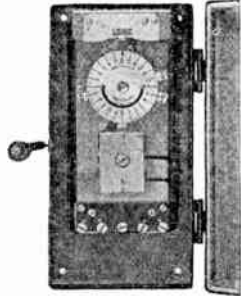
## Sauter Time Switches

The general purpose of a time switch is to automatically close an electrical circuit for a desired number of hours, usually once or twice a day.

Sauter Time Switches are accurately designed with rugged and precision workmanship throughout. They have been endorsed by many of the foremost electric light and power companies, outdoor advertising companies and are used by the U. S. Government for airways beacon control.

### Synchronous Motor Time Switches

Single or Double Circuit—A.C.—110 or 220 Volts



The Type ZY switch consists of a 2 to 3-watt self-starting slow speed 200-r.p.m. subsynchronous motor, a precision-made gear train with highly polished pinions, a quick-make quick-break laminated copper contact with silver arcing tips, a plain 24-hour dial adjustable to any desired schedule and a pressed steel dustproof case with ample room for wiring and convenient knockouts for conduit connections.

Symbol	Stock No.	*Each	Amps. per Pole	No. of Poles	Throw	DIMENSIONS INCHES		
						Ht.	Wdth.	Dpth.
ZY-15-I	11	\$30.00	15	2	Sgl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>
ZY-15-II	12	33.00	15	2	Sgl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>
ZYU-10-I	**21	30.00	10	1	Dbl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>
ZY-15-III-K	†31	45.00	15	3	Dbl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	5
ZY-15-II-K	†32	45.00	15	2	Dbl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	5

### Low Capacity Self-Winding Escapement Switches

Single Throw—A.C. and D.C.—110-220 Volts



These switches consist of a large precision-made clock movement having a 4-day running reserve mainspring and a 7-jewelled escapement (ZEE has 13 jewels) compensated for temperature fluctuations. The clockspring is automatically wound each day by a 20-watt 110-220-volt motor which operates satisfactorily on frequencies of from 25 to 80 cycles and at voltages 20 per cent above or below rated voltage. Except for the 10 to 30 seconds required to wind the clockspring, this motor is entirely disconnected from the line.

Provided with a quick-make quick-break laminated copper contact with silver arcing tips, a plain 24-hour dial adjustable to any desired schedule, and a pressed steel dustproof case with ample room for wiring and convenient knockouts for conduit connections.

Symbol	Stock No.	*Each	Type of Current	Amps. per Pole	No. of Poles	DIMENSIONS INCHES		
						Ht.	Wdth.	Dpth.
ZWE-2-I	41	\$57.00	A.C.	2	Sgl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>
ZWE-15-I	51	58.00	A.C.	15	Sgl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>
ZWE-15-II	61	60.00	A.C.	15	Dbl.	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>
ZEE-2-I	201	75.00	A.C.-D.C.	2	Sgl.	12 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>
ZEE-15-I	211	80.00	A.C.-D.C.	15	Sgl.	12 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>
ZEE-15-II	221	85.00	A.C.-D.C.	15	Dbl.	12 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>

\*Prices include switch with plain 24-hour dial and dust-proof case. Add \$10.00 for weatherproof case and \$17.00 for astronomic dial.

\*\*A single-pole double-throw switch with no open position. Used for any 3-wire control system.

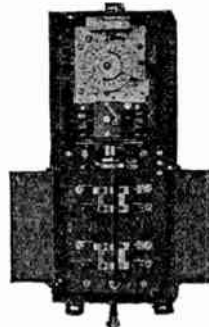
†A 2-circuit switch; operates in the following sequence: Circuit 1, On; circuits 1 and 2, On—all Off. Circuit 1 is controlled by 15-ampere 2-pole switch; circuit 2 by a 15-ampere single-pole switch. Total capacity, 4950 watts.

‡A 2-circuit switch; operates in the following sequence: Circuits 1 and 2, On; circuit 1, Off; circuits 1 and 2, Off. Both circuits controlled by a 15-ampere single-pole switch. Total capacity, 3300 watts.

## Sauter Time Switches

### Heavy Duty Motor-Operated Self-Winding or Synchronous Time Switches

Single and Double Circuit—A.C. and D.C. 110-220 Volts



These switches consist of a self-winding escapement or synchronous clock. Heavy duty switches differ from low capacity switches in that the main switch contacts are operated by a motor rather than by the time dial. The use of this motor permits the design of a high pressure copper-to-copper butt contact with a quick double-make and double-break action. These contacts are good for a constant overload of 25 per cent.

All motor-operated switches are provided with a plain 24-hour dial adjustable to any desired schedule and a pressed steel dustproof case with conduit connection boxes for ease in wiring. An astronomic dial to automatically operate the switch in step with sunset or sunrise, and a cast iron weatherproof or immersion-proof case can be supplied if desired.

Symbol	Stock No.	Each	Amps. per Pole	No. of Poles	Throw	DIMENSIONS INCHES		
						Ht.	Wdth.	Dpth.
ZM-25-II	321	†\$105.00	25	2	Sgl.	14 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	6
ZM-40-II	341	†110.00	40	2	Sgl.	14 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	6
ZM-40-III	351	†116.00	40	3	Sgl.	17	10 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>
ZM-60-II	361	†132.00	60	2	Sgl.	23 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	6
ZM-60-III	371	†150.00	60	3	Sgl.	23 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	6
ZMA-15-II	*511	†100.00	15	2	Dbl.	17	10 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>
ZMA-40-II	*513	†135.00	40	2	Dbl.	17	10 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>
ZMU-10-I	**551	†100.00	10	1	Dbl.	17	10 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>
ZMU-30-I	**555	†135.00	30	1	Dbl.	17	10 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>
ZMZ-15-II	**571	†100.00	15	2	Dbl.	17	10 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>
ZMZ-40-II	**573	†135.00	40	2	Dbl.	17	10 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>

When synchronous motor clock is desired, deduct \$20.00 from price

Add for astronomic dial, \$17.00.

Add for week-end and holiday cut-out, \$25.00.

\*Two-circuit switches; operate in following sequence: Circuit 1 and 2, On simultaneously; circuit 1, Off; circuit 2, Off.

\*\*Momentary contact switches; operate as follows: Circuit 1, On momentarily (6 to 8 seconds); circuit 2, On momentarily (6 to 8 seconds).

\*\*\*Two-circuit switches; operate in following sequence: Circuit 1, On; Circuit 2, On; circuits 1 and 2, Off simultaneously.

Add for weatherproof or immersion-proof housing; †\$20.00; ‡\$25.00.

### Other Sauter Time Switches Available



Symbol ZMO



Symbol HZ

Also available: 110-220-volt switches up to 300 amperes; 4600 and 8000-volt switches up to 50 amperes, and many 110-220-volt switches having special sequences. Prices upon application.

### Ordering Information

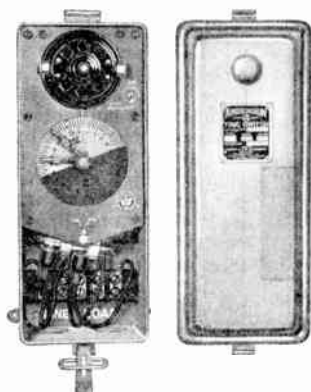
When ordering specify type, ampere rating, number of poles, voltage, whether A.C. or D.C., frequency, type of dial, type of case, and on 2-circuit switches give switch sequence.



**Anderson Automatic Time Switches**

**Universal Motor Wound with Mercury Tube Contacts**

110 and 220 Volts D.C. or A.C. 60 to 25 Cycles



No. 11901

This type, having a reserve power in the spring of from 12 to 52 hours, is particularly suited for use in circuits that are subject to line interruptions.

For Season Changing Device (Astronomical Dial) add \$20.00 list.

For Wooden Housing complete with porcelain tubes, add \$10.00 list.

Approximate dimensions 13 inches high, 4½ inches wide and 4¼ inches deep.

Approximate weight net 9 pounds.

Approximate weight boxed 12 pounds.

**Type MSD Single Pole Single Throw**

110 Volts A.C.		220 Volts A.C.		110 Volts D.C.		220 Volts D.C.		
Amps.	No.	Each	No.	Each	No.	Each	No.	
10	11912	\$52.00	11920	\$55.00	11912	\$52.00	11924	\$55.00
20	11913	54.00	11921	57.00	11913	54.00	11925	57.00
30	11914	57.00	11922	60.00	11923	61.00	11926	64.00

**Type MSF Double Pole Single Throw**

10	11900	\$54.00	11930	\$57.00	11900	\$54.00	11934	\$57.00
20	11901	57.00	11931	60.00	11901	57.00	11935	60.00
30	11902	60.00	11932	63.00	11933	67.00	11936	70.00

**Type MSDH Single Pole Double Throw**

10	11906	\$54.00	11940	\$57.00	11906	\$54.00	11944	\$57.00
20	11907	56.00	11941	59.00	11907	56.00	11945	59.00
30	11908	59.00	11942	62.00	11943	63.00	11946	66.00

**Type MSFH Double Pole Double Throw**

10	11909	\$56.00	11950	\$59.00	11909	\$56.00	11954	\$59.00
20	11910	59.00	11951	62.00	11910	59.00	11955	62.00
30	11911	62.00	11952	65.00	11953	69.00	11956	72.00

**Self-Starting Synchronous Motor Driven with Mercury Tube Contacts**

110 and 220 Volts A.C. 60 Cycles, For Use On Regulated Circuits

**Type TMD Single Pole Single Throw**

110 Volts A.C.		220 Volts A.C.		
Amps.	Cat. No.	List Price	Cat. No.	
10	11812	\$40.00	11820	\$42.00
20	11813	42.00	11821	44.00
30	11814	45.00	11822	47.00

**Type TMF Double Pole Single Throw**

10	11800	\$42.00	11830	\$44.00
20	11801	45.00	11831	47.00
30	11802	48.00	11832	50.00

**Type TMDH Single Pole Double Throw**

10	11806	\$42.00	11840	\$44.00
20	11807	44.00	11841	46.00
30	11808	47.00	11842	49.00

**Type TMFH Double Pole Double Throw**

10	11809	\$44.00	11850	\$46.00
20	11810	47.00	11851	49.00
30	11811	50.00	11852	52.00

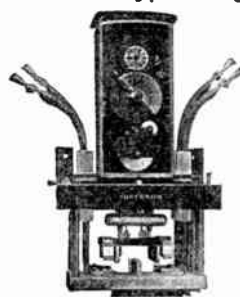


No. 11801

**Anderson Automatic Time Switches**

**Double or Triple-pole, High Tension, Oil Break**

**Type L Eight Day, Hand Wound**



This type of switch is constructed for handling alternating current up to and including 6600 volts, and is furnished either two or three-pole. This apparatus is used in connection with small current transforming apparatus where the lamps can safely be connected to the secondary coil of transformer in its position of maximum voltage. Prices listed below are for complete apparatus, including oil chamber and sufficient oil to fill same to working level.

**For Potentials Not Exceeding 3300 Volts**

No.	Cap. Amps.	No. of Poles	High with Terminals	DIMENSIONS, INCHES			Ship. Wt., Lbs.	Each
				Width	Depth			
11039	25	2	20½	11	7	83	*\$120.00	
11040	50	2	20½	11	7	83	*130.00	
11043	25	3	21	14	7	102	†144.00	
11044	50	3	21	14	7	102	†160.00	

**For Potentials Not Exceeding 6600 Volts**

11080	25	2	20½	11½	8	94	†\$150.00
11081	50	2	20½	11½	8	94	†160.00
11084	25	3	22	19	8	129	†180.00
11085	50	3	22	19	8	129	†196.00

For the Sunday or holiday cut-out attachment installed in any of the above, add \$14.00 to price.

For the double daily operation attachment installed in any of the above, add \$14.00 to price.

For the time extension device installed in any of the above, add \$14.00 to price.

Type L Switches may have either the time extension or the double daily operation attachment, but cannot have both.

A 110-volt heating coil in switch tank only, is standard equipment in all the above. 220-volt coil supplied if so stated on order.

**Type SL Electrically Wound, Fully Automatic**

The Type SL is for controlling circuits up to 6600 volts. The switch is so designed that the current has a quick-make and break and is opened and closed in a tank of oil.

Prices listed below are for complete apparatus, including oil chamber and sufficient oil to fill same to working level.

Specify on order full particulars of winding circuit.

**For Potentials Not Exceeding 3300 Volts**

No.	Cap. Amp.	No. of Poles	High with Terminals	DIMENSIONS, INCHES			Ship. Wt., Lbs.	Each
				Wide	Deep			
11098	25	2	22	11	8	92	*\$200.00	
11099	50	2	22	11	8	92	*210.00	
11100	25	3	22½	14	8½	110	†224.00	
11101	50	3	22½	14	8½	110	†240.00	

**For Potentials Not Exceeding 6600 Volts**

11102	25	2	22	11½	9	102	†\$230.00
11103	50	2	22	11½	9	102	†240.00
11104	25	3	23½	19	9	137	†260.00
11105	50	3	23½	19	9	137	†276.00

\*One gallon of oil, included in list price, shipped with each switch.

†Two gallons of oil included in list price, shipped with each switch.

‡Three gallons of oil included in list price, shipped with each switch.

The Sunday or holiday cut-out attachment, the double daily operation attachment and the time extension device cannot be put in any Type SL Electrically Wound Time switch.

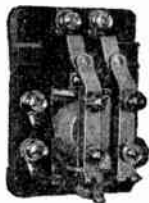
A 110-volt heating coil in switch tank only, is standard equipment in all the above. 220-volt coil supplied if so stated on order.

For season changing device (Astronomical Dial) add \$20.00 to price.

Wooden housings complete for all L and SL Switches: For the 25 and 50-ampere, 2 and 3-pole 3300 volts, and the 2-pole 6600 volts add \$20.00 to list price; for the 3-pole 25 and 50-ampere 6600 volts add \$28.00 to list price.

## Dunco Relays

### Midget Relays



Type ADBX1

Used for the control of heaters, signals, small motors, etc.

Wiping contacts are of fine silver.

The shading coil of Dunco design insures quiet a.c. operation.

Base size, 2 3/4 x 1 7/8 inches.

Coils: a.c., 60 cycles, 6 to 150 volts; d.c., 2 to 60 volts.

Contacts: 110 volts a.c., 6 amperes; 220 volts a.c., 3 amperes; 115 volts d.c., 1

ampere. Non-inductive load.

Type ABTX1, S.P., D.B., Front Contact..... each **\$3.85**

Type ADBX1, D.P., S.B., Front Contact..... each **4.95**

Type BSBX1, S.P., S.B., Back Contact..... each **3.85**

Type BDBX1, D.P., S.B., Back Contact..... each **5.50**

Type CSBX1, S.P., S.B., D.T..... each **4.68**

Type CDBX1, D.P., S.B., D.T..... each **6.60**

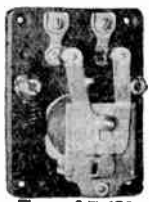
### Power Relays

Used for the control of heaters, signals, small motors, etc.

Wiping contacts are of fine silver; adjustable tension; quiet a.c. operation.

The use of finest materials together with careful, individual attention during manufacture and inspection make these carefully designed relays dependable.

Types ABYS8 and ADBT8 are also approved for 1 h.p.



Type ABYS8

Type	Each	Contact Arrangement	Base Size In.	CONTACT RATING AMPERES V. V. V. A.C. A.C. D.C.
ABYS8	\$6.60	S.P., D.B., Front Contact.	4 1/4 x 3	30 20 6
ADBT8	8.80	D.P., S.B., Front Contact.	4 1/4 x 3	30 25 4
ATBD8	11.00	3-P., S.B., Front Contact.	4 1/4 x 3	30 25 4
AFBG8	13.20	4-P., S.B., Front Contact.	5 x 5	30 25 4
BSBS8	6.60	S.P., S.B., Back Contact...	4 1/4 x 3	10 8 2
BBUK8	8.80	S.P., D.B., Back Contact...	5 x 3	30 20 6
BDBK8	11.00	D.P., S.B., Back Contact...	5 x 3	30 25 4
CSBT8	8.80	S.P., S.B., D.T.....	4 1/4 x 3	8 6 2
CDBP8	13.20	D.P., S.B., D.T.....	6 1/4 x 3	30 25 4
DDBP8	15.40	Same as CDBP8 except all Separate Circuits.....	6 1/4 x 3	30 25 4

Type H3 Hinged Cover, Aluminum Finish K.O. Box ..... each **\$1.65**

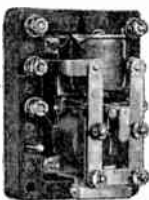
Add \$3.30 to price for 230-volt d. c. coils.

### Mechanical Latch-In Electrical Release Relays

Used for push button control or similar applications.

One coil closes contacts, another opens contacts. Latching member is metal, locking against molded bakelite keeper. This latch construction guards against sticking or excessive wear. Moving contacts insulated from armature.

Base size, 4 1/2 x 3 3/4 inches.



Type	A.C. Coils Each	D.C. Coils Each	Contact Breaking Arrangement	MAIN CONTACT RATING, AMPERES			
				110 V. A.C.	220 V. A.C.	115 V. D.C.	230 V. D.C.
CS600B	.....	<b>\$7.70</b>	S.P., S.T., D.B.	30	20	6	3
CS601B	.....	<b>8.80</b>	D.P., S.T., S.B.	30	25	4	2
CS609B	.....	<b>8.80</b>	S.P., D.T., S.B.	8	6	2	2
CS600C	\$8.80	.....	S.P., S.T., D.B.	30	20	6	3
CS601C	9.90	.....	D.P., S.T., S.B.	30	25	4	2
CS609C	9.90	.....	S.P., D.T., S.B.	8	6	2	2

Type	CONTACTS		A.C. COIL VOLTAGES		Cycles
	Front	Back	Min.	Max.	
CS600B	1	.	.	6	110
CS601B	2	.	.	6	110
CS609B	1	1	.	6	110
CS600C	1	.	6	220	25/60
CS601C	2	.	6	220	25/60
CS609C	1	1	6	220	25/60

Add \$4.40 for 230-volt d.c. coils.

### Ordering Information Required

Voltage and frequency of coil line.

Nature of load relay contacts must handle.

If special operating characteristics are desired, explain fully.

Wiring diagrams of special circuits are often helpful.

## Dunco Relays

### 3-Wire Relays

Used for the control of heaters, refrigerator units, pressure, etc. Protective resistor is a part of the relay. Instrument contacts make but never break current.

For use with 3-wire H-L-C instrument or push button.

#### Used Where Control Circuit and Load are Fed by Same Line

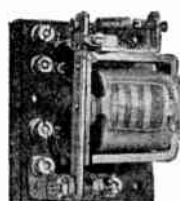
Type	Each	RATING, AMPERES		Base Size Inches
		110 Volts A.C.	110 Volts D.C.	
ABYT8PO	\$8.80	30	6	4 1/4 x 3
ABTX1PO	5.50	6	1	2 3/4 x 1 7/8

#### Used Where Control Circuit and Load are Fed by Different Lines

ADBT8O	\$9.90	15	2	4 1/4 x 3
ADBX1O	6.05	6	1	2 3/4 x 1 7/8

### Type CXB51 Sensitive Relays

Wide application is possible in electronic tube circuits for radio, light sensitive cells and other uses where input to primary circuit of relay is small. Both fixed contacts and tension spring of relay are adjustable. Contacts open and close with a definite snap action.



Contacts: S.P., D.T., S.B. rated at 110 volts a.c., 2 amperes; d.c., 1/4 ampere. Base size, 2 3/8 x 2 1/4 inches. Can be supplied with coils consuming as little as 1/100 watts d.c., or 2/10 watts a.c.

Type CXB51, D.C. Coil..... each **\$5.50**  
 Type CXB51, A.C. Coil... each **7.70**  
 Hinged Cover K.O. Box... each **1.65**

### Mercury Tube Relays

With enclosed contact break. Tilts tube with swinging action; assures smooth positive closure with minimum jar and shock. Mercury to mercury make and break.

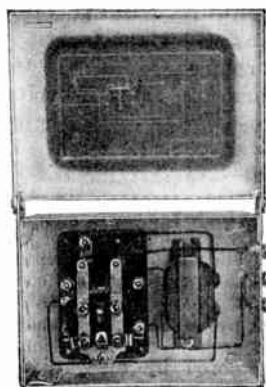
Base size, 5x4 inches.

Type CXH1027, S.P., Front Contact..... each **\$11.00**

Type CXA1028, S.P., Back Contact..... each **11.00**

Also with 2 or more tubes; prices upon application.

### Relay Sets for Low-Voltage Thermostat Control



Type RS73

Complete with relay and transformer mounted in sheet metal housing with external binding posts for thermostat connections.

#### Used with 2-Wire Snap Action Thermostat

Type	Each	110 VOLT A.C. RATING H.P. Amps.
RSA70	\$8.25	1/4 6
RS71	11.00	1 30

#### Used with 3-Wire H-L-C Thermostat

RSA72B	\$9.35	1/4 6
RS73	13.20	1 15

### Telephone Auxiliary Signalling Relays

**Type RS2.**—Relay and condenser in H3 sheet metal, hinged cover housing. Signal remains on as long as circuit is closed.

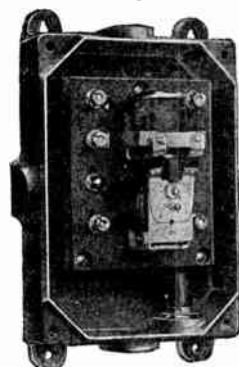
Type RS2..... each **\$11.00**

**Type RSA2.**—Same as Type RS2 except in W6 cast aluminum housing.

Type RSA2..... each **\$17.60**

**Type RS3A.**—Relay, condenser and push button in W6 cast aluminum weatherproof housing. After telephone circuit once energizes relay the signal remains on until relay is released.

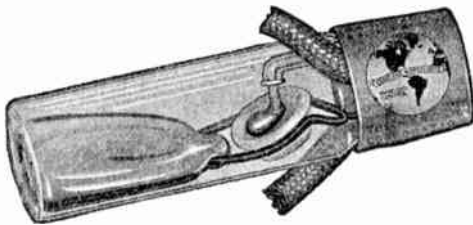
Type RS3A..... each **\$23.20**



Type RS3A



**Mercoid Automatic Controls**



Mercoid Controls have a wide application in both the domestic and industrial fields. They are generally employed for the control of motor driven automatic heating or refrigeration equipment, electric space or tank heaters, and for numerous industrial applications.

Equipped throughout with Mercoid sealed mercury contact switches.

The following are brief descriptions of several Mercoid Controls which are standard.

**Sensatherm**

A sensitive air type thermostat for low or high voltage requirements. Used for controlling automatic heating, refrigeration, or air conditioning equipment.

Furnished standard for low voltage to operate with the Mercoid Transformer-Relay. It can directly handle 50 watts or less on 110 or 220 volts without a relay. The standard range is 55° to 85° F. Other ranges are available. Total differential, 1° F. (plus or minus 1/2°).

Sizes, 3 1/16 inches high, 1 1/16 inches wide, and 2 1/4 inches deep.

Gold finish with thermometer.  
 Type H, for Heating.....each \$10.00  
 Type R, for Cooling.....each 10.50



**Type V Transformer-Relay**

A reliable low voltage mercury contact relay, which also acts as a transformer inducing low voltage (24 volts) on the pilot circuit. Its construction does away with all hum and chatter.

Equipped with carefully taped and impregnated heavy duty coils.

Has a steel cabinet.  
 Rating, 10 amperes, 110 or 220 volts.

Type V, 60-Cycle.....each \$15.00  
 Type V, 50-Cycle.....extra 1.00  
 Type V, 25-Cycle.....extra 2.00  
 Type V, D.C.....extra 2.50



**No. 855 Thermostat**

Designed for direct control of motor operated automatic heating or refrigeration equipment, unit heaters or electric heaters, and various other industrial applications.

It is actuated by means of a sensitive bellows. The mercury enclosed contact switch is not affected by dust, dirt, or corrosive gases.

Single-pole, single throw. 10 Amps. 4 Amps.

No. 855, for Heating, 56°-80°, 38°-60°...each \$22.50 \$21.00  
 No. 855, for Unit Heaters, 45°-72°.....each 22.50 21.00  
 No. 855, for Refrigeration.....each 25.00 23.00

For thermometer on cover, add \$1.50 to above lists.



**Dual Sensatherm**

Type HH Dual Sensatherm is generally used to lower the temperature at night and restore it to normal in the morning.

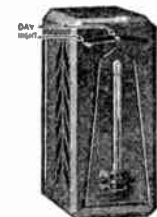
A clock is available for this instrument with a 7-day dial for setting daily programs a week in advance.

Also used with air conditioning equipment.

Type HH, Dual Heating.....each \$17.50

Type HR can be furnished as a summer-winter thermostat. The individual adjustments permit close regulation at any desired temperature on both the heating and cooling units.

Type HR, Dual Heating and Cooling.....each \$18.00

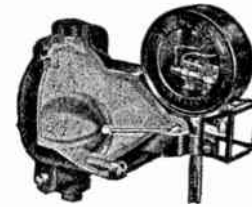


**Mercoid Automatic Controls**

**No. 71 Pressure and Low Water Control**

A combination control which prevents the hazard of firing into dry boilers and also guards against building up excessive steam pressure. Pressure setting can be raised or lowered by turning the adjustment screw.

Available in numerous ranges for pressures up to 300 pounds. Standard range is 1 to 10 pounds, minimum differential, 3 pounds.



Furnished single-pole, 150 amperes, fully automatic to open circuit on a rising pressure or dropping float.

No. 71, Single-Pole, 10 Amperes.....each \$36.00  
 No. 71, Single-Pole, 4 Amperes.....each 34.50

Also available in lower or higher pressure ranges and with double-pole or 2-circuit switches.

**No. 72 Low Water Control**

Used as a safety limiting control to prevent automatic heating equipment from firing into a dry boiler. Also used with electrically operated boiler feed pumps to maintain the water level in the boiler.



When ordering, specify maximum pressure, specific gravity and kind of liquid controlled, electrical capacity, and whether circuit is to open or close when float rise. Furnished single-pole single throw.

10 Amps. 4 Amps.  
 No. 72, for Pressures to 30 Pounds.....each \$30.00

No. 72, for Pressures to 150 Pounds.....each 34.00 \$32.50  
 No. 72, for 150 to 300 Pounds Pressure...each 54.00 52.50

For single-pole double throw or double-pole single throw add \$4.00 to 10-ampere list and \$2.50 to 4-ampere list.

**No. 31 Pressure Control**

A positive safety limiting device used on steam boilers. It is actuated by a Bourdon tube of great strength and elasticity. Standard range 1 to 10 pounds, differential 3 pounds. Can be furnished with steel Bourdon tube for unusual applications, or for pressures up to 3,000 pounds. Standard controls furnished for fully automatic operation, but can be supplied semi-automatic.



Unless otherwise specified, instrument will be shipped single-pole, 10-ampere rating to cut-out on rising pressure. When ordering special control, specify cut-in and cut-out points required, kind of substance controlled, and the maximum pressure to which the control will be subjected.

No. 31, Single-Pole Single Throw, 10 Amperes...each \$16.00  
 No. 31, Single-Pole Single Throw, 4 Amperes...each 14.50

Also available in lower or higher pressure ranges and with double-pole or 2-circuit switches.

**No. 858 Pressure and Vacuum Control**

Recommended for low pressure, steam, or vapor-vacuum boilers in connection with stokers, gas or oil burners, where close regulation is required. Also used for controlling refrigeration, brine pumps, air compressors, liquid by head pressure, etc.

Has an adjustable operating range from 10 inches vacuum to 15 pounds pressure. Outside adjustments provided for setting both range and differential. Controls available for higher range on close operating pressure.



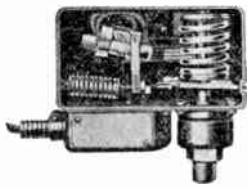
Unless otherwise specified, Model A-3 is furnished with 10-ampere Mercoid Switch to open circuit on rising pressure.

No. 858, Single-Pole Single Throw, 10 Amperes...each \$22.00  
 No. 858, Single-Pole Single Throw, 4 Amperes...each 20.50

Available single-pole double throw in 4-ampere type only at \$2.50 addition to list.



**Mercoid Limit Controls**  
No. 848 A & B Controls



Designed to automatically open and close an electric circuit with a change in pressure or vacuum on steam, air, gas, water and other liquids that will not attack brass. Used for boiler control with automatic heating equipment also for pressure control on refrigerants other than ammonia.

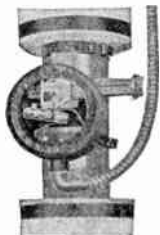
Particularly adapted to conditions that require close differential. Model B-6 provides an unusual combination of long range, high pressure and yet close control at any point in the range.

Single-pole, single throw.

	10 Amps.	4 Amps.
Model A-1, for Press. from 1-15 Lbs. . . . .	each \$29.00	\$27.50
Model B-1, for Press. from 10-60 Lbs. . . . .	each 30.00	28.50
Model B-4, for Press. from 25-100 Lbs. . . . .	each 35.00	33.50
Model B-6, for Press. from 0-200 or 50-250 Lbs. . . . .	ea. 40.00	38.50

Available in other ranges for either vacuum or pressure.

**No. 35 Risertherm**



Designed for temperature control by surface contact on risers of hot water systems or on hot water tanks. Widely used with automatic heating equipment. Easily mounted on either vertical or horizontal pipe or tank.

Standard range is from 110° to 220° F. with an approximate operating differential from 6° to 25° F., depending upon the size of pipe and the operating conditions of the installation.

No. 34 is identical with No. 35 except that the Mercoid Switch is in reverse position and the range is from 140° to 230° F. It is used in connection with a thermostat for dual control of unit heaters to prevent operation of the fan until the coils are heated.

Single-pole, single throw.

	10 Amps.	4 Amps.
No. 35, 110°-200° for Heating. . . . .	each \$16.00	\$14.50
No. 34, 140°-230° for Unit Heaters. . . . .	each 17.00	15.50

**No. 36 Boiler Control**



Immersion type controls have proven to be the correct type of limiting device for control of automatic heating equipment on hot water boiler installations.

There is no lag in the operation of these controls. Back angle type is also available.

Range No. 1, 105° to 160°, differential approximately 20°. Range No. 2, 140° to 214°, differential approximately 20°.

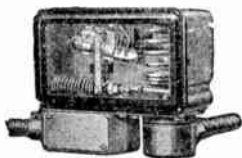
Range No. 3, 200° to 226°, differential approximately 13°.

Single-pole, single throw.

	10 Amps.	4 Amps.
No. 36, Ranges Nos. 1 and 2. . . . .	each \$18.00	\$16.50
No. 37, Back Angle Type, Ranges 1 and 2. . . . .	20.00	18.50
No. 37, Back Angle Type, Range No. 3. . . . .	each 22.00	20.50

For single-pole double throw or double-pole single throw add \$4.00 to 10-ampere list and \$2.50 to 4-ampere list.

**Type G-2 Immersion Boiler Control**



Designed for close regulation of electric equipment from slight changes of temperature in any liquids such as water, steam, or oil. Not injurious to brass. Recommended for control of domestic hot water storage tanks. Double adjustments provided for setting both range and differential.

Type G-1 has straight bottom connection.

Unless otherwise specified, instruments furnished single-pole, 10-ampere rating, to cut-out on rising temperature.

Standard range, 110° to 220°. Other ranges, 15° to 110°, 30° to 135°, 70° to 180°, and 155° to 245°.

Single-pole single throw.

	10 Amps.	4 Amps.
No. G-1, All Ranges. . . . .	each \$32.00	\$30.50
No. G-2, All Ranges. . . . .	each 34.00	32.50

For single-pole double throw or double-pole single throw, add \$4.00 to 10-ampere list and \$2.50 to 4-ampere list.

**Mercoid Limit Controls**

**Warm Air Furnace Control**



No. M-51 is used to protect warm air furnaces from overheating where automatic heating equipment is used. No. M-53 is to control fans or blowers to prevent operation unless the furnace is warm enough to deliver heat.

These controls are operated by a bi-metal coil projecting within the furnace hood. Adjustable mounting flange and a graduated temperature dial is provided.

Also furnished with long bi-metal stems for bake-ovens and industrial applications where close regulation is desired.

Single-pole single throw.

	10 Amps.	4 Amps.
No. M-51, Limit Control, 50°-650° F. . . . .	each \$16.00	\$14.50
No. M-53, Fan Control, 50°-650° F. . . . .	each 16.00	14.50
No. M-55, Temperature Control, 40°-280° F. . . . .	18.00	16.50

For single-pole double throw or double-pole single throw, add \$4.00 to 10-ampere list and \$2.50 to 4-ampere list.

**Type M-61 Stoker Control**



This control is generally used to fire the stoker intermittently during the period the room thermostat is in the off position, but may be used to limit the maximum temperature, or stop the stoker if the fire dies out.

The graduated dial clearly indicates the stack temperature. A simple double adjustment is provided for setting both the cut-in and cut-out temperatures.

Available with stainless steel well to protect the bi-metal operating coil.

Single-pole single throw for 50°-650°. Furnished with mounting flange and steel well, 10-ampere rating unless otherwise specified.

	10 Amps.	4 Amps.
No. M-61, with Plain Flange, no Well. . . . .	each \$16.00	\$14.50
No. M-61, Improved Flange, Steel Well. . . . .	each 20.00	18.50

**No. 46 Lever Arm Control**



Has numerous applications where it is desired to mechanically open and close electric circuits.

Standard control has a brass arm extending 4 1/2 inches to right for making mechanical connections. Can be furnished with arm extending to left and with longer or shorter arms when so specified. Furnished also for top or bottom mounting.

A 3-position High-Low indicator lever arm control as well as float operated control is also available.

Single-pole single throw.

	10 Amps.	4 Amps.
No. 46, Snap Action Lever Type. . . . .	each \$10.00	\$8.50

For single-pole double throw or double-pole single throw, add \$4.00 to 10-ampere list and \$2.50 to 4-ampere list.

**No. 40 Float Control**



Designed for maintaining fluid levels, or automatically controlling the operation of sump pumps or cellar drainers.

Suitable for any liquid that will not deteriorate brass or solder.

Furnished standard with 4-foot rod and 2 floats, requiring 1 1/2-inch travel to operate, however, adjustable stops on rod permit wider operation.

Where longer rod is required the proper number of floats and counterweights necessary for operation can be furnished at extra charge.




Single pole, single throw.




	10 Amps.	4 Amps.
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No. 40, Arm and Float Type. . . . .	each \$22.00	20.50
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Other lever arm and float controls available.





**Hemco Plug Fuse Cutouts**




					
<b>No. H110</b>	<b>No. H220</b>	<b>No. H221</b>			
Cat. No.	Per 100	Description	Car-ton	Std. Pkg.	Pkg. Wt., Lbs.
H110	\$20.22	Single Pole, Main Line...	10	100	21
H220	26.94	2-Pole Main Line.....	10	100	58
H221	29.48	2-Pole Single Branch....	5	50	42

					
<b>No. H224</b>	<b>No. H222</b>	<b>No. H232</b>			
H224	\$30.32	2-Pole Single or Double Crossover Branch.....	5	50	49
H222	52.22	2-Pole Double Branch....	5	50	62
H232	57.26	Triple to Double-Pole Double Branch.....	5	50	76

					
<b>No. H330</b>	<b>No. H331</b>	<b>No. H332</b>			
H330	\$46.32	3-Pole Main Line.....	5	50	50
H331	58.94	3-Pole Single Branch....	5	50	87
H332	79.16	3-Pole Double Branch....	5	50	118

**With Solid Neutral**

					
<b>No. H120</b>	<b>No. H121</b>	<b>No. H122</b>	<b>No. H132</b>		
H120	\$26.94	2-Pole Main Line.....	10	150	64
H121	29.48	2-Pole Single Branch....	10	100	62
H122	52.22	2-Pole Double Branch....	5	50	46
H132	57.26	Triple to Double-Pole Double Branch.....	5	50	57

					
<b>No. H133</b>	<b>No. H131</b>	<b>No. H134</b>			
H133	\$46.32	3-Pole Main Line.....	5	50	42
H131	58.94	3-Pole Single Branch or 2-Circuit.....	5	25	30
H134	109.48	3-Pole Double Branch or 4-Circuit.....	5	25	42

**Hemco Entrance Switches Fuses at Top**




Cat. No.	Per 100	Car-ton	Std. Pkg.	Pkg. Wt., Lbs.
H1695	\$63.16	1	25	38

**Fuses at Bottom**

Cat. No.	Per 100	Car-ton	Std. Pkg.	Pkg. Wt., Lbs.
H1981	\$63.16	1	25	37

**No. 559 Bryant Neutral Wire Fuseless Plugs**

30 Amperes, 125 Volts  
Can be inserted in neutral fuse receptacle of triple-pole cut-out base and soldered in place. This complies with N.E.C.S. which requires omission of fuses from grounded side of line except at cut-out base just preceding the lamp socket or other translating device.

	Cat. No.	Per 100	Car-ton	Std. Pkg.	Wt., Lbs.
	559	\$7.08	75	300	10

**Bryant Pyrotite Enclosed Plug Fuses**

125 Volts

**With Clear Hexagonal Mica Window in Cap**



Cat. No.	Per 100	Amperes	Car-ton	Std. Pkg.	Wt., Lbs.
POR-3	\$4.80	3	50	500	35
POR-6	4.80	6	50	500	35
POR-10	4.80	10	50	500	35
POR-15	4.80	15	50	500	35

**With Clear Round Mica Window in Cap**



Cat. No.	Per 100	Amperes	Car-ton	Std. Pkg.	Wt., Lbs.
POR-20	\$4.80	20	50	500	35
POR-25	4.80	25	50	500	35
POR-30	4.80	30	50	500	35

**Hemco Glass Plug Fuses**

**Branch Circuit, 125 Volts**

Cat. No.	Per 100	Amps.	Car-ton	Std. Pkg.	Pkg. Wt., Lbs.
PYX10	\$4.80	10	50	500	35
PYX15	4.80	15	50	500	35

**Main Circuit, 125 Volts**

Cat. No.	Per 100	Amps.	Car-ton	Std. Pkg.	Pkg. Wt., Lbs.
PYX20	\$4.80	20	50	500	35
PYX25	4.80	25	50	500	35
PYX30	4.80	30	50	500	35

Glass plug fuses will be packed in display cartons of 5 when so specified.

**Jefferson Plug Fuses**

The Jefferson Plug Fuse is made with a porcelain Safety Insulator Top, porcelain being one of the best insulators. Thus, user may replace the fuse with perfect safety.

The top of the Jefferson Plug Fuse has a cutout which is filled with clear mica and the specially formed fuse element makes it possible to see at a glance whether the fuse is blown.

**Hexagonal Opening**

No.	Each	Amp	Car-ton	Wt. Lbs. (50)
388-003	\$.07	3	50	3
388-005	.07	5	50	3
388-006	.07	6	50	3
388-008	.07	8	50	3
388-010	.05	10	50	3
388-015	.05	15	50	3



**Round Opening**

No.	Each	Amp	Car-ton	Wt. Lbs. (50)
388-020	\$.05	20	50	3
388-025	.05	25	50	3
388-030	.05	30	50	3

**Hexagonal Opening**

No.	Each	Amp.	Car-ton 20	Wt. Lbs. (100)
388-103	\$.07	3	100	5 3/4
388-105	.07	5	100	5 3/4
388-106	.07	6	100	5 3/4
388-108	.07	8	100	5 3/4
388-110	.05	10	100	5 3/4
388-115	.05	15	100	5 3/4



Attractive Display Carton of 5 Fuses

**Round Opening**

No.	Each	Amp.	Car-ton 20	Wt. Lbs. (100)
388-120	\$.05	20	100	5 3/4
388-125	.05	25	100	5 3/4
388-130	.05	30	100	5 3/4

## Buss Clear Window Plug Fuses



Phantom View

Entire strip can be seen through extra large window, against pure white background, indicating when a Buss Fuse has blown.

Solid one-piece body, sealed gas tight. Prevents danger of fire and property damage.

Buss Fuses always make good contact in the cutout. Excessive heating and needless blowing of fuses are avoided.

No. ....	*810	815	820	825	830
Amperes.....	10	15	20	25	30
Each.....	\$.07	.07	.07	.07	.07

Standard package 100. Weight, 65 lbs. per 100.

\*Except for instrument protection, Fusetrons should be used instead of small size fuses, as they give true and complete protection while their remarkable time-lag prevents useless blows from starting currents, etc.



Buss Fuses are packed five in a handy box that provides extra fuses when needed. Information printed on box tells user what to do when a fuse blows.

Special merchandising stand furnished free with order for 200 fuses.

Complete information on application.

## Buss Fusetrons

A Fusetron is a thermal cutout to which a fuse is added. Protects motor as well as circuit wiring.

The Fusetron is a simple, inexpensive device that will give complete electrical protection. It will actually protect small motors against overload and at the same time give protection against short circuits.

Overloads on the motor as low as 25 per cent, if continued, will cause the thermal cutout in the Fusetron to open the circuit.

Will not blow on starting currents because the fuse element used is large enough to carry these currents.

Fusetrons are made to standard fuse dimensions, just pull out the fuses and put in Fusetrons.

### Size to Use

See name plate of motor or device for amperes. Under ordinary conditions the ampere rating of the Fusetron should be the same or the nearest higher rating. On electric refrigerators the size must be at least 20 per cent greater than the ampere rating of the motor.



### 125 Volts

Fits standard plug fuse blocks.

This Fusetron is 1/8 inch higher than Buss plug fuses.

Each..... \$.15

No. ....	704	7045	705	7056	7062	708	710
Amp.....	4	4.5	5	5.6	6.25	8	10

### 250 and 600 Volts



Fits standard cartridge fuse blocks.

250 Volt, 3/16x2 inch.....	each \$.20						
600 Volt, 13/16x5 inch.....	each .50						
No. 250 Volts.....	4025	4032	404	405	4062	408	410
No. 600 Volts.....	6025	6032	604	605	6062	608	610
Amp.....	2.5	3.2	4	5	6.25	8	10

Other sizes can be obtained at the same prices. 125 volts from 1/10 to 30 amperes; 250 volts from 1/10 to 15 amperes; 600 volts from 1/10 to 10 amperes.

## Clearsite Non-Renewable Plug Fuses



Clearsite Plug Fuses mount the fuse link under the fuse window thereby giving clear vision of the link. The drop-out type of link is used which lessens the internal operating pressure.

The fuse body is made of heat-resisting molded insulation, black in color.

### Standard Sizes

Regular Packages				Retail Packages			
Cat. No.	Each	Cap. Amps.	Car-ton	Cat. No.	Each	Cap. Amps.	Ret. Pkg. *Car-ton
4310	\$.07	10	50	5710	\$.07	10	5 100
4315	.07	15	50	5715	.07	15	5 100
4320	.07	20	50	5720	.07	20	5 100
4325	.07	25	50	5725	.07	25	5 100
4330	.07	30	50	5730	.07	30	5 100

### Sub-Standard Sizes

4303	\$.07	3	50	5703	\$.07	3	5 100
4305	.07	5	50	5705	.07	5	5 100
4306	.07	6	50	5706	.07	6	5 100
4308	.07	8	50	5708	.07	8	5* 100

\*Carton contains 20 retail packages of 5 fuses each.

## Economy Renewable Plug Fuses

Packed 10 in carton; wt. 1 1/4 lbs.



Standard Sizes		Sub-Standard Sizes	
Cat. No.	Capacity Amperes	Cat. No.	Capacity Amperes
PF1068	10	PF368	3
PF1568	15	PF568	5
PF2068	20	PF668	6
PF2568	25	PF868	8
PF3068	30	.....	..
Each.....			\$.25

## Drop Out Renewal Links

Packed 100 in carton; wt. 2 ounces.

Standard Sizes		Sub-Standard Sizes	
Cat. No.	Capacity Amperes	Cat. No.	Capacity Amperes
PR6810	10	PR6803	3
PR6815	15	PR6805	5
PR6820	20	PR6806	6
PR6825	25	PR6808	8
PR6830	30	.....	..
Each.....			\$.02



## D & W Plug Fuse Casings

1-60 Amperes, 125 Volts  
Schedule F—Class 3



For use with N. E. C. S. type fuses.

Cat. No.	Cap. Amps.	Car-ton	Std. Pkg.	Price Each
190	1-30	10	100	\$.22
191	31-60	10	100	.43



**Tested Fuse Wire**



Fuse wire is carefully wound on spools having heavy flanges which effectually protect the soft fusible metal from abrasion or other mechanical injury; these are then placed in small cans that are properly labeled and sealed, so that fuse wire may be stored away for an indefinite time without depreciation in quality or appearance.

Safe Carrying Cap. Amps.	Per Lb.	BEST LENGTH FOR USE AND FUSING CURRENTS FOR SUCH LENGTHS		Length Feet per Lb.	Diam. Inches	One Pkg. Contains	
		Inches	Amperes			No. of Spools	Size Spools
1/4	\$100.00	1	3/4	12920	.0045	1	250 Ft.
1/2	10.00	1	1 1/2	2616	.010	2	4 Oz.
1	4.00	1 1/4	3 1/4	1021	.016	2	8 Oz.
2	3.50	1 1/2	5 1/2	419	.025	2	8 Oz.
3	3.00	1 1/2	7 1/2	273	.031	2	8 Oz.
5	2.25	1 3/4	10	172	.039	1	1 Lb.
6	2.25	2	11	148	.042	1	1 Lb.
10	2.00	2 1/4	16	87	.055	1	1 Lb.
15	2.00	2 1/4	22	57	.068	1	1 Lb.
20	1.50	2 1/2	28	39	.082	1	1 Lb.
25	1.50	2 3/4	34	29 3/4	.094	1	1 Lb.
30	1.50	2 3/4	40	24 3/4	.103	1	1 Lb.
40	1.50	3	48	17 1/2	.122	1	1 Lb.
50	1.50	3	59	14	.137	1	1 Lb.
60	1.50	3 1/4	70	10 1/2	.158	1	5 Lb.
70	1.50	3 1/4	78	9	.170	1	5 Lb.
75	1.50	3 1/2	85	8	.182	1	5 Lb.
80	1.50	3 1/2	92	7 1/4	.189	1	5 Lb.
90	1.50	3 1/2	108	5 3/4	.212	1	5 Lb.
100	1.50	4	114	5	.226	1	5 Lb.

**Square D Positive Pressure Fuse Clips**



250 Volts

Cat. No.	Per 100 Std. Pkg.	Per 100 Less Std. Pkg.	Amps.	Type	Std. Pkg.
*SK-2370	\$10.40	\$12.40	30	Clip	200
SK-2371	10.40	12.40	30	Clip	200
SK-2372	13.60	16.20	60	Clip	75
†SK-2363	47.00	56.00	100	Jaw	40
†SK-2364	99.00	119.00	200	Jaw	20
†SK-2365	240.00	288.00	400	Jaw	10
†SK-2366	410.00	500.00	600	Jaw	4
<b>600 Volts</b>					
SK-2361	\$13.00	\$15.60	30	Clip	100
SK-2362	16.80	20.00	60	Clip	50
†SK-2363	47.00	56.00	100	Jaw	40
†SK-2364	99.00	119.00	200	Jaw	20
†SK-2365	240.00	288.00	400	Jaw	10
†SK-2366	410.00	500.00	600	Jaw	4

\*For lighting panels only.

†Pressure springs included but not assembled to clip.

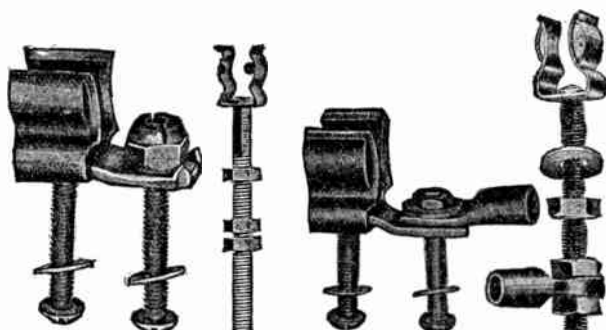
**Steel Reinforcing Springs Only**

To Convert Multi-Spring Jaws to Positive Pressure Type

SK-2373	\$20.00	\$24.00	100	....	20
SK-2374	40.00	48.00	200	....	10
SK-2375	80.00	96.00	400	....	4
SK-2376	120.00	144.00	600	....	2

**FA Fuse Terminals**

250 and 600 Volts



Type F  
3 to 30  
Amperes

Type B  
3 to 30  
Amperes

Type F  
31 to 60  
Amperes

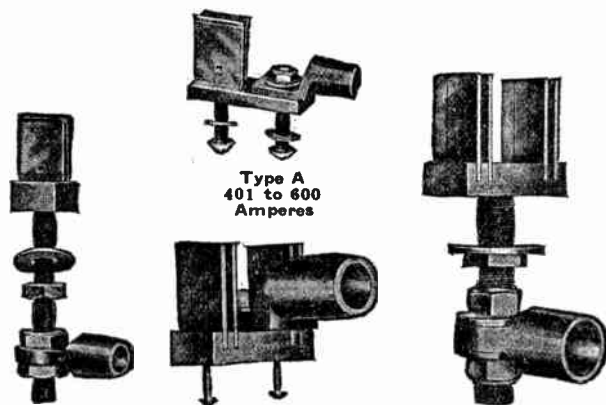
Type B  
31 to 60  
Amperes

**Front Connection**

Cat. No.	Ampere Capacity	Volts	PRICE, EACH	
			Plain Finish	Satin Finish
F 33	30	250	\$ .40	\$ .32
F 63	60	250	.60	.48
F 36	30	600	.78	.62
F 66	60	600	.95	.76
F103	100	250 and 600	1.05	.84
F203	200	250 and 600	1.63	1.30

**Back Connection**

B 33	30	250	\$ .88	\$ .70
B 63	60	250	1.30	1.04
B 36	30	600	1.33	1.10
B 66	60	600	1.58	1.26
B103	100	250 and 600	2.70	2.24
B203	200	250 and 600	4.20	3.36



Type A  
401 to 600  
Amperes

Type B  
61 to 600  
Amperes

Type A  
601 to 1200  
Amperes

**Front Connection**

Cat. No.	Ampere Capacity	Volts	PRICE, EACH	
			Plain Finish	Satin Finish
A 403	400	250 and 600	\$5.83	\$4.66
A 603	600	250 and 600	9.13	7.30
A 803	800	250 and 600	15.63	12.50
A1003	1200	250 and 600	23.03	18.42

**Back Connection**

B 403	400	250 and 600	\$8.50	\$6.80
B 603	600	250 and 600	13.63	10.10
B 803	800	250 and 600	28.00	22.40
B1003	1200	250 and 600	38.13	30.50

Front connection fuse terminals are furnished with short screws, requiring head to be countersunk.

Back connection fuse terminals are furnished with studs long enough for 2-inch slate or marble mounting.

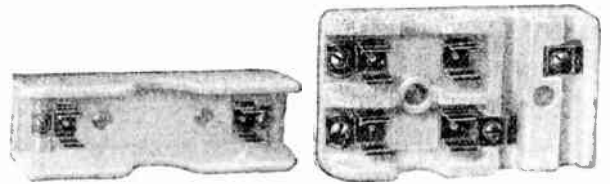
NOTE.—Satin finish will be sent unless otherwise specified.

## FA Standard Fuse Blocks

## D & W Enclosed Fuse Cutouts

For N. E. C. Cartridge Type Fuses

Front Connection—Plain Finish  
On Dead Black Finish Bases



Nos. 91098 and 91107—Single Pole

Nos. 91104 and 91110—Double Pole

### SINGLE-POLE

### DOUBLE-POLE



250 Volts, D.C. or A.C.

250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 331	30	\$1.20
F 631	60	1.80
F 1031	100	2.50
F 2031	200	3.60
A 4031	400	10.10
A 6031	600	15.30
A 8031	800	24.60
A10031	1000	35.80

Cat. No.	Capacity Amperes	Price Each
F 332	30	\$1.70
F 632	60	2.80
F 1032	100	3.60
F 2032	200	5.80
A 4032	400	18.60
A 6032	600	28.90
A 8032	800	48.20
A10032	1000	70.70

600 Volts, D.C. or A.C.

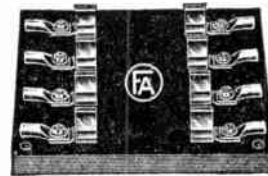
600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 361	30	\$1.60
F 661	60	2.20
F 1061	100	2.50
F 2061	200	3.80
A 4061	400	10.30
A 6061	600	16.50

Cat. No.	Capacity Amperes	Price Each
F 362	30	\$2.50
F 662	60	3.60
F 1062	100	4.00
F 2062	200	6.60
A 4062	400	19.40
A 6062	600	31.40

### 3-POLE

### 4-POLE



250 Volts, D.C. or A.C.

250 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 333	30	\$2.20
F 633	60	3.80
F 1033	100	5.20
F 2033	200	8.70
A 4033	400	28.20
A 6033	600	43.90
A 8033	800	71.50
A10033	1000	105.10

Cat. No.	Capacity Amperes	Price Each
F 334	30	\$3.70
F 634	60	4.90
F 1034	100	6.90
F 2034	200	12.00
A 4034	400	37.70
A 6034	600	58.20
A 8034	800	94.00
A10034	1000	141.00

600 Volts, D.C. or A.C.

600 Volts, D.C. or A.C.

Cat. No.	Capacity Amperes	Price Each
F 363	30	\$3.90
F 663	60	5.50
F 1063	100	6.20
F 2063	200	10.10
A 4063	400	29.40
A 6063	600	46.50

Cat. No.	Capacity Amperes	Price Each
F 364	30	\$4.80
F 664	60	8.70
F 1064	100	9.50
F 2064	200	14.40
A 4064	400	39.60
A 6064	600	63.70

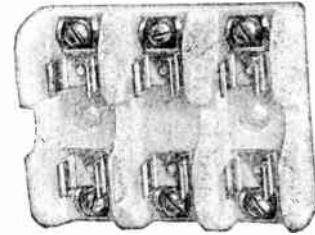
The 30 and 60-ampere fuse blocks have ferrule type clips.

The 100 and 200-ampere fuse blocks have formed clips.

The 400 and 600-ampere fuse blocks have milled in clips.

Fuse blocks over 600 amperes are made with multiple milled parts for each pole.

Schedule FC—Class 1



Nos. 91103 and 91109 Triple Pole

0-600 Amperes—250 Volts  
Ferrule Contact, Porcelain Base

Cat. No.	Each	Cap. Amps.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Std. Pkg.
91101	\$.34	0-30	Single-Pole, Main Line	5	50	13	
91098	.34	0-30	Single-Pole, Main Line with Barriers	5	50	37	
91102	.46	0-30	Double-Pole Main Line	5	50	37	
91103	.67	0-30	Triple-pole Main Line	5	50	51	
91104	.59	0-30	Double-Pole Sgl. Br.	5	50	60	
91105	1.14	0-30	Triple-Pole Sgl. Br.	1	50	90	
91106	1.09	0-30	Double-Pole Dbl. Br.	1	25	50	
91100	1.89	0-30	Triple-Pole Dbl. Br.	1	25	91	
91121	1.26	0-30	3 to 2-Wire, Dbl. Br.	1	25	65	
91107	.55	31-60	Single-Pole Main Line	5	50	30	
91108	1.18	31-60	Double-Pole, Main Line	1	50	81	
91109	1.68	31-60	Triple-Pole, Main Line	1	50	117	
91110	1.47	31-60	Double-Pole, Sgl. Br.	1	50	121	
91111	2.53	31-60	Triple-Pole, Sgl. Br.	1	25	250	
91113	2.95	31-60	Double-Pole, Dbl. Br.	1	25	134	
91123	5.05	31-60	Triple-Pole, Dbl. Br.	1	10	95	
91124	3.54	31-60	3 to 2-Wire, Dbl. Br.	1	25	158	

Knife Blade Contact, Porcelain Base

91114	\$1.18	61-100	Single-Pole, Main Line	1	50	79	
91119	2.36	61-100	Double-Pole, Main Line	1	50	156	
91120	3.37	61-100	Triple-Pole, Main Line	1	25	117	

Knife Blade Contact, Slate Base

91115	\$2.10	101-200	Single-Pole, Main Line	1	25	84	
91117	5.25	201-400	Single-Pole, Main Line	1	10	138	
91118	7.20	401-600	Single-Pole, Main Line	1	5	93	

0-600 Amperes—600 Volts



Nos. 28079, 28080 and 28081

Ferrule Contact, Porcelain Base

Cat. No.	Each	Cap. Amp.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Std. Pkg.
28074	\$.51	0-30	Single-Pole, with Barriers	5	50	70	
28075	.75	31-60	Single-Pole, with Barriers	1	50	140	
28076	.48	0-30	Single-Pole	5	50	48	
28077	.72	31-60	Single-Pole	5	50	54	

Knife Blade Contact, Porcelain Base

28078	\$1.47	61-100	Single-Pole	1	50	102	
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Knife Blade Contact, Slate Base

28079	\$2.30	101-200	Single-Pole	1	25	106	
28080	6.00	201-400	Single-Pole	1	10	181	
28081	7.80	401-600	Single-Pole	1	15	108	

**D & W Enclosed Fuses**

250 Volts

Schedule F—Class I

Ferrule Contact, 1-60 Amperes



Carton quantity, 10; standard package, 100.

Cap. Amps.	Wt., Lbs. Std. Pkg.	Non-Indicating		Indicating	
		Cat. No.	Per 100	Cat. No.	Per 100
1	..	91001	\$8.10	.....	.....
3	4	DW1454	8.10	91125	\$9.00
6	4	DW1457	8.10	91128	9.00
10	4	DW1461	8.10	91133	9.00
15	4	DW1463	8.10	91135	9.00
20	4	DW1464	8.10	91136	9.00
25	4	DW1465	8.10	91137	9.00
30	4	DW1466	8.10	91138	9.00
35	11	DW1467	16.20	91139	18.00
40	11	DW1468	16.20	91140	18.00
45	11	DW1469	16.20	91141	18.00
50	11	DW1470	16.20	91143	18.00
60	11	DW1472	16.20	91147	18.00

**Knife Blade Contact, 61-600 Amperes**



Carton quantity: 65 to 100 amperes, 5—100 to 600 amperes, 1.

Standard package: 65 to 100 amperes, 50—110 to 220 amperes, 25—225 to 400 amperes, 10—450 to 600 amperes, 5.

Cap. Amps.	Wt., Lbs. Std. Pkg.	Non-Indicating		Indicating	
		Cat. No.	Per 100	Cat. No.	Per 100
70	16	DW1474	\$48.60	.....	.....
80	16	DW1476	48.60	91152	\$54.00
90	16	DW1477	48.60	.....	.....
100	16	DW1478	48.60	91156	54.00
110	22	DW1479	108.00	.....	.....
125	22	DW2628	108.00	.....	.....
150	22	DW1483	108.00	91162	120.00
175	22	DW2629	108.00	.....	.....
200	22	DW1488	108.00	91164	120.00
225	11	DW1489	194.40	91165	216.00
250	11	DW1490	194.40	91166	216.00
300	11	DW1492	.....	91168	216.00
350	11	DW1494	194.40	91170	216.00
400	11	DW1496	194.40	91172	216.00
450	14	DW1498	297.00	.....	.....
500	14	DW1500	297.00	91174	330.00
600	14	DW1504	297.00	91176	330.00

**Refills for Enclosed Fuses**

Amperes.....	65-100	110-200	225-400	450-600
Non-Indicating per 100	\$22.96	\$51.00	\$91.80	\$140.26
Indicating.....per 100	27.54	61.20	110.16	168.30

An addition of \$5.00 list per size (ampere rating) per shipment should be added to these prices regardless of quantity.

**D & W Enclosed Fuses**

600 Volts

Schedule F—Class I

Ferrule Contact, 1-60 Amperes



Carton quantity, 10; standard package, 100.

Cap. Amps.	Wt. Lbs. Std. Pkg.	Non-Indicating		Indicating	
		Cat. No.	Per 100	Cat. No.	Per 100
1	..	28082	\$27.00	.....	.....
3	14	DW1505	27.00	28084	\$30.00
6	14	DW1508	27.00	28087	30.00
10	14	DW1512	27.00	28091	30.00
15	14	DW1514	27.00	28093	30.00
20	14	DW1515	27.00	28094	30.00
25	14	DW1516	27.00	28095	30.00
30	14	DW1517	27.00	28096	30.00
35	25	DW1518	43.20	28097	48.00
40	25	DW1519	43.20	28098	48.00
45	25	DW1520	43.20	28099	48.00
50	25	DW1521	43.20	28100	48.00
60	25	DW1523	43.20	28102	48.00

**Knife Blade Contact, 61-600 Amperes**



Carton quantity, 65 to 100 amperes, 5; 110 to 600 amperes, 1. Standard package, 65 to 100 amperes, 50—110 to 200 amperes, 25—225 to 400 amperes, 10; 450 to 600 amperes, 5.

Cap. Amps.	Wt. Lbs. Std. Pkg.	Non-Indicating		Indicating	
		Cat. No.	Per 100	Cat. No.	Per 100
70	27	DW1525	\$97.20	.....	.....
80	27	DW1527	97.20	.....	.....
90	27	DW1528	97.20	.....	.....
100	27	DW1529	97.20	28110	108.00
110	34	DW1530	189.00	.....	.....
125	34	DW2631	189.00	.....	.....
150	34	DW1534	189.00	28114	210.00
175	34	DW2632	189.00	.....	.....
200	34	DW1539	189.00	28116	210.00
225	31	DW1540	378.00	.....	.....
250	31	DW1541	378.00	28118	420.00
300	31	DW1543	378.00	28120	420.00
350	31	DW1545	378.00	.....	.....
400	31	DW1547	378.00	28124	420.00
450	25	DW1549	540.00	.....	.....
500	25	DW1551	540.00	28126	600.00
600	25	DW1555	540.00	28128	600.00

**Refills For Enclosed Fuses**

Amperes.....	65-100	110-200	225-400	450-600
Non-Indicating per 100	\$45.90	\$89.26	\$178.50	\$255.00
Indicating.....per 100	55.08	107.10	214.20	306.00

An addition of \$5.00 list per size (ampere rating) per shipment should be added to these prices regardless of quantity.



## Economy Renewable Cartridge Fuses

250 and 600 Volts

Economy Fuses always operate at rated capacities. The drop out renewal link is quickly and easily replaced and the restoration of a blown Economy Fuse to its original efficiency is the work of a few moments only.

These fuses operate successfully under all conditions of service without filling material of any description. Fuses bear the "Und. Inspected" label in all capacities from 0 to 600 amperes in both 250 and 600 volts.

### Complete Fuses—Ferrule Type—1 to 60 Amperes



Amperes	Car-ton	250 Volts			600 Volts		
		Cat. No.	Wt., Lbs. per Carton	Each	Cat. No.	Wt., Lbs. per Carton	Each
3	10	F- 325	5/8	\$.40	F- 305	1 5/8	\$1.00
6	10	F- 625	5/8	.40	F- 605	1 5/8	1.00
10	10	F-1025	5/8	.40	F-1005	1 5/8	1.00
15	10	F-1525	5/8	.40	F-1505	1 5/8	1.00
20	10	F-2025	5/8	.40	F-2005	1 5/8	1.00
25	10	F-2525	5/8	.40	F-2505	1 5/8	1.00
30	10	F-3025	5/8	.40	F-3005	1 5/8	1.00
35	10	F-3525	1 3/8	.80	F-3505	3 3/8	1.60
40	10	F-4025	1 3/8	.80	F-4005	3 3/8	1.60
45	10	F-4525	1 3/8	.80	F-4505	3 3/8	1.60
50	10	F-5025	1 3/8	.80	F-5005	3 3/8	1.60
60	10	F-6025	1 3/8	.80	F-6005	3 3/8	1.60

#### Dimensions

Amperes	250 Volts		600 Volts	
	Length Inches	Diameter Inches	Length Inches	Diameter Inches
1-30	2	9/16	5	1 1/16
35-60	3	1 1/16	5 1/2	1 1/16

### Complete Fuses—Knife Blade Type—61 to 600 Amperes



Amperes	Car-ton	250 Volts			600 Volts		
		Cat. No.	Wt., Lbs. per Carton	Each	Cat. No.	Wt., Lbs. per Carton	Each
70	5	F- 7025	2	\$1.80	F- 7005	3 3/8	\$3.60
80	5	F- 8025	2	1.80	F- 8005	3 3/8	3.60
90	5	F- 9025	2	1.80	F- 9005	3 3/8	3.60
100	5	F-10025	2	1.80	F-10005	3 3/8	3.60
110	1	F-11025	1 1/16	4.00	F-11005	1 3/4	7.00
125	1	F-12525	1 1/16	4.00	F-12505	1 3/4	7.00
150	1	F-15025	1 1/16	4.00	F-15005	1 3/4	7.00
175	1	F-17525	1 1/16	4.00	F-17505	1 3/4	7.00
200	1	F-20025	1 1/16	4.00	F-20005	1 3/4	7.00
225	1	F-22525	2 1/8	7.20	F-22505	3 3/8	14.00
250	1	F-25025	2 1/8	7.20	F-25005	3 3/8	14.00
300	1	F-30025	2 1/8	7.20	F-30005	3 3/8	14.00
350	1	F-35025	2 1/8	7.20	F-35005	3 3/8	14.00
400	1	F-40025	2 1/8	7.20	F-40005	3 3/8	14.00
450	1	F-45025	3 1/2	11.00	F-45005	5 1/2	20.00
500	1	F-50025	3 1/2	11.00	F-50005	5 1/2	20.00
600	1	F-60025	3 1/2	11.00	F-60005	5 1/2	20.00

#### Dimensions

Amperes	250 Volts		600 Volts	
	Length Inches	Blade Width Inches	Length Inches	Blade Width Inches
61-100	5 7/8	3/4	7 7/8	3/4
110-200	7 1/8	1 1/8	9 5/8	1 1/8
225-400	8 5/8	1 5/8	11 5/8	1 5/8
450-600	10 3/8	2	13 3/8	2

## Economy Renewal Links

Ferrule Type—1 to 60 Amperes



250 Volts

Cat. No.	Each	Amperes	Carton	Wt. Lbs. per Carton
R-203	\$.02	3	100	3/16
R-206	.02	6	100	3/16
R-210	.02	10	100	3/16
R-215	.02	15	100	3/16
R-220	.02	20	100	3/16
R-225	.02	25	100	3/16
R-230	.02	30	100	3/16
R-235	.04	35	100	5/8
R-240	.04	40	100	5/8
R-245	.04	45	100	5/8
R-250	.04	50	100	5/8
R-260	.04	60	100	5/8

600 Volts

Cat. No.	Each	Amperes	Carton	Wt. Lbs. per Carton
R-603	\$.05	3	100	9/16
R-606	.05	6	100	9/16
R-610	.05	10	100	9/16
R-615	.05	15	100	9/16
R-620	.05	20	100	9/16
R-625	.05	25	100	9/16
R-630	.05	30	100	9/16
R-635	.08	35	100	1 1/16
R-640	.08	40	100	1 1/16
R-645	.08	45	100	1 1/16
R-650	.08	50	100	1 1/16
R-660	.08	60	100	1 1/16

### Knife Blade Type—61 to 600 Amperes



250 Volts

Cat. No.	Each	Amperes	Carton	Wt. Lbs. per Carton
R- 270	\$.09	70	50	3/8
R- 280	.09	80	50	3/8
R- 290	.09	90	50	3/8
R-2100	.09	100	50	3/8
R-2110	.20	110	25	7/16
R-2125	.20	125	25	7/16
R-2150	.20	150	25	7/16
R-2175	.20	175	25	7/16
R-2200	.20	200	25	7/16
R-2225	.36	225	25	15/16
R-2250	.36	250	25	15/16
R-2300	.36	300	25	15/16
R-2350	.36	350	25	15/16
R-2400	.36	400	25	15/16
R-2450	.55	450	10	1 1/16
R-2500	.55	500	10	1 1/16
R-2600	.55	600	10	1 1/16

600 Volts

Cat. No.	Each	Amperes	Carton	Wt. Lbs. per Carton
R- 670	\$.18	70	50	1
R- 680	.18	80	50	1
R- 690	.18	90	50	1
R-6100	.18	100	50	1
R-6110	.35	110	25	1 1/16
R-6125	.35	125	25	1 1/16
R-6150	.35	150	25	1 1/16
R-6175	.35	175	25	1 1/16
R-6200	.35	200	25	1 1/16
R-6225	.70	225	25	2 15/16
R-6250	.70	250	25	2 15/16
R-6300	.70	300	25	2 15/16
R-6350	.70	350	25	2 15/16
R-6400	.70	400	25	2 15/16
R-6450	1.00	450	10	1 7/8
R-6500	1.00	500	10	1 7/8
R-6600	1.00	600	10	1 7/8

**Buss Super-Lag Renewable Fuses**

250 and 600 Volts



Buss Super-Lag Fuses have a super-long time-lag. They do not blow as often as old style fuses; will not pop open on every surge or harmless overload.

The fuses give better motor protection, make it possible to fuse nearer to the motor rating, and prevent single phasing.

Few simple parts of the Buss Fuse case make renewal quick and easy. Faulty renewal is impossible.

Heating from poor contact is prevented; charring and burning of cases practically eliminated; needless blowing of fuses is avoided; and fuse bills are materially reduced.

**Buss Super-Lag Renewal Links**

One-Piece Links on All Sizes

All Buss Super-Lag Renewal links are made in one piece. This insures better contact within the fuse than when several links and washers must be bolted together.

Thus needless blows due to heat from poor contact are eliminated and charring of fuse cases is avoided.

Renewal of large size fuses is made very simple, and time and trouble are saved.

Buss Super-Lag Renewal Links are of standard size, interchangeable with all standard makes of renewable fuses.



3 to 60 Amperes

**Complete Fuses—Ferrule Type—3 to 60 Amperes**

Amps.	250 Volts			600 Volts		
	Cat. No.	Each	Wt., Lbs. per 100	Cat. No.	Each	Wt., Lbs. per 100 Carton
* 3	1003	\$.40	5.5	1303	\$1.00	18 10
* 6	1006	.40	5.5	1306	1.00	18 10
*10	1010	.40	5.5	1310	1.00	18 10
15	1012	.40	5.5	1312	1.00	18 10
20	1013	.40	5.5	1313	1.00	18 10
25	1014	.40	5.5	1314	1.00	18 10
30	1015	.40	5.5	1315	1.00	18 10
35	1016	.80	14	1316	1.60	36 10
40	1017	.80	14	1317	1.60	36 10
45	1018	.80	14	1318	1.60	36 10
50	1019	.80	14	1319	1.60	36 10
60	1021	.80	14	1321	1.60	36 10

Amps.	250 Volts			600 Volts			Carton
	No.	Each	Wt., Lbs. per 100	No.	Each	Wt., Lbs. per 100	
*3	1103	\$.02	1/4	1403	\$.05	1	100
*6	1106	.02	1/4	1406	.05	1	100
*10	1110	.02	1/4	1410	.05	1	100
15	1112	.02	1/4	1412	.05	1	100
20	1113	.02	1/4	1413	.05	1	100
25	1114	.02	1/4	1414	.05	1	100
30	1115	.02	1/4	1415	.05	1	100
35	1116	.04	1	1416	.08	3	100
40	1117	.04	1	1417	.08	3	100
45	1118	.04	1	1418	.08	3	100
50	1119	.04	1	1419	.08	3	100
60	1121	.04	1	1421	.08	3	100

**Complete Fuses—Knife Blade Type—70 to 600 Amperes**

70	1023	\$1.80	46	1323	\$3.60	83	5
80	1025	1.80	46	1325	3.60	83	5
90	1027	1.80	46	1327	3.60	83	5
100	1029	1.80	46	1329	3.60	83	5
110	1030	4.00	109	1330	7.00	183	1
125	1031	4.00	109	1331	7.00	183	1
150	1032	4.00	109	1332	7.00	183	1
175	1033	4.00	109	1333	7.00	183	1
200	1034	4.00	109	1334	7.00	183	1
225	1035	7.20	266	1335	14.00	373	1
250	1036	7.20	266	1336	14.00	373	1
300	1038	7.20	266	1338	14.00	373	1
350	1040	7.20	266	1340	14.00	373	1
400	1042	7.20	266	1342	14.00	373	1
450	1043	11.00	389	1343	20.00	573	1
500	1044	11.00	389	1344	20.00	573	1
600	1046	11.00	389	1346	20.00	573	1



70 to 300 Amperes

70	1123	.09	2	1423	.18	5.3	50
80	1125	.09	2	1425	.18	5.3	50
90	1127	.09	2	1427	.18	5.3	50
100	1129	.09	2	1429	.18	5.3	50
110	1130	.20	5	1430	.35	14.6	25
125	1131	.20	5	1431	.35	14.6	25
150	1133	.20	5	1433	.35	14.6	25
175	1135	.20	5	1435	.35	14.6	25
200	1137	.20	5	1437	.35	14.6	25
225	1138	.36	11	1438	.70	29	25
250	1139	.36	11	1439	.70	29	25
300	1141	.36	11	1441	.70	29	25

**Dimensions, Inches Ferrule Type**

Amps.	250 Volts			600 Volts		
	Length Over All	Diam. of Tube	Diam. Over Ferrules	Length Over All	Diam. of Tube	Diam. Over Ferrules
3-30	2	1/2	9/16	5	3/4	13/16
35-60	3	3/4	13/16	5 1/2	1	1 1/16

350 to 400 Amperes

350	1143	.36	11	1443	.70	29	25
400	1145	.36	11	1445	.70	29	25

**Knife Blade Type**

Amps.	250 Volts			600 Volts		
	CONTACT BLADE, IN. Thickness	Width	Length	Lgth. Over All	Diam. Tube	Diam. Tube
70-100	1/8	3/4	1	5 7/8	1	7 7/8
110-200	3/16	1 1/8	1 3/8	7 1/8	1 1/2	9 5/8
225-400	1/4	1 5/8	1 7/8	8 5/8	2	11 5/8
450-600	1/4	2	2 1/4	10 5/8	2 1/2	13 5/8



450 to 600 Amperes

450	1146	.55	16	1446	1.00	37	10
500	1147	.55	16	1447	1.00	37	10
600	1149	.55	16	1449	1.00	37	10

\*Except for instrument protection, Fusetrons should be used instead of small size fuses, as they give true and complete protection while their remarkable time-lag prevents useless blows from starting currents, etc.

\*Except for instrument protection, Fusetrons should be used instead of small size fuses, as they give true and complete protection while their remarkable time-lag prevents useless blows from starting currents, etc.

**Buss One-Time Fuses**  
250 and 600 Volts



Ferrule Contact Fuse—1 to 60 Amperes



Knife Blade Contact—70 to 1000 Amperes

Buss One-Time Fuses are guaranteed, with good contact, to operate perfectly at any overload without charring or burning the fuse case.

Buss One-Time Cartridge Fuses are listed as standard by the Underwriters' Laboratories in all sizes up to and including 600 amperes. Sizes larger than 600 amperes are not tested or listed by the Underwriters and should not be used. (Use two smaller fuses in parallel.)

**Ferrule Contact Fuse—1 to 60 Amperes**

Cap. Amp.	Carton	250 Volts		600 Volts	
		Cat. No.	Wt., Lbs. per 100	Cat. No.	Wt., Lbs. per 100
*1	10	25001	3.8	60001	14.5
*3	10	25003	3.8	60003	14.5
*6	10	25006	3.8	60006	14.5
*10	10	25010	3.8	60010	14.5
15	10	25015	3.8	60015	14.5
20	10	25020	3.8	60020	14.5
25	10	25025	3.8	60025	14.5
30	10	25030	3.8	60030	14.5
35	10	25035	10.0	60035	26.0
40	10	25040	10.0	60040	26.0
45	10	25045	10.0	60045	26.0
50	10	25050	10.0	60050	26.0
60	10	25060	10.0	60060	26.0

**Knife Blade Contact—70 to 1000 Amperes**

Cap. Amp.	Carton	Cat. No.	Wt., Lbs. per 100	Each	Cat. No.	Wt., Lbs. per 100	Each
70	5	25070	32.0	\$.90	60070	56.0	\$1.80
80	5	25080	32.0	.90	60080	56.0	1.80
90	5	25090	32.0	.90	60090	56.0	1.80
100	5	25100	32.0	.90	60100	56.0	1.80
110	1	25110	79.0	2.00	60110	124.0	3.50
125	1	25125	79.0	2.00	60125	124.0	3.50
150	1	25150	79.0	2.00	60150	124.0	3.50
175	1	25175	79.0	2.00	60175	124.0	3.50
200	1	25200	79.0	2.00	60200	124.0	3.50
225	1	25225	165.0	3.60	60225	303.0	7.00
250	1	25250	165.0	3.60	60250	303.0	7.00
300	1	25300	165.0	3.60	60300	303.0	7.00
350	1	25350	165.0	3.60	60350	303.0	7.00
400	1	25400	165.0	3.60	60400	303.0	7.00
450	1	25450	276.0	5.50	60450	463.0	10.00
500	1	25500	276.0	5.50	60500	463.0	10.00
600	1	25600	276.0	5.50	60600	463.0	10.00
700	1	25700	430.0	12.00	60700	600.0	15.00
800	1	25800	430.0	12.00	60800	600.0	15.00
900	1	25900	540.0	15.00	60900	775.0	18.00
1000	1	26000	540.0	15.00	61000	775.0	18.00

**Dimensions, Inches**  
Ferrule Contact Fuse

Amps.	250 Volts			600 Volts		
	Length Over All	Diam. of Tube	Diam. Over Ferrules	Length Over All	Diam. of Tube	Diam. Over Ferrules
1-30	2	1/2	9/16	5	3/4	13/16
35-60	3	3/4	13/16	5 1/2	1	1 1/16

**Knife Blade Contact**

Amps.	250 Volts			600 Volts		
	Thickness	Width	Length	Lgth. Over All	Diam. Tube	Lgth. Over All
70-100	1/8	3/4	1	5 7/8	1	7 7/8
110-200	3/16	1 1/8	1 3/8	7 1/8	1 1/2	9 5/8
225-400	1/4	1 5/8	1 7/8	8 3/8	2	11 5/8
450-600	1/4	2	2 1/4	10 3/8	2 1/2	13 3/8
650-800	3/8	2 3/8	2 5/8	11 1/2	3	14 1/2
850-1000	3/8	2 5/8	2 13/16	12 3/8	3 1/2	15 3/8

\*Except for instrument protection, Fusetrans should be used instead of small size fuses, as they give true and complete protection while their remarkable time-lag prevents useless blows from starting currents, etc.

**Eco Non-Indicating Non-Renewable Enclosed Fuses**

Ferrule Type



Cap. Amps.	Unit Carton Quan.	250 Volts		600 Volts	
		Cat. No.	Each	Cat. No.	Each
1	10	1101	\$.15	1601	\$.50
3	10	1103	.15	1603	.50
6	10	1106	.15	1606	.50
10	10	1110	.15	1610	.50
15	10	1115	.15	1615	.50
20	10	1120	.15	1620	.50
25	10	1125	.15	1625	.50
30	10	1130	.15	1630	.50
35	10	1135	.30	1635	.80
40	10	1140	.30	1640	.80
45	10	1145	.30	1645	.80
50	10	1150	.30	1650	.80
60	10	1160	.30	1660	.80

Knife Blade Type



Cap. Amps.	Unit Carton Quan.	250 Volts		600 Volts	
		Cat. No.	Each	Cat. No.	Each
70	5	11070	\$.90	16070	\$1.80
80	5	11080	.90	16080	1.80
90	5	11090	.90	16090	1.80
100	5	11100	.90	16100	1.80
110	1	11110	2.00	16110	3.50
125	1	11125	2.00	16125	3.50
150	1	11150	2.00	16150	3.50
175	1	11175	2.00	16175	3.50
200	1	11200	2.00	16200	3.50
225	1	11225	3.60	16225	7.00
250	1	11250	3.60	16250	7.00
300	1	11300	3.60	16300	7.00
350	1	11350	3.60	16350	7.00
400	1	11400	3.60	16400	7.00
450	1	11450	5.50	16450	10.00
500	1	11500	5.50	16500	10.00
600	1	11600	5.50	16600	10.00

**Ideal Fuse Pullers**



Designed to eliminate danger of pulling and replacing cartridge fuses by hand and bending of fuse clips through improper removal. Also adapted for adjusting loose cutout clips, handling laboratory test tubes, live electrical parts, etc.

Approved as standard by safety departments of thousands of industrial plants. Made in four handy sizes.

**Midget Size**

For handling small fuses, grid leaks, etc., 1/4 to 1/2 inch in diameter. Has 3 laminations, 5 inches long.  
Each.....\$ .45

**Pocket Size**

A popular size for general use. For fuses 0 to 200 amperes, 250 volts and 1 to 100 amperes, 600 volts. Has 5 laminations, 7 1/2 inches long.  
Each.....\$ 1.25

**Giant Size**

For fuses 100 to 600 amperes, 250 volts and 60 to 400 amperes, 600 volts. Has 7 laminations, 12 inches long.  
Each.....\$ 3.75

**Jumbo Size**

A large powerful tool for handling fuses 200 to 800 amperes, 250 volts and 200 to 600 amperes, 600 volts. Has 9 laminations, 20 inches long.  
Each.....\$ 11.20



**Jefferson Super-Lag Renewable Enclosed Fuses**

Care should be taken to insure clean contact surfaces between the copper blades, renewals and washers. The nut should always be drawn up tight.

**Ferrule Type**



Cap. Amp.	Car- ton	250 Volts			600 Volts		
		Cat. No.	Per 100	Wt., Lbs. Per 100	Cat. No.	Per 100	Wt., Lbs. Per 100
3	10	391-003	\$40.00	5 3/4	393-003	\$100.00	19
6	10	391-006	40.00	5 3/4	393-006	100.00	19
10	10	391-010	40.00	5 3/4	393-010	100.00	19
15	10	391-015	40.00	5 3/4	393-015	100.00	19
20	10	391-020	40.00	5 3/4	393-020	100.00	19
25	10	391-025	40.00	5 3/4	393-025	100.00	19
30	10	391-030	40.00	5 3/4	393-030	100.00	19
35	10	391-035	80.00	1 13/4	393-035	160.00	37
40	10	391-040	80.00	1 13/4	393-040	160.00	37
45	10	391-045	80.00	1 13/4	393-045	160.00	37
50	10	391-050	80.00	1 13/4	393-050	160.00	37
60	10	391-060	80.00	1 13/4	393-060	160.00	37

**Dimensions**

Cap. Amp.	250 Volts			600 Volts		
	Lgth. Over All In.	Diam. Tube In.	Diam. Ferrule In.	Lgth. Over All In.	Diam. Tube In.	Diam. Ferrule In.
3-30	2	1/2	9/16	5	3/4	13/16
35-60	3	3/4	1 1/16	5 1/2	1	1 1/16

**Knife Blade Type**



Cap. Amp.	Car- ton	250 Volts			600 Volts		
		Cat. No.	Per 100	Wt., Lbs. Per 100	Cat. No.	Per 100	Wt., Lbs. Per 100
70	5	391-070	\$180.00	46	393-070	\$360.00	83
80	5	391-080	180.00	46	393-080	360.00	83
90	5	391-090	180.00	46	393-090	360.00	83
100	5	391-100	180.00	46	393-100	360.00	83
110	1	391-110	400.00	109	393-110	700.00	183
125	1	391-125	400.00	109	393-125	700.00	183
150	1	391-150	400.00	109	393-150	700.00	183
175	1	391-175	400.00	109	393-175	700.00	183
200	1	391-200	400.00	109	393-200	700.00	183
225	1	391-225	720.00	266	393-225	1400.00	373
250	1	391-250	720.00	266	393-250	1400.00	373
300	1	391-300	720.00	266	393-300	1400.00	373
350	1	391-350	720.00	266	393-350	1400.00	373
400	1	391-400	720.00	266	393-400	1400.00	373
450	1	391-450	1100.00	389	393-450	2000.00	573
500	1	391-500	1100.00	389	393-500	2000.00	573
600	1	391-600	1100.00	389	393-600	2000.00	573

**Dimensions**

Cap. Amp.	250 Volts				600 Volts			
	Lgth. Over All In.	Diam. Tube In.	Width Blade In.	Thick. Blade In.	Lgth. Over All In.	Diam. Tube In.	Width Blade In.	Thick. Blade In.
70-100	5 7/8	1	3/4	1/8	7 7/8	1 1/4	3/4	3/16
110-200	7 1/4	1 1/2	1 1/8	3/16	9 5/8	1 3/4	1 1/8	3/16
225-400	9 5/8	2	1 5/8	1/4	11 5/8	2 1/2	1 5/8	1/4
450-600	10 3/8	2 1/2	2	1/4	13 3/8	3	2	1/4

**Jefferson Super-Lag Renewable Links**

Care should be taken to insure clean contact surfaces between the copper blades, renewals and washers. The nut should always be drawn up tight.

**Ferrule Type**



Cat. No.	250 Volts		Wt., Lbs. Per 100
	Per 100	Cap. Amp.	
392-003	\$2.00	3	100
392-006	2.00	6	100
392-010	2.00	10	100
392-015	2.00	15	100
392-020	2.00	20	100
392-025	2.00	25	100
392-030	2.00	30	100
392-035	4.00	35	100
392-040	4.00	40	100
392-045	4.00	45	100
392-050	4.00	50	100
392-060	4.00	60	100

Cat. No.	600 Volts		Wt., Lbs. Per 100
	Per 100	Cap. Amp.	
394-003	\$5.00	3	100
394-006	5.00	6	100
394-010	5.00	10	100
394-015	5.00	15	100
394-020	5.00	20	100
394-025	5.00	25	100
394-030	5.00	30	100
394-035	8.00	35	100
394-040	8.00	40	100
394-045	8.00	45	100
394-050	8.00	50	100
394-060	8.00	60	100

**Knife Blade Type**



Cat. No.	250 Volts		Wt., Lbs. Per 100
	Per 100	Cap. Amp.	
392-070	\$9.00	70	50
392-080	9.00	80	50
392-090	9.00	90	50
392-100	9.00	100	50
392-110	20.00	110	25
392-125	20.00	125	25
392-150	20.00	150	25
392-175	20.00	175	25
392-200	20.00	200	25
392-225	36.00	225	25
392-250	36.00	250	25
392-300	36.00	300	25
392-350	36.00	350	25
392-400	36.00	400	25
392-450	55.00	450	10
392-500	55.00	500	10
392-600	55.00	600	10

Cat. No.	600 Volts		Wt., Lbs. Per 100
	Per 100	Cap. Amp.	
394-070	\$18.00	70	50
394-080	18.00	80	50
394-090	18.00	90	50
394-100	18.00	100	50
394-110	35.00	110	25
394-125	35.00	125	25
394-150	35.00	150	25
394-175	35.00	175	25
394-200	35.00	200	25
394-225	70.00	225	25
394-250	70.00	250	25
394-300	70.00	300	25
394-350	70.00	350	25
394-400	70.00	400	25
394-450	100.00	450	10
394-500	100.00	500	10
394-600	100.00	600	10

## Union Renewable Fuses

250 and 600 Volts  
Ferrule Type



3 to 60 Amperes

Only three simple parts, the absence of loose washers, both ends open for inspection and cleaning, and the link bent at one end which automatically adjusts it to the proper length are features that make the new ferrule type fuse quick and easy to renew.

250 Volts				600 Volts			
Amperes	Carton	Cat. No.	Per 100	Wt. Lbs. 10 Full Cartons	Cat. No.	Per 100	Wt. Lbs. 10 Full Cartons
3	10	380-003	\$40.00	6 1/2	382-003	\$100.00	18 1/2
6	10	380-006	40.00	6 1/2	382-006	100.00	18 1/2
10	10	380-010	40.00	6 1/2	382-010	100.00	18 1/2
15	10	380-015	40.00	6 1/2	382-015	100.00	18 1/2
20	10	380-020	40.00	6 1/2	382-020	100.00	18 1/2
25	10	380-025	40.00	6 1/2	382-025	100.00	18 1/2
30	10	380-030	40.00	6 1/2	382-030	100.00	18 1/2
35	10	380-035	80.00	14	382-035	160.00	36
40	10	380-040	80.00	14	382-040	160.00	36
45	10	380-045	80.00	14	382-045	160.00	36
50	10	380-050	80.00	14	382-050	160.00	36
60	10	380-060	80.00	14	382-060	160.00	36

Dimensions			
250 Volts		600 Volts	
Amperes	Size Over All Inches	Size Tube Inches	Size Tube Inches
1-30	2	1/2	3/4
35-60	3	3/4	1

### Knife Blade Type



70-600 Amperes

An exclusive feature of the knife-blade type fuse is the longitudinal vents which are cut in the fibre casing at both ends just inside the brass ends and which lead to the inside of the casing. When the link blows, the pressure of the volatilizing metal is relieved, and because of the low pressure area at the vents, the molten fuse metal is not forced into the cap and the stud threads.

A rugged fibre bar which will not warp holds the knife-blade assembly in perfect alignment and assures correct assembly of the fuse. Brass ends are riveted to fibre case.

250 Volts				600 Volts			
Amperes	Carton	Cat. No.	Per 100	Wt. Lbs. 10 Full Cartons	Cat. No.	Per 100	Wt. Lbs. 10 Full Cartons
70	5	380-070	\$180.00	19 1/4	382-070	\$360.00	35
80	5	380-080	180.00	19 1/4	382-080	360.00	35
90	5	380-090	180.00	19 1/4	382-090	360.00	35
100	5	380-100	180.00	19 1/4	382-100	360.00	35
110	1	380-110	400.00	10	382-110	700.00	14
125	1	380-125	400.00	10	382-125	700.00	14
150	1	380-150	400.00	10	382-150	700.00	14
175	1	380-175	400.00	10	382-175	700.00	14
200	1	380-200	400.00	10	382-200	700.00	14
225	1	380-225	720.00	22	382-225	1400.00	35
250	1	380-250	720.00	22	382-250	1400.00	35
300	1	380-300	720.00	22	382-300	1400.00	35
350	1	380-350	720.00	22	382-350	1400.00	35
400	1	380-400	720.00	22	382-400	1400.00	35
450	1	380-450	1100.00	35	382-450	2000.00	52
500	1	380-500	1100.00	35	382-500	2000.00	52
600	1	380-600	1100.00	35	382-600	2000.00	52

Dimensions			
250 Volts		600 Volts	
Amperes	Length Over All Inches	Size Tube Inches	Size Tube Inches
61-100	5 7/8	1	1 1/4
101-200	7 1/8	1 1/2	1 3/4
201-400	8 5/8	2	2 1/2
401-600	10 3/8	2 1/2	3

## Union Renewal Links



Ferrule Type  
250 Volts

Cat. No.	Amperes	Price per 100	Carton	Wt. Lbs. 10 Full Cartons
381-003	3	\$1.80	100	5/8
381-006	6	1.80	100	5/8
381-010	10	1.80	100	5/8
381-015	15	1.80	100	5/8
381-020	20	1.80	100	5/8
381-025	25	1.80	100	5/8
381-030	30	1.80	100	5/8
381-035	35	3.60	100	1 1/16
381-040	40	3.60	100	1 1/16
381-045	45	3.60	100	1 1/16
381-050	50	3.60	100	1 1/16
381-060	60	3.60	100	1 1/16
381-070	70	8.10	50	2 3/4
381-080	80	8.10	50	2 3/4
381-090	90	8.10	50	2 3/4
381-100	100	8.10	50	2 3/4
381-110	110	18.00	25	3 5/8
381-125	125	18.00	25	3 5/8
381-150	150	18.00	25	3 5/8
381-175	175	18.00	25	3 5/8
381-200	200	18.00	25	3 5/8
381-225	225	32.40	10	1 1/2
381-250	250	32.40	10	1 1/2
381-300	300	32.40	10	1 1/2
381-350	350	32.40	10	1 1/2
381-400	400	32.40	10	1 1/2
381-450	450	49.50	5	2
381-500	500	49.50	5	2
381-600	600	49.50	5	2

### 600 Volts

383-003	3	\$4.50	100	3 3/4
383-006	6	4.50	100	3 3/4
383-010	10	4.50	100	3 3/4
383-015	15	4.50	100	3 3/4
383-020	20	4.50	100	3 3/4
383-025	25	4.50	100	3 3/4
383-030	30	4.50	100	3 3/4
383-035	35	7.20	100	10 1/4
383-040	40	7.20	100	10 1/4
383-045	45	7.20	100	10 1/4
383-050	50	7.20	100	10 1/4
383-060	60	7.20	100	10 1/4
383-070	70	16.20	50	7
383-080	80	16.20	50	7
383-090	90	16.20	50	7
383-100	100	16.20	50	7
383-110	110	31.50	25	10 1/2
383-125	125	31.50	25	10 1/2
383-150	150	31.50	25	10 1/2
383-175	175	31.50	25	10 1/2
383-200	200	31.50	25	10 1/2
383-225	225	63.00	10	5
383-250	250	63.00	10	5
383-300	300	63.00	10	5
383-350	350	63.00	10	5
383-400	400	63.00	10	5
383-450	450	90.00	5	5 5/8
383-500	500	90.00	5	5 5/8
383-600	600	90.00	5	5 5/8

### To Make Up Links Over 200 Amperes Use:

For Links Amps.	No. of Links	Size Links Amps.	For Links Amps.	No. of Links	Size Links Amps.	For Links Amps.	No. of Links	Size Links Amps.
225	2	112 1/2	350	2	175	500	4	*125
250	2	125	400	2	200	600	4	*150
300	2	150	450	4	*112 1/2	...	...	...

\*Where 4 links are required, 2 links separated by spacer washers should be placed on each side of copper blade.

**Union Indicating Enclosed Fuses**  
Ferrule Contact Style



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
3	10	386-003	\$.15	4	387-003	\$.50	14 3/4
6	10	386-006	.15	4	387-006	.50	14 3/4
10	10	386-010	.15	4	387-010	.50	14 3/4
15	10	386-015	.15	4	387-015	.50	14 3/4
20	10	386-020	.15	4	387-020	.50	14 3/4
25	10	386-025	.15	4	387-025	.50	14 3/4
30	10	386-030	.15	4	387-030	.50	14 3/4
35	10	386-035	.30	10 1/2	387-035	.80	24 3/4
40	10	386-040	.30	10 1/2	387-040	.80	24 3/4
45	10	386-045	.30	10 1/2	387-045	.80	24 3/4
50	10	386-050	.30	10 1/2	387-050	.80	24 3/4
60	10	386-060	.30	10 1/2	387-060	.80	24 3/4

**Dimensions**

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
1-30	2	1/2	5	3/4
35-60	3	3/4	5 1/2	1

**Knife-Blade Contact Style**



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
70	5	386-070	\$.90	15	387-070	\$1.80	27
80	5	386-080	.90	15	387-080	1.80	27
90	5	386-090	.90	15	387-090	1.80	27
100	5	386-100	.90	15	387-100	1.80	27
110	1	386-110	2.00	7 3/4	387-110	3.50	12 1/2
125	1	386-125	2.00	7 3/4	387-125	3.50	12 1/2
150	1	386-150	2.00	7 3/4	387-150	3.50	12 1/2
175	1	386-175	2.00	7 3/4	387-175	3.50	12 1/2
200	1	386-200	2.00	7 3/4	387-200	3.50	12 1/2
225	1	386-225	3.60	17 1/4	387-225	7.00	29
250	1	386-250	3.60	17 1/4	387-250	7.00	29
300	1	386-300	3.60	17 1/4	387-300	7.00	29
350	1	386-350	3.60	17 1/4	387-350	7.00	29
400	1	386-400	3.60	17 1/4	387-400	7.00	29
450	1	386-450	5.50	28	387-450	10.00	43
500	1	386-500	5.50	28	387-500	10.00	43
600	1	386-600	5.50	28	387-600	10.00	43
* 700	1	386-700	12.00	50 1/2	387-700	15.00	77 1/2
* 800	1	386-800	12.00	50 1/2	387-800	15.00	77 1/2
* 900	1	386-900	15.00	72 1/2	387-900	18.00	92 1/2
*1000	1	386-999	15.00	72 1/2	387-999	18.00	92 1/2

**Dimensions**

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
61-100	5 7/8	1	7 7/8	1 1/4
101-200	7 1/8	1 1/2	9 5/8	1 3/4
201-400	8 5/8	2	11 5/8	2 1/2
401-600	10 3/8	2 1/2	13 3/8	3
601-800	11 1/2	3	14 1/2	3 1/2
801-1000	12 5/8	3 1/2	15 5/8	4

\*The National Electrical Code does not cover any type of 250-volt enclosed fuse above 600 amperes. Fuses of higher capacity are not listed as Standard by the Underwriters' Laboratories but are built to the same strict standards as those so listed.

**Gem Non-Indicating Enclosed Fuses**  
Ferrule Style



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
1	10	384-001	\$.15	4	385-001	\$.50	14 3/4
3	10	384-003	.15	4	385-003	.50	14 3/4
6	10	384-006	.15	4	385-006	.50	14 3/4
10	10	384-010	.15	4	385-010	.50	14 3/4
15	10	384-015	.15	4	385-015	.50	14 3/4
20	10	384-020	.15	4	385-020	.50	14 3/4
25	10	384-025	.15	4	385-025	.50	14 3/4
30	10	384-030	.15	4	385-030	.50	14 3/4
25	10	384-035	.30	10 1/2	385-035	.80	24 3/4
40	10	384-040	.30	10 1/2	385-040	.80	24 3/4
45	10	384-045	.30	10 1/2	385-045	.80	24 3/4
50	10	384-050	.30	10 1/2	385-050	.80	24 3/4
60	10	384-060	.30	10 1/2	385-060	.80	24 3/4

**Dimensions**

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
1-30	2	1/2	5	3/4
35-60	3	3/4	5 1/2	1

**Knife-Blade Style**



Amp.	Car-ton	250 Volts			600 Volts		
		No.	Each	Wt. Lbs. 10 Full Cartons	No.	Each	Wt. Lbs. 10 Full Cartons
70	5	384-070	\$.90	15	385-070	\$1.80	27
80	5	384-080	.90	15	385-080	1.80	27
90	5	384-090	.90	15	385-090	1.80	27
100	5	384-100	.90	15	385-100	1.80	27
110	1	384-110	2.00	7 3/4	385-110	3.50	12 1/2
125	1	384-125	2.00	7 3/4	385-125	3.50	12 1/2
150	1	384-150	2.00	7 3/4	385-150	3.50	12 1/2
175	1	384-175	2.00	7 3/4	385-175	3.50	12 1/2
200	1	384-200	2.00	7 3/4	385-200	3.50	12 1/2
225	1	384-225	3.60	17 1/4	385-225	7.00	29
250	1	384-250	3.60	17 1/4	385-250	7.00	29
300	1	384-300	3.60	17 1/4	385-300	7.00	29
350	1	384-350	3.60	17 1/4	385-350	7.00	29
400	1	384-400	3.60	17 1/4	385-400	7.00	29
450	1	384-450	5.50	28	385-450	10.00	43
500	1	384-500	5.50	28	385-500	10.00	43
600	1	384-600	5.50	28	385-600	10.00	43
* 700	1	384-700	12.00	50 1/2	385-700	15.00	77 1/2
* 800	1	384-800	12.00	50 1/2	385-800	15.00	77 1/2
* 900	1	384-900	15.00	72 1/2	385-900	18.00	92 1/2
*1000	1	384-999	15.00	72 1/2	385-999	18.00	92 1/2

**Dimensions**

Amperes	250 Volts		600 Volts	
	Length Over All Inches	Diameter Tube Inches	Length Over All Inches	Diameter Tube Inches
61-100	5 7/8	1	7 7/8	1 1/4
101-200	7 1/8	1 1/2	9 5/8	1 3/4
201-400	8 5/8	2	11 5/8	2 1/2
401-600	10 3/8	2 1/2	13 3/8	3
601-800	11 1/2	3	14 1/2	3 1/2
801-1000	12 5/8	3 1/2	15 5/8	4

\*The National Electrical Code does not cover any type of 250-volt enclosed fuse above 600 amp. Fuses of higher capacity are not listed as Standard by the Underwriters' Laboratories but are built to the same strict standards as those so listed.

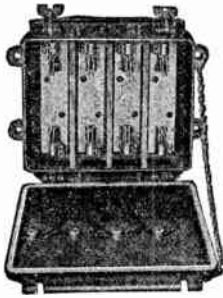


## Colt-Noark Water-Tight Fuse Boxes

For Potentials Not Exceeding 250 Volts



No. 3670



No. 3190

Each box requires a fitting at each end.

### 2 Poles—All Fusible

Cat. No.	Each	Amps.	Type	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs.
				Lgth.	Width	Ht.		
3872	\$4.95	0-30	B	7	5	3 <sup>3</sup> / <sub>4</sub>	10	5
3873	7.15	31-60	B	8 <sup>3</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>4</sub>	5	10
3670	10.20	61-100	E	10 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	5	13
3671	21.45	101-200	E	13 <sup>3</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	5	33
3672	35.20	201-400	E	16 <sup>1</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>2</sub>	7	5	60
3673	55.00	401-600	E	19 <sup>1</sup> / <sub>4</sub>	15	8 <sup>1</sup> / <sub>2</sub>	3	74

### 3 Poles—All Fusible

3874	\$6.60	0-30	B	7	6 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	10	8
3875	8.25	31-60	B	8 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	5	11
3674	11.00	61-100	E	10 <sup>5</sup> / <sub>8</sub>	9	4 <sup>7</sup> / <sub>8</sub>	5	18
3675	26.40	101-200	E	13 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	3	43
3676	49.50	201-400	E	16 <sup>1</sup> / <sub>8</sub>	16 <sup>1</sup> / <sub>8</sub>	7	1	89
3677	82.50	401-600	E	19 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	1	120

### 3 Poles—2 Fusible—Neutral Nonfusible

3876	\$6.60	0-30	B	7	6 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	10	8
3877	8.25	31-60	B	8 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	5	11
3865	11.00	61-100	E	10 <sup>5</sup> / <sub>8</sub>	9	4 <sup>7</sup> / <sub>8</sub>	5	18
3866	26.40	101-200	E	13 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	3	43
3867	49.50	201-400	E	16 <sup>1</sup> / <sub>8</sub>	16 <sup>1</sup> / <sub>8</sub>	7	1	89
3868	82.50	401-600	E	19 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	1	120

### 4 Poles—All Fusible

3190	\$19.80	61-100	E	10 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	5	22
3191	39.60	101-200	E	13 <sup>3</sup> / <sub>8</sub>	16	6 <sup>1</sup> / <sub>4</sub>	3	49
3192	69.30	201-400	E	16 <sup>1</sup> / <sub>8</sub>	20	7	1	90
3193	104.50	401-600	E	19 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	1	143

### 4 Poles—3 Fusible—Neutral Nonfusible

3194	\$19.80	61-100	E	10 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	5	22
3195	39.60	101-200	E	13 <sup>3</sup> / <sub>8</sub>	16	6 <sup>1</sup> / <sub>4</sub>	3	49
3196	69.30	201-400	E	16 <sup>1</sup> / <sub>8</sub>	20	7	1	90
3197	104.50	401-600	E	19 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	1	143

## For Potentials Not Exceeding 600 Volts

### 2 Poles—All Fusible

5889	\$11.00	0-30	B	11	7 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	5	15
5890	14.30	31-60	B	12 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub>	5	20
5760	17.60	61-100	E	14 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>4</sub>	5	4	29
5761	29.15	101-200	E	17 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>8</sub>	6	4	50
5762	55.00	201-400	E	20 <sup>1</sup> / <sub>2</sub>	15	7	8	74
5763	93.50	401-600	E	26	16 <sup>1</sup> / <sub>4</sub>	9	1	146

### 3 Poles—All Fusible

5891	\$14.30	0-30	B	11	9 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>4</sub>	5	19
5892	18.15	31-60	B	12 <sup>1</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	5	27
5764	22.00	61-100	E	14 <sup>3</sup> / <sub>4</sub>	13 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	4	39
5765	35.20	101-200	E	17 <sup>3</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4	64
5766	71.50	201-400	E	20 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	1	112
5767	110.00	401-600	E	26	21 <sup>1</sup> / <sub>4</sub>	9	1	221

## Colt-Noark Water-Tight Service Boxes

For Potentials Not Exceeding 250 Volts



No. 3678



No. 3682

### 2 Poles—All Fusible

Cat. No.	Cap. Amps.	Type	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. Each	Price Each
			Lgth.	Width	Ht.			
3828	0-30	B	7	5	3 <sup>3</sup> / <sub>4</sub>	10	5 <sup>1</sup> / <sub>2</sub>	\$7.70
3829	31-60	B	8 <sup>3</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>4</sub>	5	10 <sup>1</sup> / <sub>2</sub>	10.45
3678	61-100	E	10 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	5	15	16.50
3679	101-200	E	13 <sup>3</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	5	34	25.85
3680	201-400	E	16 <sup>1</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>2</sub>	7	5	62	41.80
3681	401-600	E	19 <sup>1</sup> / <sub>4</sub>	15	8 <sup>1</sup> / <sub>2</sub>	3	76	66.00

### 3 Poles—All Fusible

3830	0-30	B	7	6 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	10	8 <sup>1</sup> / <sub>2</sub>	\$9.65
3831	31-60	B	8 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	5	11 <sup>1</sup> / <sub>2</sub>	13.20
3682	61-100	E	10 <sup>5</sup> / <sub>8</sub>	9	4 <sup>7</sup> / <sub>8</sub>	5	19 <sup>1</sup> / <sub>2</sub>	17.60
3683	101-200	E	13 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	3	45	31.90
3684	201-400	E	16 <sup>1</sup> / <sub>8</sub>	16 <sup>1</sup> / <sub>8</sub>	7	1	93	55.00
3685	401-600	E	19 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	1	126	93.50

### 3 Poles—2 Fusible—Neutral Nonfusible

3870	0-30	B	7	6 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	10	8 <sup>1</sup> / <sub>2</sub>	\$9.65
3871	31-60	B	8 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	5	11 <sup>1</sup> / <sub>2</sub>	13.20
3661	61-100	E	10 <sup>5</sup> / <sub>8</sub>	9	4 <sup>7</sup> / <sub>8</sub>	5	19 <sup>1</sup> / <sub>2</sub>	17.60
3662	101-200	E	13 <sup>3</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	3	45	31.90
3663	201-400	E	16 <sup>1</sup> / <sub>8</sub>	16 <sup>1</sup> / <sub>8</sub>	7	1	93	55.00
3664	401-600	E	19 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	1	126	93.50

### 4 Poles—All Fusible

3182	61-100	E	10 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	5	24	\$27.50
3183	101-200	E	13 <sup>3</sup> / <sub>8</sub>	16	6 <sup>1</sup> / <sub>4</sub>	3	52	52.80
3184	201-400	E	16 <sup>1</sup> / <sub>8</sub>	20	7	1	94	82.50
3185	401-600	E	19 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	1	148	126.50

### 4 Poles—3 Fusible—Neutral Nonfusible

3186	61-100	E	10 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	5	24	\$27.50
3187	101-200	E	13 <sup>3</sup> / <sub>8</sub>	16	6 <sup>1</sup> / <sub>4</sub>	3	52	52.80
3188	201-400	E	16 <sup>1</sup> / <sub>8</sub>	20	7	1	94	82.50
3189	401-600	E	19 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	1	148	126.50

## Colt-Noark Water-Tight Service Boxes

For Potentials Not Exceeding 600 Volts

Nos. 5868, 5869, 5870 and 5871 type B, all others type E.

### 2 Poles—All Fusible

Cat. No.	Each	Amps.	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lbs. Each
			Lgth.	Width	Ht.		
5868	\$13.75	0-30	11	7 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	5	16
5869	17.35	31-60	12 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	5	22
5770	23.65	61-100	14 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	4	30 <sup>1</sup> / <sub>2</sub>
5771	35.20	101-200	17 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	4	51
5772	66.00	201-400	20 <sup>3</sup> / <sub>8</sub>	15	7 <sup>1</sup> / <sub>2</sub>	1	76 <sup>1</sup> / <sub>2</sub>
5773	110.00	401-600	26	16 <sup>1</sup> / <sub>4</sub>	9	1	150

### 3 Poles—All Fusible

5870	17.90	0-30	11	9 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>4</sub>	5	20
5871	22.00	31-60	12 <sup>3</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	5	30
5774	26.95	61-100	14 <sup>3</sup> / <sub>4</sub>	13 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	4	41
5775	41.80	101-200	17 <sup>3</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	4	66
5776	82.50	201-400	20 <sup>3</sup> / <sub>8</sub>	19 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	1	114
5777	137.50	401-600	26	21 <sup>1</sup> / <sub>4</sub>	9	1	225



No. 5871



**Colt-Noark Straight-away Conduit Fittings**  
 For Water-Tight Service and Fuse Boxes  
 For Potentials Not Exceeding 250 Volts

Fittings Cat. No.	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	Price Each	THESE FITTINGS FOR		Amps.	Type	Poles
					Service Box	Fuse Box			
3832	1	20	3/4	\$1.05	3828	3872	0-30	B	2
3833	1 1/4	10	1 1/4	1.20	3829	3873	31-60	B	2
3702	1 1/2	10	1 1/2	1.75	3678	3670	61-100	E	2
3703	2	10	3	2.55	3679	3671	101-200	E	2
3704	2 1/2	10	4	3.60	3680	3672	201-400	E	2
3705	3	6	8	5.50	3681	3673	401-600	E	2
3834	1	20	1 1/4	1.20	3830	3874	0-30	B	3
3835	1 1/4	10	1 3/4	1.65	3870	3876			
3831					3831	3875	31-60	B	3
3871					3871	3877			
3706	1 1/2	10	2	1.95	3682	3674	61-100	E	3
3661					3661	3865			
3707	2	6	4	3.30	3683	3675	101-200	E	3
3662					3662	3866			
3708	2 1/2	2	5 1/2	4.95	3684	3676	201-400	E	3
3663					3663	3867			
3709	3	2	10	7.15	3685	3677	401-600	E	3
3664					3664	3868			
3935	1 1/2	10	4	2.75	3182	3190	61-100	E	4
3936	2	10	4	2.75	3186	3194			
3937	2 1/2	10	4	2.75					
3938	2	6	8	4.40	3183	3191	101-200	E	4
3939	2 1/2	6	8	4.40	3187	3195			
3940	3	6	8	4.40					
3941	3	2	14	6.60	3184	3192	201-400	E	4
3942	3 1/2	2	14	6.60	3188	3196			
3943	4	2	14	6.60					
3944	4	2	22	13.20	3185	3193	401-600	E	4
3945	4 1/2	2	22	13.20	3189	3197			
3946	5	2	22	13.20					

**Colt-Noark Right or Left-Hand Conduit Fittings For Water-Tight Service and Fuse Boxes**  
 For Potentials Not Exceeding 250 Volts



No. 3710

Fittings Cat. No.	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	Price Each	THESE FITTINGS FOR		Amps.	Type	Poles
					Service Box	Fuse Box			
3836	1	20	3/4	\$1.05	3828	3872	0-30	B	2
3837	1 1/4	10	1	1.20	3829	3873	31-60	B	2
3710	1 1/2	10	1 1/4	1.75	3678	3670	61-100	E	2
3711	2	10	2 1/4	2.55	3679	3671	101-200	E	2
3712	2 1/2	10	3 1/2	3.60	3680	3672	201-400	E	2
3713	3	6	6	5.50	3681	3673	401-600	E	2
3838	1	20	3/4	1.20	3830	3874	0-30	B	3
38370					3870	3876			
3839	1 1/4	10	1	1.65	3831	3875	31-60	B	3
3871					3871	3877			
3714	1 1/2	10	1 3/4	1.95	3682	3674	61-100	E	3
3661					3661	3865			
3715	2	6	4	3.30	3683	3675	101-200	E	3
3662					3662	3866			
3716	2 1/2	2	6	4.95	3684	3676	201-400	E	3
3663					3663	3867			
3717	3	2	12	7.15	3685	3677	401-600	E	3
3664					3664	3868			

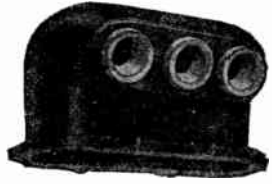
**Colt-Noark Conduit Fittings for Water-Tight Service and Fuse Boxes**  
 For Potentials Not Exceeding 250 Volts



No. 3718

Fittings Cat. No.	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	THESE FITTINGS FOR		Amps.	Type	Poles	
				Service Box	Fuse Box				
3780	1	20	3/4	\$1.05	3828	3872	0-30	B	2
3781	1.20	1 1/4	10	1	3829	3873	31-60	B	2
3718	1.75	1 1/2	10	1 1/2	3678	3670	61-100	E	2
3719	2.55	2	10	2	3679	3671	101-200	E	2
3720	3.60	2 1/2	10	3 1/4	3680	3672	201-400	E	2
3721	5.50	3	6	5	3681	3673	401-600	E	2
3782	1.20	1	20	1	3830	3874	0-30	B	3
3870					3870	3876			
3783	1.65	1 1/4	10	1	3831	3875	31-60	B	3
3871					3871	3877			
3722	1.95	1 1/2	10	1 1/2	3682	3674	61-100	E	3
3661					3661	3865			
3723	3.30	2	6	3 1/4	3683	3675	101-200	E	3
3662					3662	3866			
3724	4.95	2 1/2	2	5 1/4	3684	3676	201-400	E	3
3663					3663	3867			
3730	7.15	3	2	8	3865	3677	401-600	E	3
3664					3664	3868			

**Back Entrance Conduit Fitting**



No. 3744

Fittings Cat. No.	Price Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	THESE FITTINGS FOR		Amps.	Type	Poles
					Service Box	Fuse Box			
3784	\$2.00	20	1 1/2		3828	3872	0-30	B	2
3785	2.65	10	1 3/4		3829	3873	31-60	B	2
3740	3.30	10	2		3678	3670	61-100	E	2
3741	4.40	10	4 1/4		3679	3671	101-200	E	2
*3742	6.60	10	7 1/4		3680	3672	201-400	E	2
3743	11.00	6	9		3681	3673	401-600	E	2
3786	2.75	20	1 3/4		3830	3874	0-30	B	3
3870					3870	3876			
3787	3.05	10	2 1/4		3831	3875	31-60	B	3
3871					3871	3877			
*3744	4.15	10	3 1/4		3682	3674	61-100	E	3
3661					3661	3865			
*3745	5.25	6	7 3/4		3683	3675	101-200	E	3
3662					3662	3866			
3746	7.70	2	9 3/4		3684	3676	201-400	E	3
3663					3663	3867			
3747	13.75	2	15		3685	3677	401-600	E	3
3664					3664	3868			
*3947	5.50	10	6		3182	3190	61-100	E	4
3186					3186	3194			
*3948	8.25	6	11		3183	3191	101-200	E	4
3187					3187	3195			
*3949	14.85	2	20		3184	3192	201-400	E	4
3188					3188	3196			

**Entrance Hoods**



No. 3983

Fittings Cat. No.	Price Each	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	THESE FITTINGS FOR		Amps.	Type	Poles
					Service Box	Fuse Box			
3975	1.00	20	3/8		3828	3872	0-30	B	2
3976	1.10	10	1/2		3829	3873	31-60	B	2
3977	1.40	10	3/8		3678	3670	61-100	E	2
3978	1.95	10	1		3679	3671	101-200	E	2
3979	2.20	10	1 1/4		3680	3672	201-400	E	2
3980	2.75	6	2 1/2		3681	3673	401-600	E	2
3981	1.40	20	1 1/2		3830	3874	0-30	B	3
3870					3870	3876			
3982	1.50	10	5/8		3831	3875	31-60	B	3
3871					3871	3877			
3983	1.65	10	3/4		3682	3674	61-100	E	3
3661					3661	3865			
3984	2.50	6	1 1/2		3683	3675	101-200	E	3
3662					3662	3866			
3985	3.05	2	2 1/2		3684	3676	201-400	E	3
3663					3663	3867			
3986	3.85	2	3 1/4		3685	3677	401-600	E	3
3664					3664	3868			
3987	2.20	10	1 3/8		3182	3190	61-100	E	4
3186					3186	3194			
3988	3.05	6	2		3183	3191	101-200	E	4
3187					3187	3195			
3989	3.60	2	3 1/4		3184	3192	201-400	E	4
3188					3188	3196			
3990	5.50	2	4 1/4		3185	3193	401-600	E	4
3189					3189	3197			

**Bushing Plates**

## Colt-Noark Conduit Fittings for Water-Tight Service and Fuse Boxes

For Potentials Not Exceeding 600 Volts  
Straightaway Conduit Fittings

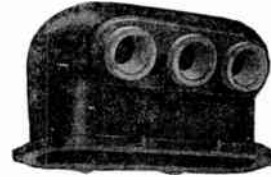


No. 5784

Fittings Cat. No.	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	Price Each	THESE FITTINGS FOR—			
					CAT. No. Service Box	Fuse Box	Amps.	Type Poles
5872	1	10	1	\$1.35	5868	5889	0-30	B 2
5873	1 1/4	10	1 1/2	1.65	5869	5890	31-60	B 2
5780	1 1/2	8	1 1/2	2.20	5770	5760	61-100	E 2
5781	2	8	2 3/4	3.05	5771	5761	101-200	E 2
5782	2 1/2	6	4 1/4	4.70	5772	5762	201-400	E 2
5783	3	2	6 1/4	7.15	5773	5763	401-600	E 2
5874	1	10	1 1/4	1.50	5870	5891	0-30	B 3
5875	1 1/4	10	2 1/2	1.95	5871	5892	31-60	B 3
5784	1 1/2	8	3 1/2	2.75	5774	5764	61-100	E 3
5785	2	8	4 3/4	3.85	5775	5765	101-200	E 3
5786	2 1/2	2	6	6.05	5776	5766	201-400	E 3
5787	3	2	11	9.90	5777	5767	401-600	E 3

## Colt-Noark Conduit Fittings for Water-Tight Service and Fuse Boxes

For Potentials Not Exceeding 600 Volts  
Entrance Hoods



No. 5824

Fittings Cat. No.	Each	Std. Pkg.	Wt. Lbs. Each	THESE FITTINGS FOR—			
				CAT. No. Service Box	Fuse Box	Amps.	Type Poles
5884	\$2.20	10	1 3/4	5868	5889	0-30	B 2
5885	2.75	10	2	5869	5890	31-60	B 2
5820	3.85	8	2 1/4	5770	5760	61-100	E 2
5821	5.50	8	4 1/4	5771	5761	101-200	E 2
5822	8.25	2	6 1/2	5772	5762	201-400	E 2
5823	13.75	2	8 3/4	5773	5763	401-600	E 2
5886	3.05	10	2	5870	5891	0-30	B 3
5887	3.30	10	3 1/4	5871	5892	31-60	B 3
5824	4.40	8	3 3/4	5774	5764	61-100	E 3
5825	6.05	8	6 1/2	5775	5765	101-200	E 3
5826	9.35	2	10	5776	5766	201-400	E 3
5827	16.50	2	12 1/2	5777	5767	401-600	E 3

## Right or Left Hand Conduit Fittings



No. 5794

Fittings Cat. No.	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	Price Each	THESE FITTINGS FOR—			
					CAT. No. Service Box	Fuse Box	Amps.	Type Poles
5876	1	10	1	\$1.35	5868	5889	0-30	B 2
5877	1 1/4	10	1 1/4	1.65	5869	5890	31-60	B 2
5790	1 1/2	8	1 1/4	2.20	5770	5760	61-100	E 2
5791	2	8	2 1/2	3.05	5771	5761	101-200	E 2
5792	2 1/2	6	4 1/2	4.70	5772	5762	201-400	E 2
5793	3	2	5 3/4	7.15	5773	5763	401-600	E 2
5878	1	10	1 1/4	1.50	5870	5891	0-30	B 3
5879	1 1/4	10	1 3/4	1.95	5871	5892	31-60	B 3
5794	1 1/2	8	2	2.75	5774	5764	61-100	E 3
5795	2	8	4	3.85	5775	5765	101-200	E 3
5796	2 1/2	2	7	6.05	5776	5766	201-400	E 3
5797	3	2	8 1/4	9.90	5777	5767	401-600	E 3

## Bushing Plates



No. 5983

5975	\$1.10	10	1/2	5868	5889	0-30	B 2
5976	1.35	10	5/8	5869	5890	31-60	B 2
5977	1.65	8	3/4	5770	5760	61-100	E 2
5978	2.20	8	1 1/8	5771	5761	101-200	E 2
5979	3.05	2	2	5772	5762	201-400	E 2
5980	3.85	2	2 3/4	5773	5763	401-600	E 2
5981	1.45	10	5/8	5870	5891	0-30	B 3
5982	1.65	10	7/8	5871	5892	31-60	B 3
5983	1.95	8	1	5774	5764	61-100	E 3
5984	2.75	8	1 3/4	5775	5765	101-200	E 3
5985	3.60	2	2 3/4	5776	5766	201-400	E 3
5986	4.95	2	3 3/4	5777	5767	401-600	E 3

## Back Entrance Conduit Fittings



No. 5804

Fittings Cat. No.	Size Pipe Thread In.	Std. Pkg.	Wt. Lbs. Each	Price Each	THESE FITTINGS FOR—			
					CAT. No. Service Box	Fuse Box	Amps.	Type Poles
5880	1	10	3/4	\$1.35	5868	5889	0-30	B 2
5881	1 1/4	10	1 1/4	1.65	5869	5890	31-60	B 2
5800	1 1/2	8	1 1/4	2.20	5770	5760	61-100	E 2
5801	2	8	2 1/2	3.05	5771	5761	101-200	E 2
5802	2 1/2	6	4	4.70	5772	5762	201-400	E 2
5803	3	2	5 3/4	7.15	5773	5763	401-600	E 2
5882	1	10	1 1/4	1.50	5870	5891	0-30	B 3
5883	1 1/4	10	1 3/4	1.95	5871	5892	31-60	B 3
5804	1 1/2	8	2 1/2	2.75	5774	5764	61-100	E 3
5805	2	8	3 1/2	3.85	5775	5765	101-200	E 3
5806	2 1/2	2	7	6.05	5776	5766	201-400	E 3
5807	3	2	8	9.90	5777	5767	401-600	E 3

## Gaskets



No. 5810

Fittings Cat. No.	Each	Std. Pkg.	Wt. Lbs. Std. Pkg.	THESE FITTINGS FOR—			
				CAT. No. Service Box	Fuse Box	Amps.	Type Poles
5665	\$.35	10	1/4	5868	5889	0-30	B 2
5666	.40	10	3/8	5869	5890	31-60	B 2
5810	.50	8	3/4	5770	5760	61-100	E 2
5811	.60	8	1	5771	5761	101-200	E 2
5812	.85	2	1 1/4	5772	5762	201-400	E 2
5813	1.10	2	3/8	5773	5763	401-600	E 2
5667	.40	10	1/4	5870	5891	0-30	B 3
5668	.50	10	3/8	5871	5892	31-60	B 3
5814	.55	8	3/4	5774	5764	61-100	E 3
5815	.65	8	1	5775	5765	101-200	E 3
5816	.95	2	3/8	5776	5766	201-400	E 3
5814	1.40	2	1 1/2	5777	5767	401-600	E 3



Columbia Type A Surface Cabinets

Columbia Type A Surface Cabinets

For Cut-Outs Service Switches and Panel Boards

For Cut-Outs, Service Switches and Panel Boards



**CONDUIT DRILLING.**—Cabinets are regularly furnished with knockouts for 1/2-inch conduit spaced evenly on all sides. Specify if boxes are wanted without knockouts. For special conduit drilling, a small extra charge is made. Knockouts other than 1/2-inch can be supplied if required.

**SIZES AND THICKNESS OF STEEL.**—Cabinets are listed in standard sizes and gauges (thickness). Cabinets of any size and thickness of steel up to 3/16 inch thick can be made to order.

**GALVANIZED CABINETS.**—Type A Cabinets in any size can be furnished in galvanized steel. Add 15 per cent to list prices.

**WEATHERPROOF CABINETS.**—These cabinets can be made with slant tops, rubber gaskets and solid brass catches, for exposure to the weather. Black japan or galvanized.

**HOLES FOR CUT-OUT, SWITCHES, ETC.**—Furnished at cost of one cent per hole per box. For tapped holes, add two cents per hole per box.

**BOXES WITHOUT COVERS.**—If boxes are required without covers, deduct 20 per cent from prices. A flange will be supplied on front edges for mounting a wood trim or other cover if specified on order.

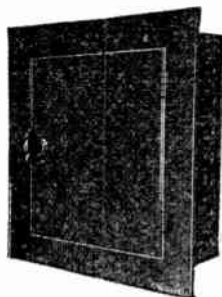
The boxes listed below are made of sheet steel of the required thickness to conform with Board of Underwriters' requirements, and bear the Underwriters' labels.

Width or Short Side Inches	Height or Long Side Inches	PRICE, EACH					
		DEPTH, INCHES					
		3	4	6	8	10	12
4 1/2	5	\$ .75					
4 1/2	9	1.10					
6	6	.90	\$ 1.10	\$ 1.33			
6	8	1.16	1.30	1.60			
6	9	1.37	1.67	2.00			
6	12	1.53	1.73	2.16			
8	8	1.33	1.56	1.90	\$ 3.25		
8	10	1.60	1.83	2.20	4.00		
8	12	2.00	2.26	2.50	4.33		
9	9	1.83	2.10	2.54	3.98		
9	12	2.13	2.40	2.89	4.77		
10	10	1.90	2.13	2.60	4.40	\$ 5.20	
10	12	2.16	2.46	2.93	4.98	5.63	
10	15	2.60	2.90	3.46	5.80	6.60	
10	18	3.03	3.36	4.00	6.67	7.53	
12	12	2.50	2.73	3.33	5.93	6.60	\$ 7.56
12	15	2.66	3.33	3.90	6.80	7.70	8.70
12	18		3.86	4.50	7.80	8.76	9.86
12	24		5.40	6.26	9.73	10.30	12.53
12	30		11.93	13.80	14.93	16.80	19.26
12	36		14.23	16.13	17.47	19.40	22.30
15	15		3.93	4.60	7.96	9.03	9.93
15	18		4.60	5.30	8.10	10.27	11.26
15	24		6.33	7.30	11.47	12.73	14.80
15	30		14.80	17.06	17.23	19.06	22.13

Width Ht. or Short Long Side In. Inches		PRICE, EACH				
		DEPTH, INCHES				
		4	6	8	10	12
15	36	\$17.16	\$18.90	\$20.10	\$22.13	\$25.40
18	18	5.30	6.06	10.37	11.53	12.76
18	21	11.93	13.90	16.02	16.93	19.10
18	24	13.53	15.63	16.96	18.70	21.00
18	30	16.90	18.53	20.04	22.30	24.63
18	36	19.80	21.60	23.64	25.90	28.60
18	40	21.66	23.70	25.80	28.23	31.00
24	24	17.00	19.36	21.00	23.12	25.33
24	30	21.23	23.13	25.07	27.30	29.86
24	36	24.83	26.73	30.10	31.63	34.80
24	40	27.00	29.50	31.83	34.50	37.33
24	44	45.93	50.36	55.07	58.70	63.50
24	48	49.73	54.33	59.40	64.03	68.23
30	30	30.20	32.93	33.60	36.17	41.33
30	36	46.16	52.86	55.63	59.93	65.33
30	42	54.27	58.83	63.33	68.00	72.70
30	48	63.03	68.10	71.13	77.15	83.17
30	54	76.40	84.30	98.10	104.00	109.70
30	60	84.90	93.80	108.90	115.40	121.60
30	66	90.50	99.90	116.20	123.00	130.40
30	72	101.90	112.30	130.70	138.80	146.30
36	36	56.43	61.03	70.00	72.38	74.93
36	42	71.80	79.10	92.00	97.50	103.00
36	48	81.70	90.00	104.70	111.00	117.30
36	54	91.50	100.90	117.50	124.40	131.50
36	60	102.00	112.40	130.70	138.40	146.40
36	66	112.20	123.50	143.70	152.20	160.90
36	72	122.30	134.70	156.80	166.00	175.50
36	78	132.50	146.20	170.00	180.00	190.30
36	84	142.50	157.20	182.70	193.60	204.50
42	42	83.50	92.20	103.50	113.60	120.00
42	48	95.30	105.20	122.20	129.60	137.00
42	54	107.10	118.00	137.40	145.60	153.80
42	60	118.90	130.90	152.50	161.60	170.60
42	66	130.70	144.00	167.60	177.60	187.70
42	72	142.50	157.20	182.70	193.60	204.50
42	78	154.70	170.60	198.40	210.50	222.40
42	84	166.40	183.70	213.60	226.30	239.00
42	90	178.20	196.60	228.70	242.30	256.20
42	96	190.40	210.00	244.20	258.80	273.50
48	48	109.00	119.10	139.60	148.00	156.50
48	54	123.20	134.70	156.60	166.00	175.50
48	60	135.90	149.80	174.20	184.90	195.10
48	66	149.50	164.80	191.50	203.00	214.50
48	72	163.40	180.00	209.30	221.90	234.50
48	78	176.60	194.60	226.30	240.10	253.60
48	84	190.40	210.10	244.20	258.60	273.50
48	90	203.40	225.40	260.80	276.50	293.00
48	96	217.10	239.30	278.30	295.00	310.70
54	54	137.70	151.70	176.70	187.20	197.90
54	60	152.90	168.40	196.00	207.90	219.60
54	66	167.90	185.10	215.40	222.30	241.30
54	72	182.90	201.80	234.70	248.90	262.80
54	78	198.20	218.60	254.10	269.40	284.80
54	84	212.60	234.10	272.30	288.70	308.70
54	90	228.10	249.30	290.20	309.50	328.20
54	96	240.70	265.60	308.60	327.00	345.80
60	60	167.60	184.90	214.80	228.10	240.50
60	66	184.00	203.00	236.00	250.20	251.90
60	72	203.00	223.90	260.20	275.90	291.60
60	78	217.80	240.20	279.40	296.20	312.70
60	84	237.60	260.20	302.50	320.70	338.80
60	90	252.30	278.30	313.10	343.40	362.50
60	96	268.60	296.50	344.90	365.40	386.00

## Columbia Type P Flush Cabinets

For Cut-Outs, Service Switches and Panel Boards



These cabinets are provided with removable steel trim and door Plain type without ornamental beads; body is formed from one piece of steel with corners folded in and securely welded.

Finished in black baked japan. Regularly equipped with knob and turn catch.

Cabinets having surface area of over 360 square inches are furnished with vault handle.

Cabinets can be supplied with any style hinges, catch or lock.

Holes for cut-outs, switches, etc., add one cent per hole per box net. For tapped holes, two cents per hole net. Minimum 50 cents net per order.

CONDUIT DRILLING.—Cabinets are regularly furnished with knockouts for 1/2-inch conduit. For special conduit drilling an extra charge will be made. Knockouts other than 1/2-inch are furnished at a net charge of \$1.00 for each variation from 1/2 inch regardless of quantity. This covers any number of knockouts in any number of boxes.

### Panel Board Cabinets

This style cabinet is especially adapted for panel boards. Give size of panel, or specify maker's name and manufacturer's number. Sizes not listed at proportionate prices. This style of cabinet can also be furnished for surface work if so ordered.

The boxes listed below are made of sheet steel of the required thickness to conform with Board of Underwriters' requirements and bear the Underwriters' labels.

All boxes are hinged on right unless otherwise specified. When ordering, specify hinged side first.

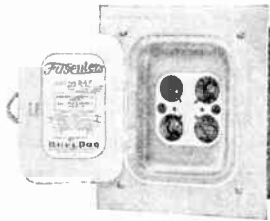
## Columbia Type P Flush Cabinets

For Cut-Outs, Service Switches and Panel Boards

Width or Short Side Inches	Height or Long Side Inches	PRICE, EACH DEPTH, INCHES				
		4	6	8	10	12
15	15	\$9.86	\$10.96	\$12.20	\$13.60	\$15.96
15	18	10.48	12.30	13.83	15.26	16.60
15	24	12.40	14.60	16.46	18.03	17.36
15	30	22.66	26.03	27.76	30.13	32.70
15	36	25.13	28.73	30.73	34.60	35.30
18	18	11.36	13.40	15.03	16.53	18.00
18	21	17.23	19.86	21.36	23.20	25.96
18	24	19.46	22.60	23.90	25.90	28.00
18	30	24.93	28.00	30.10	32.80	34.66
18	36	27.70	30.76	33.23	35.70	38.00
18	40	30.43	33.43	36.30	38.96	41.36
24	24	24.50	27.90	29.53	31.76	34.13
24	30	31.20	34.83	37.26	40.10	42.80
24	36	34.60	38.36	42.26	44.23	48.23
24	40	38.00	41.80	45.03	48.33	51.36
24	44	51.59	57.87	69.70	70.58	78.25
24	48	54.46	61.23	74.06	76.76	82.93
30	30	37.70	41.70	44.33	47.26	50.26
30	36	51.30	56.93	60.96	64.23	68.60
30	42	61.60	67.30	69.43	74.43	79.26
30	48	65.60	72.33	75.96	80.70	86.27
30	54	88.20	98.00	113.60	117.60	121.50
30	60	98.00	108.90	126.30	130.70	135.00
30	66	104.70	116.30	136.50	139.60	144.10
30	72	117.60	130.70	152.00	156.70	161.80
36	36	58.70	66.20	70.80	75.90	80.60
36	42	82.80	92.10	106.70	110.40	114.10
36	48	94.10	104.70	121.50	125.60	129.90
36	54	105.70	117.40	136.10	141.00	145.70
36	60	117.60	130.70	151.70	156.70	162.10
36	66	134.40	149.30	158.30	179.10	185.10
36	72	140.80	156.80	181.80	188.00	194.30
36	78	152.90	169.90	197.10	203.90	210.70
36	84	164.30	182.70	212.00	219.30	226.50
42	42	95.60	106.50	123.90	128.30	133.00
42	48	110.00	121.60	140.40	145.20	150.00
42	54	123.40	137.40	159.50	165.00	170.40
42	60	137.40	152.50	176.80	183.00	189.00
42	66	150.70	167.50	194.60	200.90	207.50
42	72	164.30	182.70	211.90	219.10	226.40
42	78	178.50	198.40	230.20	238.10	244.90
42	84	190.60	211.80	245.60	254.10	262.60
42	90	203.90	226.30	250.20	271.80	280.50
42	96	216.70	240.80	279.50	289.20	298.60
48	48	125.90	139.80	162.20	167.90	173.30
48	54	139.60	155.60	180.50	186.80	193.10
48	60	157.00	172.30	199.20	205.70	212.30
48	66	171.40	192.50	220.20	228.80	234.90
48	72	184.50	204.50	236.20	244.20	250.90
48	78	201.40	223.90	247.80	269.40	278.00
48	84	216.70	240.80	279.50	289.20	298.60
48	90	233.90	259.90	301.30	307.10	322.10
48	96	249.40	273.80	321.60	332.50	343.60
54	54	159.50	174.70	201.70	208.10	214.80
54	60	172.80	193.80	221.40	230.10	236.10
54	66	191.80	213.00	247.00	255.30	263.80
54	72	211.00	232.30	265.10	274.40	286.50
54	78	227.60	251.70	290.40	300.10	309.50
54	84	244.50	272.30	316.80	327.70	338.80
54	90	261.00	295.00	345.00	356.00	372.00
54	96	278.90	311.00	360.60	372.70	384.80
60	60	191.80	211.80	243.60	251.30	259.50
60	66	211.90	236.00	274.70	284.40	293.80
60	72	233.90	259.90	301.30	307.10	322.10
60	78	283.70	279.50	324.00	334.90	346.10
60	84	271.70	303.70	353.30	365.40	377.50
60	90	291.20	323.20	375.10	388.20	401.70
60	96	310.20	344.90	399.30	413.80	428.10

Width or Short Side Inches	Height or Long Side Inches	EACH DEPTH, INCHES				
		3	4	6	8	10
4 1/2	5	\$4.30	.....	.....	.....	.....
4 1/2	9	4.46	.....	.....	.....	.....
6	6	4.43	\$4.76	\$5.56	.....	.....
6	8	4.60	5.00	5.96	.....	.....
6	9	4.70	5.10	6.06	.....	.....
6	12	5.10	5.50	6.23	.....	.....
8	8	5.00	5.36	6.33	\$6.80	.....
8	10	5.33	5.73	6.70	7.36	.....
8	12	5.50	5.96	6.96	7.93	.....
9	9	5.23	5.70	6.66	7.43	.....
9	12	5.76	6.20	7.16	8.40	.....
10	10	5.56	6.00	7.00	8.13	\$8.90
10	12	5.96	6.83	7.93	8.93	9.40
10	15	6.56	7.06	8.56	10.03	11.00
10	18	7.23	7.93	10.03	11.10	11.33
12	12	6.06	6.96	8.76	9.56	10.30
12	15	7.70	8.53	10.30	10.70	11.70
12	18	.....	9.50	11.20	11.56	12.73
12	24	.....	10.76	12.80	13.90	15.90
12	30	.....	18.33	21.46	23.00	25.03
12	36	.....	20.23	23.60	25.53	28.13

**Bull Dog Safety Fusernters**  
 2 or 3-Wire Service, 125-250 Volts  
 30-Ampere Plug Fusible Circuits  
**Flush Mounting**



No. B4F

The luminized fronts fit the finest decorative scheme or make an excellent base coat where other finishes are desired.

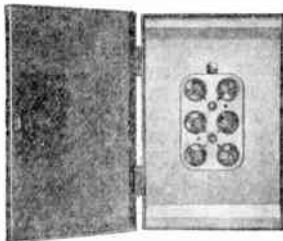
Numerous knockouts are provided. Plenty of wiring space makes for easy and economical wiring.

Circuit wire lies directly on screw shell, eliminating two joints per circuit over other types of contacts. Screw shells

are removable and replaceable without removing fronts.

No. Circ.	Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.	Box Ref.
2	B2F	\$2.25	25	75	A
4	B4F	3.00	10	74	B
6	B6F	5.00	10	100	C
8	B8F	7.50	5	75	D
10	B10F	11.00	5	85	E
12	B12F	15.00	5	92	E

**Bull Dog Safety Fusernters**  
 2 or 3-Wire Service, 125-250 Volts  
 30-Ampere Plug Fusible Circuits  
**Surface Mounting**



No. CB6S

Flat covers with inside shield.

No. Circ.	Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.	Box Ref.
2	CB2S	\$2.25	25	..	A
4	CB4S	3.00	10	68	B
6	CB6S	5.00	10	98	C
8	CB8S	7.50	5	75	D
10	CB10S	11.00	5	85	E
12	CB12S	15.00	5	92	E

**Bull Dog Safety Fusernters**  
 2 or 3-Wire Service, 125-250 Volts  
 30-Ampere Plug Fusible Circuits



No. BS4F

Equipped with switch plates provided with rectangular knockouts for standard makes of toggle switches as noted below.

Specially adapted for stores and other buildings where the cost factor precludes the use of more expensive panelboards.

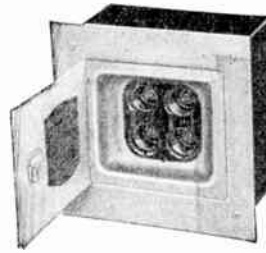
For gasoline filling stations the combination including a Saftofuse is much in demand.

The Saftofuse is a fusible switch.

Toggle switches are not included in the price nor furnished with Fusernters.

No. Circ.	Cat. No.	Each	Wt., Lbs. Each	Box Ref.
4	BS4F	\$6.50	9	C
6	BS6F	9.00	15	E
8	BS8F	12.00	18	F
10	BS10F	15.00	19	G1
12	BS12F	18.00	22	G1

**Square D Fuse Cabinets**



No. 37421, Flush Type

Furnished in both black enamel and aluminum (baked on) finish.

Surface types can be attached to any standardized switch by the use of a nipple which will provide a branch circuit cabinet for meter switch use.

Packed 1 in a carton.

**Flush Mounting Type**

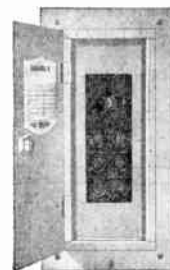
Cat. No.	Each	No. of Circuits	Color	Box No.	Weight Pounds
37221	\$2.25	2	Aluminum	526-A	5
37211	2.25	2	Black	526-A	5
37421	3.00	4	Aluminum	526-A	5 1/4
37411	3.00	4	Black	526-A	5 3/4
37621	5.00	6	Aluminum	529	11
37611	5.00	6	Black	529	11
37821	7.50	8	Aluminum	...	..
37811	7.50	8	Black	...	..
37021	11.00	10	Aluminum	...	..
37011	11.00	10	Black	...	..
37121	15.00	12	Aluminum	...	..
37111	15.00	12	Black	...	..

**Surface Mounting Type**

Cat. No.	Each	No. of Circuits	Color	Box No.	Weight Pounds
39211	2.25	2	Black	526-A	5
39411	3.00	4	Black	526-A	5 1/2
39611	5.00	6	Black	529	10 3/4
39811	7.50	8	Black	...	..
39011	11.00	10	Black	...	..
39111	15.00	12	Black	...	..

**Square D Combination Fuse Cabinets**  
 With 60 and 30-Ampere Circuits

3-Wire Mains - 2-Wire, 30-Ampere Solid Neutral Branches  
 3-Wire, 60-Ampere Solid Neutral Branch



The 60-ampere fuses are attached to a bakelite cover so that when the cover or holder is removed, the fuses are disconnected and come out with the holder. Contact jaws are inaccessible as they are reversed below the surface, making them dead front.

Cabinets for flush mounting are aluminum; for surface mounting, black.

Standard package, 1. Cabinets are packed 5 to a carton.



**Flush Mounting**

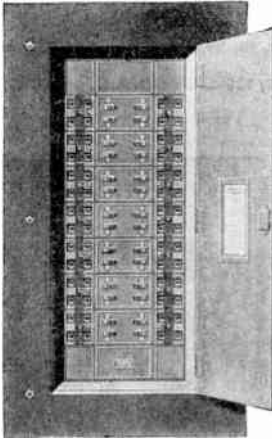
Cat. No.	Each	Description	Box No.	Wt., Lbs. Each
37122	\$8.00	One 60-Amp. Only.....	529-A	13
37322	10.00	Two 30-Amp. Circuits and One 60-Amp. Circuit.....	529-A	10
37522	12.00	Four 30-Amp. Circuits and One 60-Amp. Circuit.....	530-A	12
37722	14.50	Six 30-Amp. Circuits and One 60-Amp. Circuit.....	532-A	14
37922	18.50	Eight 30-Amp. Circuits and One 60-Amp. Circuit.....	531-A	18

**Surface Mounting**

Cat. No.	Each	Description	Box No.	Wt., Lbs. Each
39112	7.50	One 60-Amp. Circuit Only.....	529-A	12
39312	9.50	Two 30-Amp. Circuits and One 60-Amp. Circuit.....	529-A	12
39512	11.50	Four 30-Amp. Circuits and One 60-Amp. Circuit.....	530-A	13.4
39712	13.50	Six 30-Amp. Circuits and One 60-Amp. Circuit.....	532-A	14
39912	17.50	Eight 30-Amp. Circuits and One 60-Amp. Circuit.....	531-A	15



## Square D Lighting Panels



Galvanized boxes. Green duco trim.  
Sections are of bakelite.

All exterior hardware is chromium plated.

All panels supplied either flush or surface mounting.  
Flush type is fitted with yale locks and latches.

### No. NR3G Residence Type

**Mains:** 125-250 Volts, 3-Wire  
**Branches:** 30-Ampere, Single Pole  
Plug or Cartridge Fuses  
Solid Neutral

Single door construction.

Residence type panel dimensions: 12 inches wide, 4 inches deep, and 3-inch gutters.

CAT. NOS. COMPLETE PANEL		Each	Branches	Amp. Cap. of Mains
Plug Fuses	Cartridge Fuses			
NRP3G04	NRC3G04	\$16.00	4	30
NRP3G08	NRC3G08	20.00	8	60
NRP3G12	NRC3G12	24.00	12	60
NRP3G16	NRC3G16	30.00	16	100
NRP3G20	NRC3G20	34.00	20	100
NRP3G24	NRC3G24	42.00	24	100
NRP3G28	NRC3G28	48.00	28	100
NRP3G32	NRC3G32	54.00	32	100

Above panels equipped with lugs only in the mains.

### Nos. NTP3 and NTC3 Standard Type

**Mains:** 125-250 Volts, 3-Wire  
**Branches:** 30-Ampere, Single Pole Tumbler Switches  
Plug or Cartridge Fuses  
Main Lugs Only—Solid Neutral

Single door construction.

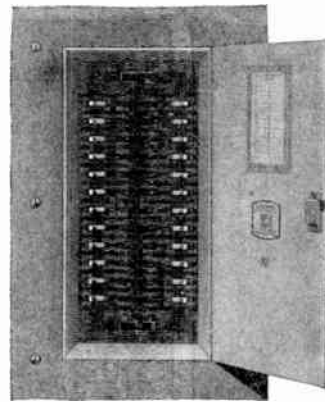
Standard type panel dimensions: 19 inches wide, 4½ inches deep, and 4-inch gutters.

NTP-304-L	NTC-304-L	\$34.00	4	30
NTP-308-L	NTC-308-L	40.00	8	60
NTP-312-L	NTC-312-L	50.00	12	60
NTP-316-L	NTC-316-L	74.00	16	100
NTP-320-L	NTC-320-L	84.00	20	100
NTP-324-L	NTC-324-L	94.00	24	100
NTP-328-L	NTC-328-L	104.00	28	100
NTP-332-L	NTC-332-L	114.00	32	100
NTP-336-L	NTC-336-L	140.00	36	200
NTP-340-L	NTC-340-L	150.00	40	200

When ordering always specify whether for flush or surface mounting.

## Square D Nofuze Lighting Panels

Single Pole—Solid Neutral  
Main Lugs Only



Galvanized boxes. Green duco trims.  
Specify flush or surface trim. Flush trim has ¼-inch extension all round.  
All exterior parts are chromium plated.

### No. NA1B-3

**Mains:** 125-250 Volts, 3 Wires, Solid Neutral  
**Branches:** 125 Volts, 2-Wire with 15-Ampere, 125-Volt Single-Pole Breaker

Cat. No.	*Each	Branches	Amp. Cap. of Mains
NA1B-304-L050	\$49.00	4	50
NA1B-306-L050	59.00	6	50
NA1B-308-L050	70.00	8	50
NA1B-310-L050	81.00	10	50
NA1B-312-L100	95.00	12	100
NA1B-314-L100	107.00	14	100
NA1B-316-L100	119.00	16	100
NA1B-318-L100	131.00	18	100
NA1B-320-L100	143.00	20	100
NA1B-322-L100	155.00	22	100
NA1B-324-L100	167.00	24	100
NA1B-326-L100	179.00	26	100
NA1B-328-L100	191.00	28	100
NA1B-330-L100	203.00	30	100
NA1B-332-L100	215.00	32	100
NA1B-334-L200	238.00	34	200
NA1B-336-L200	251.00	36	200
NA1B-338-L200	264.00	38	200
NA1B-340-L200	277.00	40	200

### No. NA1B-4

**Mains:** 125-250 Volts, 3-Phase, 4-Wire, Solid Neutral  
**Branches:** 125-Volt, 2-Wire with 15-Ampere, 125-Volt, Single-Pole Breaker

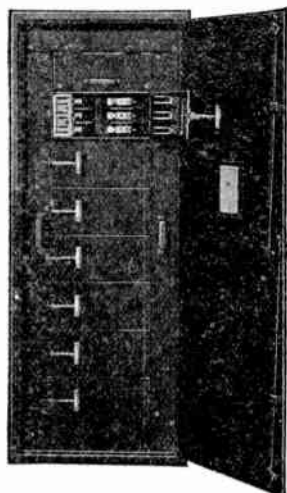
NA1B-404-L050	\$51.00	4	50
NA1B-406-L050	62.00	6	50
NA1B-408-L050	73.00	8	50
NA1B-410-L050	85.00	10	50
NA1B-412-L050	96.00	12	50
NA1B-414-L050	108.00	14	50
NA1B-416-L100	122.00	16	100
NA1B-418-L100	134.00	18	100
NA1B-420-L100	146.00	20	100
NA1B-422-L100	158.00	22	100
NA1B-424-L100	170.00	24	100
NA1B-426-L100	182.00	26	100
NA1B-428-L100	194.00	28	100
NA1B-430-L100	206.00	30	100
NA1B-432-L100	218.00	32	100
NA1B-434-L100	238.00	34	100
NA1B-436-L100	251.00	36	100
NA1B-438-L100	264.00	38	100
NA1B-440-L100	277.00	40	100

\*Prices are based on 15-ampere breakers. The 20 and 25-ampere breakers can be supplied at the same price, except increased main busbar capacity may be supplied, if required, at a small additional cost. The 35 and 50-ampere breakers can be supplied at \$1.00 extra per circuit, plus increased busbar capacity.

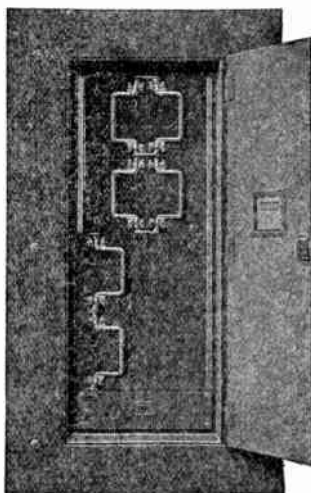
**Square D Saflex Convertible Panels**

For Flush or Surface Mounting

Listed by Underwriters Laboratories, Inc.



**Saflex**  
30, 60, 100, 200, 400, or  
600 Amps., 250 or 575 Volts



**Saflex, Jr.**  
Shallow Type—6 Inches Deep,  
19 Inches Wide  
30, 60 or 100 Amps., 250 Volts

**Square D Nofuze Load Centers**

Single and Double Pole Arrangements

15, 20, 25, 35, and 50-Ampere Circuits

125, 125-250 Volts A.C. and D.C.



Features of Square D Saflex and Saflex, Jr. Panels:  
Complete safety. No live parts can be touched and circuits may be opened safely under maximum loads.  
All poles broken simultaneously. No possibility of single phasing.  
Underwriters approval on switch for rupturing full load.  
Unit switch can be locked in "on" and "off" positions.  
Visible indication of "on" and "off" position of switch blades.

Adequate provision for fuse ventilation.  
Oversize wiring gutters.  
Current is broken by compact and separate switch element mounted between bus and fuse.  
Units are of full 2 and 3-pole construction, requiring a minimum number of circuit parts to be mounted.  
Light weight switch blade assembly is only part carried on steel unit door; fuses mounted on fixed base.  
Saflex units are constructed to take 250-volt and 600-volt N. E. C. fuses in sizes from 30-ampere to 600-ampere. Switches are rated 230-volt and 575-volt a.c. and 250-volt d.c. Saflex, Jr. units are constructed for 30, 60, and 100-ampere, 250 volts only.

All units are readily removable and the various sizes are interchangeable within the same cabinets and upon the same bases.

Fuse jaws and clips are interchangeable within each unit without dismantling the unit.  
Switch contacts are of the high pressure type.

Provision is made for testing fuses.  
Cabinets may be supplied without interior or with complete interior assembly or with busses only, permitting the installation of interiors as required at a future date.

Interiors complete with busses can be readily mounted upon the mounting studs in the cabinet.

Metal blanks are supplied to cover busses for future circuit requirements.

Unit bases are made of ebony asbestos.  
Standard finish is black.

Cabinet doors are equipped with chromium plated vault handles with integral Yale lock.

Units are mounted in individual steel boxes for maximum mechanical protection. No molded parts are exposed.

Unit doors are provided with steel guides independent of hinges to ensure alignment.

Prices and Complete Information upon Application

List prices are based on 15, 20, and 25-ampere circuits. For each 35 or 50-ampere single pole circuit substituted for each 15, 20, or 25-ampere single pole circuit, add 65 cents each list.

For each 35 or 50-ampere double pole circuit substituted for a 15, 20, or 25-ampere double pole circuit, add 75 cents each list.

Be sure to specify capacity of each circuit when ordering.

Nofuze Load Centers are shipped unassembled. Breakers, boxes and cover plates are packed individually.

Poles	*Circuit Arrangement	Cat. No. Flush Mounting	Cat. No. Surface Mounting	Each
2	2 SP	6102-02	6202-02	\$14.75
	1 DP	6110-02	6210-02	15.25
3	3 SP	6103-04	6203-04	20.25
	1 SP-1 DP	6111-04	6211-04	20.75
4	4 SP	6104-04	6204-04	25.00
	2 SP-1 DP	6112-04	6212-04	25.50
5	2 DP	6120-04	6220-04	26.00
	5 SP	6105-06	6205-06	30.55
6	3 SP-1 DP	6113-06	6213-06	31.05
	1 SP-2 DP	6121-06	6221-06	31.55
7	6 SP	6106-06	6206-06	35.30
	4 SP-1 DP	6114-06	6214-06	35.80
8	2 SP-2 DP	6122-06	6222-06	36.30
	3 DP	6130-06	6230-06	36.80
9	7 SP	6107-08	6207-08	41.15
	5 SP-1 DP	6115-08	6215-08	41.65
10	3 SP-2 DP	6123-08	6223-08	42.15
	1 SP-3 DP	6131-08	6231-08	42.65
11	8 SP	6108-08	6208-08	45.90
	6 SP-1 DP	6116-08	6216-08	46.40
12	4 SP-2 DP	6124-08	6224-08	46.90
	2 SP-3 DP	6132-08	6232-08	47.40
13	4 DP	6140-08	6240-08	47.90
	9 SP	6109-10	6209-10	51.55
14	7 SP-1 DP	6117-10	6217-10	52.05
	5 SP-2 DP	6125-10	6225-10	52.55
15	3 SP-3 DP	6133-10	6233-10	53.05
	1 SP-4 DP	6141-10	6241-10	53.55
16	10 SP	6100-10	6200-10	56.30
	8 SP-1 DP	6118-10	6218-10	56.80
17	6 SP-2 DP	6126-10	6226-10	57.30
	4 SP-3 DP	6134-10	6234-10	57.80
18	2 SP-4 DP	6142-10	6242-10	58.30
	5 DP	6150-10	6250-10	58.80

\*SP—single pole circuit. DP—double pole circuit with single operating handle.

## Bull Dog Lighting Panelboards

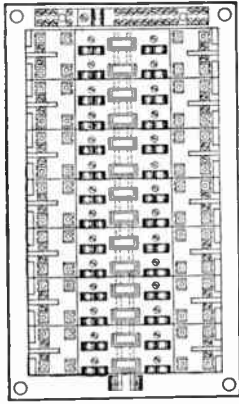
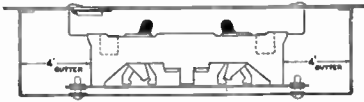
Using Overcurrent Protective Device in 1 Leg Only  
Solid Neutral Bar in Other

Mains: 3-Wire, 125-250 Volts  
Branches: 2-Wire, 125 Volts, Single Pole

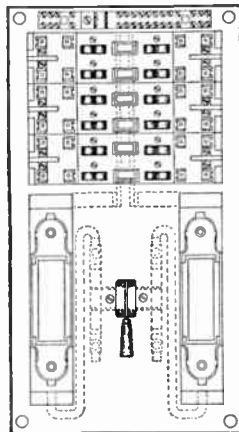
Branches, single pole or double pole toggle switches and 30-ampere plug or cartridge type fuse connections.

Cabinet dimensions, 20 inches wide, 5½ inches deep. Numeral in Box No. indicates height in inches. Wiring gutters, 4 inches.

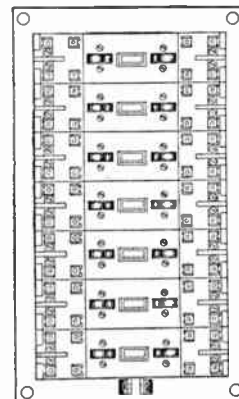
Cat. Nos. and prices include panel (less fuses) and cabinets complete.



Style NTC3LD



Style NTC3SFD



Style TC2LD

### Double Door

30-Amp. Tumbler Switches, Plug Fuses  
30-Amp. Tumbler Switches, Cartridge Fuses  
Mains—Lugs Only

No. Cir-cuits	Cat. Nos.		Each	Amp. Mains	Box No.
	Plug Fuses	Cartridge Fuses			
4	NTP304LD	NTC304LD	\$50.00	30	W14
8	NTP308LD	NTC308LD	60.00	60	W17
12	NTP312LD	NTC312LD	70.00	60	W20
16	NTP316LD	NTC316LD	86.00	100	W23
20	NTP320LD	NTC320LD	96.00	100	W26
24	NTP324LD	NTC324LD	106.00	100	W29
28	NTP328LD	NTC328LD	116.00	100	W32
32	NTP332LD	NTC332LD	126.00	100	W35
36	NTP336LD	NTC336LD	152.00	200	W41
40	NTP340LD	NTC340LD	162.00	200	W44
Mains—Safety Fuse					
4	NTP304FD	NTC304FD	\$62.00	30	W23
8	NTP308FD	NTC308FD	74.00	60	W26
12	NTP312FD	NTC312FD	86.00	60	W29
16	NTP316FD	NTC316FD	102.00	100	W35
20	NTP320FD	NTC320FD	114.00	100	W38
24	NTP324FD	NTC324FD	126.00	100	W41
28	NTP328FD	NTC328FD	138.00	100	W44
32	NTP332FD	NTC332FD	150.00	100	W47
36	NTP336FD	NTC336FD	178.00	200	W53
40	NTP340FD	NTC340FD	190.00	200	W56
Mains—Fusible Switch					
4	NTP304SFD	NTC304SFD	\$80.00	30	W23
8	NTP308SFD	NTC308SFD	90.00	60	W26
12	NTP312SFD	NTC312SFD	102.00	60	W29
16	NTP316SFD	NTC316SFD	122.00	100	W35
20	NTP320SFD	NTC320SFD	134.00	100	W38
24	NTP324SFD	NTC324SFD	146.00	100	W41
28	NTP328SFD	NTC328SFD	158.00	100	W44
32	NTP332SFD	NTC332SFD	170.00	100	W47
36	NTP336SFD	NTC336SFD	218.00	200	W53
40	NTP340SFD	NTC340SFD	230.00	200	W56

### Single Door

30-Amp. Tumbler Switches, Plug Fuses  
30-Amp. Tumbler Switches, Cartridge Fuses  
Mains—Lugs Only

No. Cir-cuits	Cat. Nos.		Each	Amp. Mains	Box No.
	Plug Fuses	Cartridge Fuses			
4	NTP304L	NTC304L	\$34.00	30	W14
8	NTP308L	NTC308L	40.00	60	W17
12	NTP312L	NTC312L	50.00	60	W20
16	NTP316L	NTC316L	74.00	100	W23
20	NTP320L	NTC320L	84.00	100	W26
24	NTP324L	NTC324L	94.00	100	W29
28	NTP328L	NTC328L	104.00	100	W32
32	NTP332L	NTC332L	114.00	100	W35
36	NTP336L	NTC336L	140.00	200	W41
40	NTP340L	NTC340L	150.00	200	W44
Mains—Safety Fuse					
4	NTP304F	NTC304F	\$46.00	30	W23
8	NTP308F	NTC308F	58.00	60	W26
12	NTP312F	NTC312F	70.00	60	W29
16	NTP316F	NTC316F	90.00	100	W35
20	NTP320F	NTC320F	102.00	100	W38
24	NTP324F	NTC324F	114.00	100	W41
28	NTP328F	NTC328F	126.00	100	W44
32	NTP332F	NTC332F	138.00	100	W47
36	NTP336F	NTC336F	166.00	200	W53
40	NTP340F	NTC340F	178.00	200	W56
Mains—Fusible Switch					
4	NTP304SF	NTC304SF	\$64.00	30	W23
8	NTP308SF	NTC308SF	74.00	60	W26
12	NTP312SF	NTC312SF	86.00	60	W29
16	NTP316SF	NTC316SF	110.00	100	W35
20	NTP320SF	NTC320SF	122.00	100	W38
24	NTP324SF	NTC324SF	134.00	100	W41
28	NTP328SF	NTC328SF	146.00	100	W44
32	NTP332SF	NTC332SF	158.00	100	W47
36	NTP336SF	NTC336SF	206.00	200	W53
40	NTP340SF	NTC340SF	218.00	200	W56

### Using Overcurrent Protective Devices in Both Legs No Neutral Bar

Mains: 2-Wire, 125 Volts  
Branches: 2-Wire, 125 Volts, Double Pole

No. Cir-cuits	Cat. Nos.		Each	Amp. Mains	Box No.
	Plug Fuses	Cartridge Fuses			
4	TP204LD	TC204LD	\$62.00	60	W17
6	TP206LD	TC206LD	68.00	100	W20
8	TP208LD	TC208LD	78.00	100	W23
10	TP210LD	TC210LD	88.00	100	W26
12	TP212LD	TC212LD	98.00	200	W29
14	TP214LD	TC214LD	110.00	200	W32
16	TP216LD	TC216LD	120.00	200	W35
18	TP218LD	TC218LD	130.00	200	W38
20	TP220LD	TC220LD	140.00	200	W41
Mains—Lugs Only					
4	TP204L	TC204L	\$42.00	60	W17
6	TP206L	TC206L	52.00	100	W20
8	TP208L	TC208L	62.00	100	W23
10	TP210L	TC210L	72.00	100	W26
12	TP212L	TC212L	82.00	200	W29
14	TP214L	TC214L	94.00	200	W32
16	TP216L	TC216L	104.00	200	W35
18	TP218L	TC218L	114.00	200	W38
20	TP220L	TC220L	124.00	200	W41
Mains—Safety Fuse					
4	TP204FD	TC204FD	\$74.00	60	W26
6	TP206FD	TC206FD	86.00	100	W32
8	TP208FD	TC208FD	96.00	100	W35
10	TP210FD	TC210FD	106.00	100	W38
12	TP212FD	TC212FD	126.00	200	W41
14	TP214FD	TC214FD	136.00	200	W44
16	TP216FD	TC216FD	146.00	200	W47
18	TP218FD	TC218FD	156.00	200	W50
20	TP220FD	TC220FD	166.00	200	W53
Mains—Fusible Switch					
4	TP204SFD	TC204SFD	\$88.00	60	W26
6	TP206SFD	TC206SFD	108.00	100	W32
8	TP208SFD	TC208SFD	118.00	100	W35
10	TP210SFD	TC210SFD	128.00	100	W38
12	TP212SFD	TC212SFD	160.00	200	W41
14	TP214SFD	TC214SFD	170.00	200	W44
16	TP216SFD	TC216SFD	190.00	200	W47
18	TP218SFD	TC218SFD	200.00	200	W50
20	TP220SFD	TC220SFD	210.00	200	W53
Mains—Lugs Only					
4	TP204F	TC204F	\$58.00	60	W26
6	TP206F	TC206F	70.00	100	W32
8	TP208F	TC208F	80.00	100	W35
10	TP210F	TC210F	90.00	100	W38
12	TP212F	TC212F	110.00	200	W41
14	TP214F	TC214F	120.00	200	W44
16	TP216F	TC216F	130.00	200	W47
18	TP218F	TC218F	140.00	200	W50
20	TP220F	TC220F	150.00	200	W53
Mains—Fusible Switch					
4	TP204SF	TC204SF	\$72.00	60	W26
6	TP206SF	TC206SF	92.00	100	W32
8	TP208SF	TC208SF	102.00	100	W35
10	TP210SF	TC210SF	112.00	100	W38
12	TP212SF	TC212SF	144.00	200	W41
14	TP214SF	TC214SF	154.00	200	W44
16	TP216SF	TC216SF	174.00	200	W47
18	TP218SF	TC218SF	184.00	200	W50
20	TP220SF	TC220SF	194.00	200	W53

For Superba Type Double Door Panels, add S to Cat. No., e.g., SNTTP304LD.



## Bull Dog Lighting Panelboards

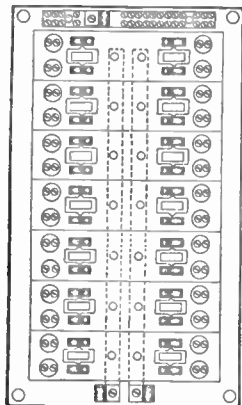
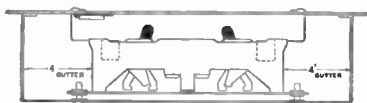
Using Overcurrent Protective Device in 1 Leg Only

**Solid Neutral Bar in Other**  
 Mains: 4-Wire, 3-Phase, 125-250 Volts  
 Branches: 2-Wire, 125 Volts, Single Pole

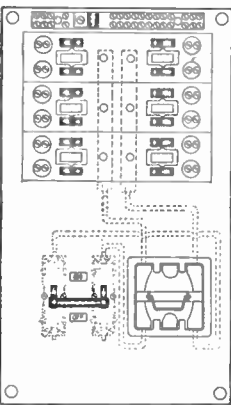
Branches, single pole or double pole toggle switches and 30-ampere plug or cartridge type fuse connections.

Cabinet dimensions, 20 inches wide, 5½ inches deep. Numeral in Box No. indicates height in inches. Wiring gutters, 4 inches.

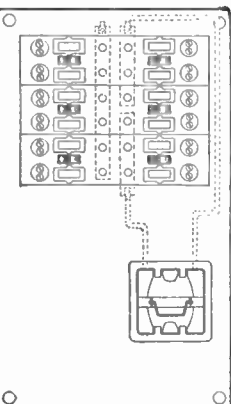
Cat. Nos. and prices include panel (less fuses) and cabinets complete.



Style NTP3LD



Style NTP-SFD



Style TP3FD

Double Door						Single Door					
30-Amp. Tumbler Switches, Plug Fuses						30-Amp. Tumbler Switches, Plug Fuses					
30-Amp. Tumbler Switches, Cartridge Fuses						30-Amp. Tumbler Switches, Cartridge Fuses					
Mains—Lugs Only						Mains—Lugs Only					
No. Circuits	Cat. Nos.		Each	Amp. Mains	Box No.	No. Circuits	Cat. Nos.		Each	Amp. Mains	Box No.
	Plug Fuses	Cartridge Fuses					Plug Fuses	Cartridge Fuses			
4	NTP404LD	NTC404LD	\$52.00	30	W17	NTP404L	NTC404L	\$40.00	30	W17	
8	NTP408LD	NTC408LD	64.00	60	W20	NTP408L	NTC408L	52.00	60	W20	
12	NTP412LD	NTC412LD	74.00	60	W23	NTP412L	NTC412L	62.00	60	W23	
16	NTP416LD	NTC416LD	90.00	60	W26	NTP416L	NTC416L	78.00	60	W26	
20	NTP420LD	NTC420LD	100.00	60	W29	NTP420L	NTC420L	88.00	60	W29	
24	NTP424LD	NTC424LD	112.00	60	W32	NTP424L	NTC424L	100.00	60	W32	
28	NTP428LD	NTC428LD	122.00	100	W35	NTP428L	NTC428L	110.00	100	W35	
32	NTP432LD	NTC432LD	132.00	100	W38	NTP432L	NTC432L	120.00	100	W38	
36	NTP436LD	NTC436LD	154.00	100	W44	NTP436L	NTC436L	146.00	100	W44	
40	NTP440LD	NTC440LD	164.00	100	W47	NTP440L	NTC440L	156.00	100	W47	
<b>Mains—Safety Fuse</b>						<b>Mains—Safety Fuse</b>					
4	NTP404FD	NTC404FD	\$66.00	30	W26	NTP404F	NTC404F	\$54.00	30	W26	
8	NTP408FD	NTC408FD	78.00	60	W29	NTP408F	NTC408F	66.00	60	W29	
12	NTP412FD	NTC412FD	90.00	60	W32	NTP412F	NTC412F	78.00	60	W32	
16	NTP416FD	NTC416FD	108.00	60	W35	NTP416F	NTC416F	96.00	60	W35	
20	NTP420FD	NTC420FD	120.00	60	W38	NTP420F	NTC420F	108.00	60	W38	
24	NTP424FD	NTC424FD	132.00	60	W41	NTP424F	NTC424F	120.00	60	W41	
28	NTP428FD	NTC428FD	144.00	100	W44	NTP428F	NTC428F	132.00	100	W44	
32	NTP432FD	NTC432FD	160.00	100	W47	NTP432F	NTC432F	148.00	100	W47	
36	NTP436FD	NTC436FD	180.00	100	W53	NTP436F	NTC436F	170.00	100	W53	
40	NTP440FD	NTC440FD	194.00	100	W56	NTP440F	NTC440F	182.00	100	W56	
<b>Mains—Fusible Switch</b>						<b>Mains—Fusible Switch</b>					
4	NTP404SFD	NTC404SFD	\$88.00	30	W35	NTP404SF	NTC404SF	\$76.00	30	W35	
8	NTP408SFD	NTC408SFD	100.00	60	W38	NTP408SF	NTC408SF	88.00	60	W38	
12	NTP412SFD	NTC412SFD	112.00	60	W41	NTP412SF	NTC412SF	100.00	60	W41	
16	NTP416SFD	NTC416SFD	134.00	60	W44	NTP416SF	NTC416SF	122.00	60	W44	
20	NTP420SFD	NTC420SFD	148.00	60	W47	NTP420SF	NTC420SF	136.00	60	W47	
24	NTP424SFD	NTC424SFD	160.00	60	W50	NTP424SF	NTC424SF	148.00	60	W50	
28	NTP428SFD	NTC428SFD	174.00	100	W53	NTP428SF	NTC428SF	162.00	100	W53	
32	NTP432SFD	NTC432SFD	188.00	100	W56	NTP432SF	NTC432SF	176.00	100	W56	
36	NTP436SFD	NTC436SFD	234.00	100	W62	NTP436SF	NTC436SF	222.00	100	W62	
40	NTP440SFD	NTC440SFD	246.00	100	W65	NTP440SF	NTC440SF	234.00	100	W65	

## Using Overcurrent Protective Devices in Both Legs

No Neutral Bar

Mains: 3-Wire, 125-250 Volts  
 Branches: 2-Wire, 125 Volts, Double Pole

Mains—Lugs Only						Mains—Lugs Only					
No. Circuits	Cat. Nos.		Each	Amp. Mains	Box No.	No. Circuits	Cat. Nos.		Each	Amp. Mains	Box No.
	Plug Fuses	Cartridge Fuses					Plug Fuses	Cartridge Fuses			
4	TP304LD	TC304LD	\$58.00	30	W17	TP304L	TC304L	\$38.00	30	W17	
6	TP306LD	TC306LD	68.00	60	W20	TP306L	TC306L	48.00	60	W20	
8	TP308LD	TC308LD	78.00	60	W23	TP308L	TC308L	58.00	60	W23	
10	TP310LD	TC310LD	88.00	60	W26	TP310L	TC310L	68.00	60	W26	
12	TP312LD	TC312LD	98.00	60	W29	TP312L	TC312L	78.00	60	W29	
14	TP314LD	TC314LD	106.00	100	W32	TP314L	TC314L	90.00	100	W32	
16	TP316LD	TC316LD	116.00	100	W35	TP316L	TC316L	100.00	100	W35	
18	TP318LD	TC318LD	126.00	100	W38	TP318L	TC318L	110.00	100	W38	
20	TP320LD	TC320LD	140.00	100	W41	TP320L	TC320L	124.00	100	W41	
<b>Mains—Safety Fuse</b>						<b>Mains—Safety Fuse</b>					
4	TP304FD	TC304FD	\$68.00	30	W26	TP304F	TC304F	\$52.00	30	W26	
6	TP306FD	TC306FD	78.00	60	W29	TP306F	TC306F	62.00	60	W29	
8	TP308FD	TC308FD	88.00	60	W32	TP308F	TC308F	72.00	60	W32	
10	TP310FD	TC310FD	98.00	60	W35	TP310F	TC310F	82.00	60	W35	
12	TP312FD	TC312FD	108.00	60	W38	TP312F	TC312F	92.00	60	W38	
14	TP314FD	TC314FD	128.00	100	W44	TP314F	TC314F	112.00	100	W44	
16	TP316FD	TC316FD	138.00	100	W47	TP316F	TC316F	122.00	100	W47	
18	TP318FD	TC318FD	148.00	100	W50	TP318F	TC318F	132.00	100	W50	
20	TP320FD	TC320FD	158.00	100	W53	TP320F	TC320F	142.00	100	W53	
<b>Mains—Fusible Switch</b>						<b>Mains—Fusible Switch</b>					
4	TP304SFD	TC304SFD	\$86.00	30	W26	TP304SF	TC304SF	\$70.00	30	W26	
6	TP306SFD	TC306SFD	96.00	60	W29	TP306SF	TC306SF	80.00	60	W29	
8	TP308SFD	TC308SFD	106.00	60	W32	TP308SF	TC308SF	90.00	60	W32	
10	TP310SFD	TC310SFD	116.00	60	W35	TP310SF	TC310SF	100.00	60	W35	
12	TP312SFD	TC312SFD	126.00	60	W38	TP312SF	TC312SF	110.00	60	W38	
14	TP314SFD	TC314SFD	146.00	100	W44	TP314SF	TC314SF	130.00	100	W44	
16	TP316SFD	TC316SFD	156.00	100	W47	TP316SF	TC316SF	140.00	100	W47	
18	TP318SFD	TC318SFD	166.00	100	W50	TP318SF	TC318SF	150.00	100	W50	
20	TP320SFD	TC320SFD	182.00	100	W53	TP320SF	TC320SF	166.00	100	W53	

For Superba Type Double Door Panels, add S to Cat. No., e.g., SNTP401LD.

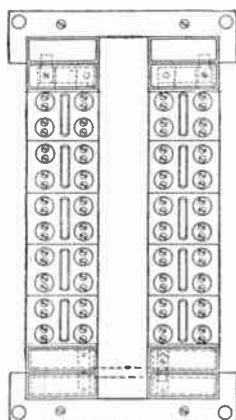
## Bull Dog Lighting Panelboards

Branches: Plug Fuse Connections Only

### Double Row Type

Using Plug Fuse in 1 Leg Only  
Solid Neutral Bar in Other

Cabinets, 20 inches wide, 5½ inches deep.  
Numerals in Box No. indicates height in inches.  
Wiring gutters, 4 inches.



Style NP3L

**Mains: 3-Wire, 125-250 Volts**  
**Branches: 2-Wire, 125 Volts, Single Pole**

Mains—Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
16	NP316L	\$56.00	100	W23
24	NP324L	66.00	100	W26
32	NP332L	76.00	100	W29
40	NP340L	106.00	200	W35

Mains—Safety Fuses				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
8	NP308F	\$60.00	60	W26
16	NP316F	80.00	100	W32
24	NP324F	90.00	100	W35
32	NP332F	105.00	100	W38
40	NP340F	136.00	200	W44

Mains—Fusible Switch				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
8	NP308SF	\$74.00	60	W26
16	NP316SF	95.00	100	W32
24	NP324SF	108.00	100	W35
32	NP332SF	120.00	100	W38
40	NP340SF	166.00	200	W44

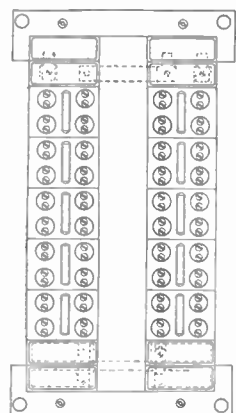
**Mains: 4-Wire, 3-Phase, 125-250 Volts**

**Branches: 2-Wire, 125 Volts Single Pole**

Mains—Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
16	NP416L	\$60.00	60	W26
24	NP424L	70.00	60	W29
32	NP432L	80.00	100	W32
40	NP440L	108.00	100	W35

Mains—Safety Fuse				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
8	NP408F	\$70.00	30	W26
16	NP416F	84.00	60	W32
24	NP424F	94.00	60	W35
32	NP432F	110.00	100	W38
40	NP440F	140.00	100	W44

Mains—Fusible Switch				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
8	NP408SF	\$82.00	30	W35
16	NP416SF	104.00	60	W41
24	NP424SF	120.00	60	W44
32	NP432SF	132.00	100	W47
40	NP440SF	176.00	100	W50



Style NP4L

### Narrow Type Panelboards

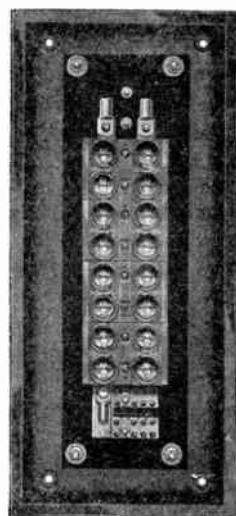
Wiring gutters, 3 inches.

**Mains: 3-Wire, 125-250 Volts**  
**Branches: 2-Wire, 125 Volts, Single Pole**

Mains—Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box Dimen. In.
8	NRP3G08	\$20.00	60	15x10½x4
12	NRP3G12	24.00	60	20x10½x4
16	NRP3G16	30.00	100	24x10½x4
20	NRP3G20	34.00	100	28x10½x4
24	NRP3G24	42.00	100	20x17½x4½
28	NRP3G28	48.00	100	24x17½x4½
32	NRP3G32	54.00	100	24x17½x4½

**Mains: 3-Wire, 125 Volts**  
**Branches: 2-Wire, 125 Volts Double Pole**

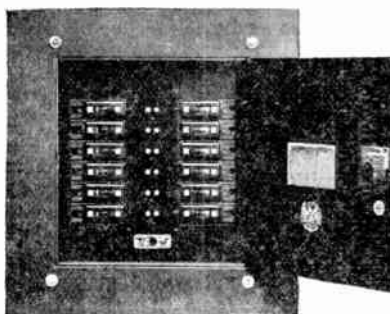
Mains—Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box Dimen. In.
4	RP3G04	\$16.00	30	15x10½x4
6	RP3G06	22.00	60	20x10½x4
8	RP3G08	26.00	60	24x10½x4
10	RP3G10	30.00	60	24x10½x4
12	RP3G12	34.00	60	28x10½x4
14	RP3G14	40.00	100	20x17½x4½
16	RP3G16	44.00	100	20x17½x4½
18	RP3G18	50.00	100	24x17½x4½
20	RP3G20	54.00	100	24x17½x4½



Style NRP3G

## Bull Dog Lighting Panelboards

Circuit Breaker Type



No. NA1B312L with Main Lugs

These panels have circuit breakers in the branches in lieu of toggle switches and fuses.

They are adapted for use in buildings where circuits are subject to overloads which would involve much fuse replacement and where frequent switching is done at the panels.

The breakers are quick-make and quick-break with automatic overload trip and inverse-time-limit feature. They cannot be held closed against overload. The trip is automatic and self-indicating with manual reset.

Cat. Nos. listed cover 15-ampere breakers. No increase in price for 20 and 25-ampere breakers. For 35 and 50 amperes, add \$1.00 for single pole and \$2.00 for double pole.

Prices include panel and cabinet complete.

### Solid Neutral

**Mains: 3-Wire, 125-250 Volts**  
**Branches: 2-Wire, 125 Volts, Single Pole**

Mains—Lugs Only		Mains—Circuit Breaker	
No. Circuits	Cat. No.	Each	Each
4	NA1B304L	\$49.00	NA1B304AB \$71.00
6	NA1B306L	59.00	NA1B306AB 81.00
8	NA1B308L	70.00	NA1B308AB 92.00
10	NA1B310L	81.00	NA1B310AB 103.00
12	NA1B312L	95.00	NA1B312AB 138.00
14	NA1B314L	107.00	NA1B314AB 150.00
16	NA1B316L	119.00	NA1B316AB 162.00
18	NA1B318L	131.00	NA1B318AB 174.00
20	NA1B320L	143.00	NA1B320AB 186.00
22	NA1B322L	155.00	NA1B322AB 202.00
24	NA1B324L	167.00	NA1B324AB 214.00

**Mains: 4-Wire, 3-Phase, 125-250 Volts**  
**Branches: 2-Wire, 125 Volts, Single Pole**

4	NA1B404L	\$51.00	NA1B404AB \$79.00	50
6	NA1B406L	62.00	NA1B406AB 90.00	50
8	NA1B408L	73.00	NA1B408AB 101.00	50
10	NA1B410L	85.00	NA1B410AB 113.00	50
12	NA1B412L	96.00	NA1B412AB 124.00	50
14	NA1B414L	108.00	NA1B414AB 136.00	50
16	NA1B416L	122.00	NA1B416AB 180.00	100
18	NA1B418L	134.00	NA1B418AB 191.00	100
20	NA1B420L	146.00	NA1B420AB 203.00	100
22	NA1B422L	158.00	NA1B422AB 219.00	100
24	NA1B424L	170.00	NA1B424AB 231.00	100

### No Neutral Bar

**Mains: 2-Wire, 125 Volts**

**Branches: 2-Wire, 125 Volts, Double Pole**

4	A2B204L	\$70.00	A2B204AB \$92.00	50
6	A2B206L	96.00	A2B206AB 139.00	100
8	A2B208L	120.00	A2B208AB 163.00	100
10	A2B210L	146.00	A2B210AB 189.00	100
12	A2B212L	174.00	A2B212AB 284.00	200
14	A2B214L	200.00	A2B214AB 310.00	200
16	A2B216L	226.00	A2B216AB 336.00	200
18	A2B218L	256.00	A2B218AB 362.00	200
20	A2B220L	282.00	A2B220AB 388.00	200

**Mains: 3-Wire, 125-250 Volts**

**Branches: 2-Wire, 125 Volts, Double Pole**

4	A2B304L	\$72.00	A2B304AB \$100.00	50
6	A2B306L	95.00	A2B306AB 123.00	50
8	A2B308L	119.00	A2B308AB 147.00	50
10	A2B310L	143.00	A2B310AB 171.00	50
12	A2B312L	172.00	A2B312AB 230.00	100
14	A2B314L	196.00	A2B314AB 258.00	100
16	A2B316L	222.00	A2B316AB 282.00	100
18	A2B318L	251.00	A2B318AB 308.00	100
20	A2B320L	277.00	A2B320AB 344.00	100

## Benjamin Panelboards and Cabinets

Benjamin Panelboards are easily and economically installed and incorporate features that insure low maintenance and efficiency in operation. A particularly advantageous feature of these panelboards is that all parts are removable from the front. They are compact and well proportioned and thus add to the appearance of any wiring installation.

### Features of Benjamin Panelboards

**BASES.**—Molded composition, strong, fireproof, of high dielectric strength and unaffected by heat, moisture, oil or acids.

**PANEL.**—Indestructible in that molded base units are mounted on steel back. Barriers and switch plates are of steel.

**SWITCHES.**—Single pole, 125-volt, and double pole, 250-volt, tumbler type are 30-ampere heavy duty with quick break and make mechanism.

**SWITCH PLATES.**—Individual for each 4-branch circuit on 1-fuse panels; 2-fuse panels have individual switch plates for each pair of branch circuits.

**CAPACITY.**—All current carrying parts are based on maximum current density of 1000 amperes per square inch cross section.

**MAIN CONNECTIONS.**—Furnished in 30, 60, 100 and 200 amperes capacity in 4 standard types: Main Lugs Only, Fusible Only, Fusible Main Knife Switches and Fusible Main Brush Switches.

### Types of Panelboards

**SAFETY TYPE.**—The cabinet for this panel is of the door-in-door construction, the large door giving access to mains and branch fuses, and small door to branch switches only. Large door is equipped with Yale lock and key and small door with latch only.

This type of panel is recommended for installations where branch circuit switches are manipulated by inexperienced persons and where it is desired to keep fuses under lock and key.

**PROTECTIVE TYPE.**—This type panel has a dead front protective shield covering the face of the panel which prevents accidental contact with any live part while changing fuses or operating switches. The cabinets have a single door

with a combined spring latch and knob and a Yale lock.

Cabinets for panels having Fusible Main Knife switch have 2 doors: 1 door for the knife switch and the other for the branch fuses.

Panels with Fusible Mains have a small door in the protective shield, giving access to the main fuses.

**OPEN TYPE.**—This type panel is identical to the Safety Type except that it has a single door which gives access to all the fuses and switches on the face of the panel. This panel is recommended for installations where the manipulation of switches and the renewal of fuses are attended to by authorized persons. Equipped with combined Yale lock, latch and knob.

#### 1-Fuse Panels

These Panels are polarity type with a solid neutral bar to which the grounded conductors of the branch circuits are attached.

Panels and cabinets can be furnished in the types listed below:

##### Safety Type

**TYPE NSPT.**—Branches, 30-ampere, 125-volt single pole tumbler switches, for plug fuses; mains, 125-250-volt.

##### Protective Type

**TYPE NLPT.**—Branches, 30-ampere, 125-volt single pole tumbler switches, for plug fuses; mains, 125-250-volt.

#### 2-Fuse Panels

##### Safety Type

These panels are arranged for 2 fuses for each 2-wire branch circuit.

Panels and cabinets can be furnished in the types listed below.

**TYPE SPT, 2-2-WIRE.**—Branches, 30-ampere, 250-volt double pole tumbler switches, for plug fuses; mains 125-volt.

**TYPE SPT, 3-2-WIRE.**—Branches, 30-ampere, 250-volt double pole tumbler switches, for plug fuses; mains, 125-250-volt.

##### Protective Type

**TYPE LPT, 2-2-WIRE.**—Branches, 30-ampere, 250-volt double pole tumbler switches, for plug fuses; mains, 125-volt.

**TYPE LPT, 3-2-WIRE.**—Branches, 30-ampere, 250-volt double pole switches, for plug fuses; mains, 125-250-volt.

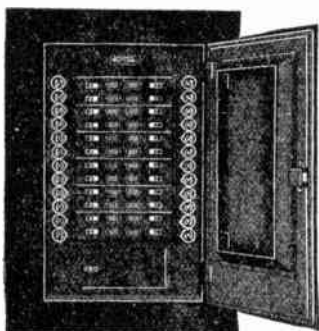
##### Open Type

**TYPE OCT, 2-2-WIRE.**—Branches, 30-ampere, 250-volt double pole tumbler switches for cartridge fuses; mains, 125-volt.

**TYPE OCT, 3-2-WIRE.**—Branches, 30-ampere, 250-volt double pole tumbler switches, for cartridge fuses; mains, 125-250-volt.

**TYPE OPK, 2-2-WIRE.**—Branches, 30-ampere, knife switch, for plug fuses; mains, 125-volt.

**TYPE OPK, 3-2-WIRE.**—Branches, 30-ampere, knife switch, for plug fuses; mains, 125-250-volt.



Type NLPT



Type SPT



## Benjamin Little Sentry Panel Boards with Cabinets

For Residences, Apartment Buildings, Small Stores, Schools, Small Factories and Similar Places Having from 4 to 12 Branch Circuits

Little Sentry Panels are ready for installations. Require no preliminary labor or adjustment. Trim, panel and fuse receptacles can all be removed from the front. Wiring terminal of fuse receptacle is one piece and is held in place by two small bolts. Contact is made with the entire base of the fuse shell.

Safety is assured the user because a protective shield covers all live metal parts.

The following features make easy installation of Little Sentry Panels:

Panel is easily removed by a quarter turn of 4 screws.

Each neutral branch connection is opposite fuse for that circuit simplifying the tracing of circuits.

Fuse receptacles easily removed from panel without disturbing wiring.

Blown fuse can easily be located. The slot in the receptacle base makes it simple and safe to use a test lamp.



### Type NP Little Sentry Panels with Cabinets

For 3-Wire Service

Mains: 125-250-Volt

1-Fuse Branches

Branches: Arranged for Plug Fuses Only

Cat. No.	No. of Circuits	BOX DIMENSIONS, INCHES			Approx. Weight Pounds	Price Each
		Width	Height	Inside Depth		
66104	4	9½	9½	3½	15	\$6.30
66106	6	9½	11	3½	17	9.00
66108	8	9½	12½	3½	19	10.80
66110	10	9½	14	3½	21	12.60
66112	12	9½	15½	3½	23	14.40

### Type P Little Sentry Panels with Cabinets

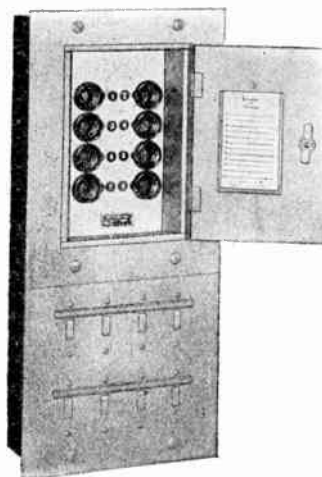
For 3 and 2-Wire Service

Mains: 125-250-Volt 3-Wire; 125-Volt 2-Wire

2-Fuse Branches

Branches: Arranged for Plug Fuses Only

Cat. No.	No. of Circuits	BOX DIMENSIONS, INCHES			Approx. Weight Pounds	Price Each
		Width	Height	Inside Depth		
66204	4	9½	12½	3½	19	\$9.00
66206	6	9½	15½	3½	23	13.50
66208	8	9½	18½	3½	26	16.20
66210	10	9½	21½	3½	29	18.90
66212	12	9½	24½	3½	34	22.50



### Type NEP Little Sentry Panels with Cabinets

Arranged with Switch Plates

For 3-Wire Service

Mains: 125-250-Volt, 1-Fuse Branches

Branches: 125-Volt, Arranged for Plug Fuses

Cat. No.	No. of Circuits	No. of Switch Mountings	BOX DIMENSIONS, INCHES			Approx. Weight Pounds	Price Each
			Width	Height	Inside Depth		
66304	4	4	9½	15½	3½	16	\$8.60
66306	6	8	9½	20	3½	18	12.50
66308	8	8	9½	21½	3½	20	15.50
66310	10	12	9½	27½	3½	23	20.00
66312	12	12	9½	29	3½	24	23.20

### Type EP Little Sentry Panels with Cabinets

Arranged with Switch Plates

For 3 and 2-Wire Service

Mains: 125-250-Volt 3 Wire; 125-Volt 2 Wire; 2-Fuse Branches

Branches: 125-Volt, Arranged for Plug Fuses

Cat. No.	No. of Circuits	No. of Switch Mountings	BOX DIMENSIONS, INCHES			Weight Pounds	Price Each
			Width	Height	Inside Depth		
66404	4	4	9½	18½	3½	20	\$12.50
66406	6	8	9½	24½	3½	24	18.50
66408	8	8	9½	27½	3½	27	23.20
66410	10	12	9½	35	3½	31	26.40
66412	12	12	9½	38	3½	36	30.50

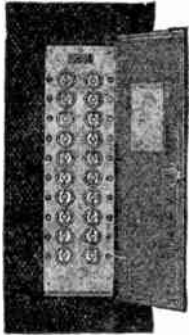
## Benjamin Panel Boards and Cabinets

### Type NPG Panels with Cabinets

3-Wire Service—1-Fuse Branches

Mains: 125-250-Volt

Branches: 125-Volt Arranged for Plug Fuses Only



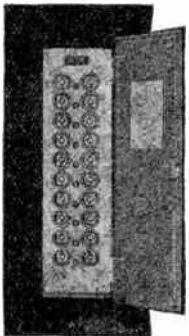
No. of Cir.	PANEL WITH CABINET		Gutter Space Inches	BOX DIMENSIONS, INCHES			Shipping Weight Pounds	Price Each
	Surface Mfrs. No.	Flush Mfrs. No.		Wide Outside	High Outside	Deep Inside		
4	60104	60154	3	11½	13½	3¾	22	\$16.00
6	60106	60156	3	11½	15	3¾	27	18.00
8	60108	60158	3	11½	16½	3¾	32	20.00
10	60110	60160	3	11½	18	3¾	37	22.00
12	60112	60162	3	11½	19½	3¾	42	24.00
14	60114	60164	3	11½	21	3¾	47	27.00
16	60116	60166	3	11½	22½	3¾	52	30.00
18	60118	60168	3	11½	24	3¾	57	32.00
20	60120	60170	3	11½	25½	3¾	62	34.00

### Type PG Panels with Cabinets

2 and 3-Wire Service—2-Fuse Branches

Mains: 125-250-Volt 3-Wire, 125-Volt 2-Wire

Branches: 125-Volt Arranged for Plug Fuses Only



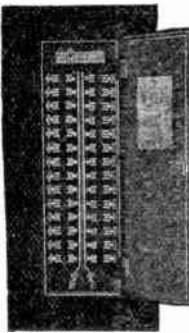
No. of Cir.	PANEL WITH CABINET		Gutter Space Inches	BOX DIMENSIONS, INCHES			Shipping Weight Pounds	Price Each
	Surface Mfrs. No.	Flush Mfrs. No.		Wide Outside	High Outside	Deep Inside		
4	60204	60254	3	11½	16½	3¾	17	\$16.00
6	60206	60256	3	11½	19½	3¾	20	22.00
8	60208	60258	3	11½	22½	3¾	22	26.00
10	60210	60260	3	11½	25½	3¾	24	30.00
12	60212	60262	3	11½	28½	3¾	27	34.00
14	60214	60264	3	11½	31½	3¾	30	40.00
16	60216	60266	3	11½	34½	3¾	32	44.00
18	60218	60268	3	11½	37½	3¾	34	50.00
20	60220	60270	3	11½	40½	3¾	37	54.00

### Type NCG Panels with Cabinets

3-Wire Service—1-Fuse Branches

Mains: 125-250-Volt

Branches: 125-Volt Arranged for Cartridge Fuses Only



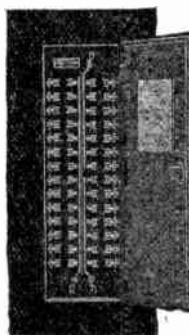
No. of Cir.	PANEL WITH CABINET		Gutter Space Inches	BOX DIMENSIONS, INCHES			Shipping Weight Pounds	Price Each
	Surface Mfrs. No.	Flush Mfrs. No.		Wide Outside	High Outside	Deep Inside		
4	60304	60354	3	13¾	15½	3¾	24	\$17.00
6	60306	60356	3	13¾	17	3¾	30	19.50
8	60308	60358	3	13¾	18½	3¾	35	22.00
10	60310	60360	3	13¾	20	3¾	41	24.00
12	60312	60362	3	13¾	21½	3¾	46	26.00
14	60314	60364	3	13¾	23	3¾	52	29.50
16	60316	60366	3	13¾	24½	3¾	57	33.00
18	60318	60368	3	13¾	26	3¾	63	35.00
20	60320	60370	3	13¾	27½	3¾	68	37.00

### Type CG Panels with Cabinets

2 and 3-Wire Service—2-Fuse Branches

Mains: 125-250-Volt 3-Wire, 125-Volt 2-Wire

Branches: 125-250-Volt Arranged for Cartridge Fuses Only



No. of Cir.	PANEL WITH CABINET		Gutter Space Inches	BOX DIMENSIONS, INCHES			Shipping Weight Pounds	Price Each
	Surface Mfrs. No.	Flush Mfrs. No.		Wide Outside	High Outside	Deep Inside		
4	60404	60454	3	13¾	18½	3¾	19	\$17.00
6	60406	60456	3	13¾	21½	3¾	22	24.00
8	60408	60458	3	13¾	24½	3¾	24	28.00
10	60410	60460	3	13¾	27½	3¾	26	32.00
12	60412	60462	3	13¾	30½	3¾	30	36.00
14	60414	60464	3	13¾	33½	3¾	33	43.00
16	60416	60466	3	13¾	36½	3¾	35	47.00
18	60418	60468	3	13¾	39½	3¾	37	50.00
20	60420	60470	3	13¾	42½	3¾	41	57.00

## Benjamin Type NSPT Safety Panels and Type NLPT Protective Panels with Cabinets

3-Wire Mains, 1-Fuse Branches

Branches: 2-Wire; 30-Ampere, 250-Volt Heavy Duty Tumbler Switches; Plug Fuses Mains; 125-250-Volt

### Panels with Main Lugs Only



With Main Lugs Only

No. of Circuits	DOOR-IN-DOOR CABINET		Each	†SINGLE DOOR CABINET		Each	Capacity of Mains Amperes	Gutter Space Inches	*Box No.	Approx. Weight Pounds
	PANEL WITH SURFACE CAT. NO.	CABINET FLUSH CAT. NO.		PANEL WITH SURFACE CAT. NO.	CABINET FLUSH CAT. NO.					
4	52004	52104	\$50.00	54404	54504	\$34.00	30	4	R18	90
8	52008	52108	60.00	54408	54508	40.00	60	4	R21	105
12	52012	52112	70.00	54412	54512	50.00	60	4	R24	120
16	52016	52116	86.00	54416	54516	74.00	100	4	R27	135
20	52020	52120	96.00	54420	54520	84.00	100	4	R30	150
24	52024	52124	106.00	54424	54524	94.00	100	4	R33	165
28	52028	52128	116.00	54428	54528	104.00	100	4	R36	180
32	52032	52132	126.00	54432	54532	114.00	100	4	R39	195
36	52036	52136	152.00	54436	54536	140.00	200	4	R42	210
40	52040	52140	162.00	54440	54540	150.00	200	4	R45	225



With Fusible Mains

### Panels with Fusible Mains

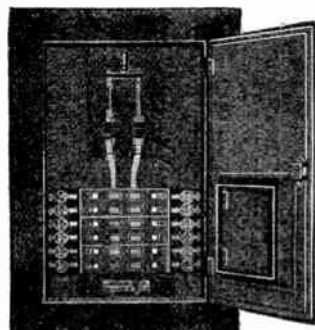
4	52204	52304	\$62.00	54604	54704	\$46.00	30	4	R21	105
8	52208	52308	74.00	54608	54708	58.00	60	4	R24	120
12	52212	52312	86.00	54612	54712	70.00	60	4	R27	135
16	52216	52316	102.00	54616	54716	90.00	100	4	R36	180
20	52220	52320	114.00	54620	54720	102.00	100	4	R39	195
24	52224	52324	126.00	54624	54724	114.00	100	4	R42	210
28	52228	52328	138.00	54628	54728	126.00	100	4	R45	225
32	52232	52332	150.00	54632	54732	138.00	100	4	R48	240
36	52236	52336	178.00	54636	54736	166.00	200	4	R54	270
40	52240	52340	190.00	54640	54740	178.00	200	4	R57	285



With Fusible Main Brush Type Switch

### Panels with Fusible Main Brush Type Switch

4	52404	52504	\$80.00	54804	54904	\$64.00	30	4	R30	135
8	52408	52508	90.00	54808	54908	74.00	60	4	R33	150
12	52412	52512	102.00	54812	54912	86.00	60	4	R36	165
16	52416	52516	122.00	54816	54916	110.00	100	4	R42	195
20	52420	52520	134.00	54820	54920	122.00	100	4	R45	210
24	52424	52524	146.00	54824	54924	134.00	100	4	R48	225
28	52428	52528	158.00	54828	54928	146.00	100	4	R51	240
32	52432	52532	170.00	54832	54932	158.00	100	4	R54	255
36	52436	52536	218.00	54836	54936	206.00	200	4	V60	290
40	52440	52540	230.00	54840	54940	218.00	200	4	V63	310



With Fusible Main Knife Switch

### Panels with Fusible Main Knife Switch

4	52604	52704	\$80.00	55004	55104	\$64.00	30	4	R27	135
8	52608	52708	90.00	55008	55108	74.00	60	4	R33	150
12	52612	52712	102.00	55012	55112	86.00	60	4	R36	165
16	52616	52716	122.00	55016	55116	110.00	100	4	R42	195
20	52620	52720	134.00	55020	55120	122.00	100	4	R45	210
24	52624	52724	146.00	55024	55124	134.00	100	4	R48	225
28	52628	52728	158.00	55028	55128	146.00	100	4	R51	240
32	52632	52732	170.00	55032	55132	158.00	100	4	R54	255
36	52636	52736	218.00	55036	55136	206.00	200	4	V60	290
40	52640	52740	230.00	55040	55140	218.00	200	4	V63	310

\*Box dimensions in inches are given in complete table on one of the following pages.

†Door-in-door cabinets are illustrated, single door cabinets are identical except for door construction.

Panels with unfused main switches can be furnished at same prices as panels with fusible main switches.

Panels arranged for cartridge fuses, but otherwise the same as panels listed on this page, will be furnished at the above prices.



**Benjamin Type SPT Safety Panels with Cabinets**

**2-Fuse Branches—Door-in-Door Cabinet**

Branches: 2-Wire; 30-Ampere, 250-Volt Heavy Duty Tumbler Switches; Plug Fuses

**Panels with Main Lugs Only**



With Main Lugs Only

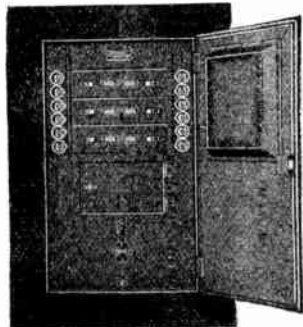
No. of Circuits	3-WIRE MAINS, 125-250 VOLT			Capacity of Mains Amperes	*Box No.	2-WIRE MAINS, 125 VOLT			Capacity of Mains Amperes	*Box No.
	PANEL WITH SURFACE CAT. NO.	CABINET FLUSH CAT. NO.	Each			PANEL WITH SURFACE CAT. NO.	CABINET FLUSH CAT. NO.	Each		
4	90404	90454	\$58.00	30	R21	90004	90054	\$62.00	60	R21
6	90406	90456	68.00	60	R24	90006	90056	68.00	100	R24
8	90408	90458	78.00	60	R27	90008	90058	78.00	100	R27
10	90410	90460	88.00	60	R30	90010	90060	88.00	100	R30
12	90412	90462	98.00	60	R33	90012	90062	98.00	200	R33
14	90414	90464	106.00	100	R36	90014	90064	110.00	200	R36
16	90416	90466	116.00	100	R39	90016	90066	120.00	200	R39
18	90418	90468	126.00	100	R42	90018	90068	130.00	200	R42
20	90420	90470	140.00	100	R45	90020	90070	140.00	200	R45



With Fusible Mains

**Panels with Fusible Mains**

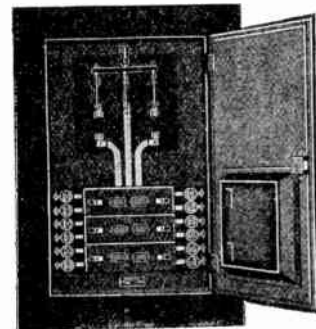
4	90804	90854	\$68.00	30	R24	90104	90154	\$74.00	60	R24
6	90806	90856	78.00	60	R27	90106	90156	86.00	100	R27
8	90808	90858	88.00	60	R30	90108	90158	96.00	100	R30
10	90810	90860	98.00	60	R33	90110	90160	106.00	100	R33
12	90812	90862	108.00	60	R36	90112	90162	126.00	200	R36
14	90814	90864	128.00	100	R45	90114	90164	136.00	200	R45
16	90816	90866	138.00	100	R48	90116	90166	146.00	200	R48
18	90818	90868	148.00	100	R51	90118	90168	156.00	200	R51
20	90820	90870	158.00	100	R54	90120	90170	166.00	200	R54



With Fusible Main Brush Type Switch

**Panels with Fusible Main Brush Type Switch**

4	90904	90954	\$86.00	30	R33	90204	90254	\$88.00	60	R33
6	90906	90956	96.00	60	R36	90206	90256	108.00	100	R36
8	90908	90958	106.00	60	R39	90208	90258	118.00	100	R39
10	90910	90960	116.00	60	R42	90210	90260	128.00	100	R42
12	90912	90962	126.00	60	R45	90212	90262	160.00	200	R45
14	90914	90964	146.00	100	R51	90214	90264	170.00	200	R51
16	90916	90966	156.00	100	R54	90216	90266	190.00	200	R54
18	90918	90968	166.00	100	R57	90218	90268	200.00	200	R57
20	90920	90970	182.00	100	R60	90220	90270	210.00	200	R60



With Fusible Main Knife Switch

**Panels with Fusible Main Knife Switch**

4	91004	91054	\$86.00	30	R33	90304	90354	\$88.00	60	R33
6	91006	91056	96.00	60	R36	90306	90356	108.00	100	R36
8	91008	91058	106.00	60	R39	90308	90358	118.00	100	R39
10	91010	91060	116.00	60	R42	90310	90360	128.00	100	R42
12	91012	91062	126.00	60	R45	90312	90362	160.00	200	R45
14	91014	91064	146.00	100	R51	90314	90364	170.00	200	R51
16	91016	91066	156.00	100	R54	90316	90366	190.00	200	R54
18	91018	91068	166.00	100	R57	90318	90368	200.00	200	R57
20	91020	91070	182.00	100	R60	90320	90370	210.00	200	R60

\*Box dimensions in inches are given in complete table on one of the following pages.

Gutter space of all above panels is 4 inches.

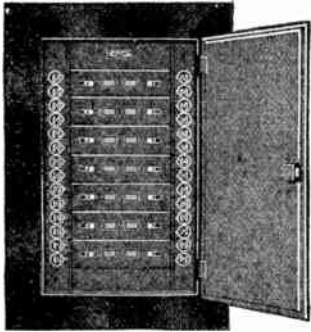
Panels with unfused main switches can be furnished at same prices as panels with fusible main switches.

Note—Panels arranged for cartridge fuses, but otherwise the same as panels listed on this page, will be furnished at the above prices.

## Benjamin Type LPT Protective Panels with Cabinets

### 2-Fuse Branches—Single Door Cabinet

Branches: 2-Wire; 30 Ampere, 250-Volt Heavy Duty Tumbler Switches; Plug Fuses  
Mains: 125-250 Volt



With Main Lugs Only

#### Panels with Main Lugs Only

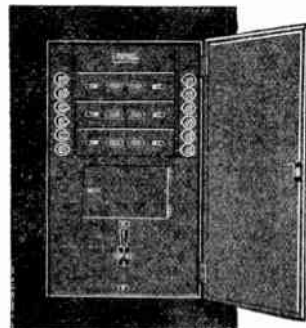
No. of Circuits	2-WIRE MAINS—125-250 VOLT			Capacity of Mains Amperes	*Box No.	2-WIRE MAINS—125 VOLT			Capacity of Mains Amperes	*Box No.	Approx. Weight Pounds
	PANEL WITH SURFACE CAT. NO.	CABINET FLUSH CAT. NO.	Each			PANEL WITH SURFACE CAT. NO.	CABINET FLUSH CAT. NO.	Each			
4	94104	94154	\$38.00	30	R21	93404	93454	\$42.00	60	R21	105
6	94106	94156	48.00	60	R24	93406	93456	52.00	100	R24	120
8	94108	94158	58.00	60	R27	93408	93458	62.00	100	R27	135
10	94110	94160	68.00	60	R30	93410	93460	72.00	100	R30	150
12	94112	94162	78.00	60	R33	93412	93462	82.00	200	R33	165
14	94114	94164	90.00	100	R36	93414	93464	94.00	200	R36	180
16	94116	94166	100.00	100	R39	93416	93466	104.00	200	R39	195
18	94118	94168	110.00	100	R42	93418	93468	114.00	200	R42	210
20	94120	94170	124.00	100	R45	93420	93470	124.00	200	R45	225



With Fusible Mains

#### Panels with Fusible Mains

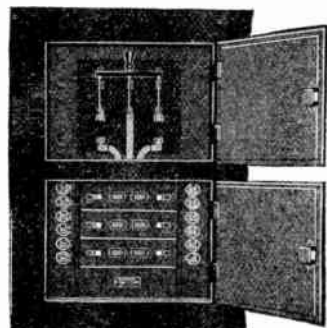
4	94204	94254	\$52.00	30	R21	93804	93854	\$58.00	60	R24	120
6	94206	94256	62.00	60	R27	93806	93856	70.00	100	R33	135
8	94208	94258	72.00	60	R30	93808	93858	80.00	100	R36	150
10	94210	94260	82.00	60	R33	93810	93860	90.00	100	R39	165
12	94212	94262	92.00	60	R36	93812	93862	110.00	200	R45	180
14	94214	94264	112.00	100	R45	93814	93864	120.00	200	R48	225
16	94216	94266	122.00	100	R48	93816	93866	130.00	200	R51	240
18	94218	94268	132.00	100	R51	93818	93868	140.00	200	R54	255
20	94220	94270	142.00	100	R54	93820	93870	150.00	200	R57	270



With Fusible Main Brush Type Switch

#### Panels with Fusible Main Brush Type Switch

4	94304	94354	\$70.00	30	R33	93904	93954	\$72.00	60	R33	150
6	94306	94356	80.00	60	R36	93906	93956	92.00	100	R39	165
8	94308	94358	90.00	60	R39	93908	93958	102.00	100	R42	180
10	94310	94360	100.00	60	R42	93910	93960	112.00	100	R45	195
12	94312	94362	110.00	60	R45	93912	93962	144.00	200	V51	210
14	94314	94364	130.00	100	R51	93914	93964	154.00	200	V54	240
16	94316	94366	140.00	100	R54	93916	93966	174.00	200	V57	255
18	94318	94368	150.00	100	R57	93918	93968	184.00	200	V60	270
20	94320	94370	166.00	100	R60	93920	93970	194.00	200	V63	290



With Fusible Main Knife Switch

#### Panels with Fusible Main Knife Switch

4	94404	94454	\$70.00	30	R30	94004	94054	\$72.00	60	R33	150
6	94406	94456	80.00	60	R36	94006	94056	92.00	100	R39	165
8	94408	94458	90.00	60	R39	94008	94058	102.00	100	R42	180
10	94410	94460	100.00	60	R42	94010	94060	112.00	100	R45	195
12	94412	94462	110.00	60	R45	94012	94062	144.00	200	V51	210
14	94414	94464	130.00	100	R51	94014	94064	154.00	200	V54	240
16	94416	94466	140.00	100	R54	94016	94066	174.00	200	V57	255
18	94418	94468	150.00	100	R57	94018	94068	184.00	200	V60	270
20	94420	94470	166.00	100	R60	94020	94070	194.00	200	V63	290

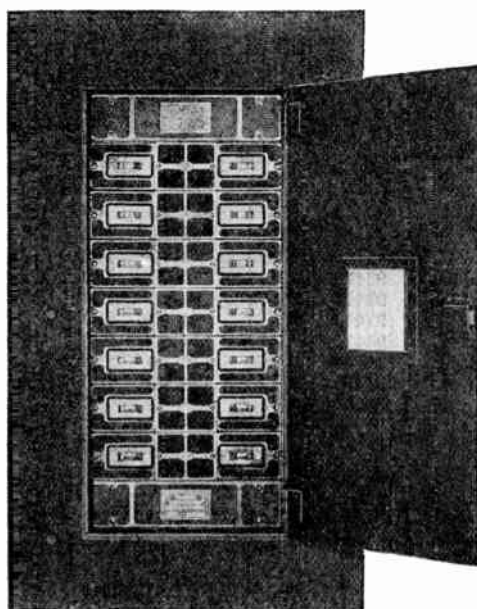
\*Box dimensions in inches are given in complete table on one of the following pages.

Gutter space for above panels is 4 inches.

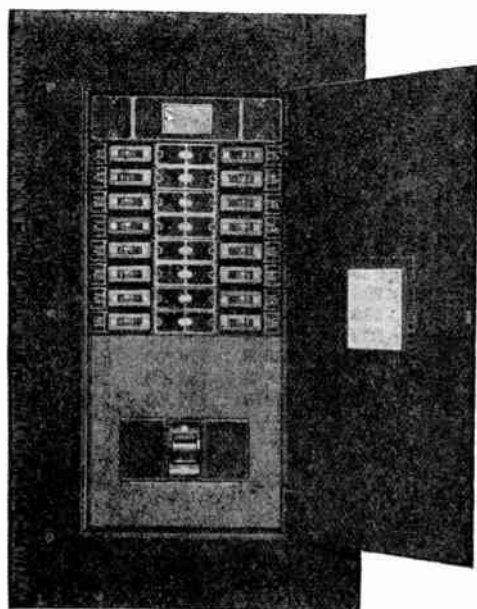
Panels with unfused main switches can be furnished at same prices as panels with fusible main switches.

Note.—Panels arranged for cartridge fuses, but otherwise the same as panels listed on this page, will be furnished at the above prices.

**Benjamin Nofuse Panelboards and Cabinets**



Type A2B Panelboard with Lugs in Mains



Type NA1B Panelboard with Main Circuit Breaker

**List Price Additions for Increased Main Bus Capacity**

Type of Panel	For Main Lugs Only					
	50 Amps. to 100 Amps.	Increase to Box Height	50 Amps. to 200 Amps.	Increase to Box Height	100 Amps. to 200 Amps.	Increase to Box Height
NA1B-3-L	\$4.00	None	\$6.00	None	\$5.00	None
A2B-2-L	4.00	None	6.00	None	5.00	None
NA2B-3-L	4.00	None	6.00	None	5.00	None
NA1B-4-L	5.00	None	8.00	None	7.00	None
A2B-3-L	5.00	None	8.00	None	7.00	None

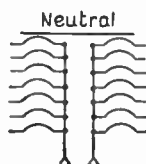
  

Type of Panel	For Circuit Breaker In Mains					
NA1B-3-AB	\$27.00	None	\$80.00	6	\$60.00	6
A2B-2-AB	27.00	None	80.00	6	60.00	6
NA2B-3-AB	27.00	None	80.00	6	60.00	6
NA1B-4-AB	35.00	None	110.00	6	78.00	6
A2B-3-AB	35.00	None	110.00	6	78.00	6

**Benjamin Nofuse Lighting Panelboards With Cabinets**

**Safety Type NA1B-3-L**

**Single Pole, Solid Neutral**



**MAINS.**—125-250 volts, 3 wire solid neutral.

**BRANCHES.**—125 volts, 2 wire with 15\* ampere, 125 volts, single pole circuit breakers.

**BOXES.**—Code gauge galvanized steel, 4-inch gutters.

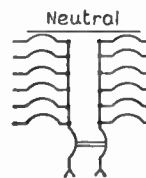
**FRONTS.**—Code gauge full finish steel, black finish, plush or surface type.

**Main Lugs Only**

No. Cir.	Panel With Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Ht.	Box Dpth.	Ins. Depth	Ship. Wt. Lbs.
4	NA1B-304-L050	\$49.00	50	C17	20	17	5 1/2	75	
6	NA1B-306-L050	59.00	50	C20	20	20	5 1/2	86	
8	NA1B-308-L050	70.00	50	C20	20	20	5 1/2	95	
10	NA1B-310-L050	81.00	50	C23	20	23	5 1/2	101	
12	NA1B-312-L100	95.00	100	C23	20	23	5 1/2	105	
14	NA1B-314-L100	107.00	100	C26	20	26	5 1/2	112	
16	NA1B-316-L100	119.00	100	C26	20	26	5 1/2	120	
18	NA1B-318-L100	131.00	100	C29	20	29	5 1/2	127	
20	NA1B-320-L100	143.00	100	C29	20	29	5 1/2	135	
22	NA1B-322-L100	155.00	100	C32	20	32	5 1/2	142	
24	NA1B-324-L100	167.00	100	C32	20	32	5 1/2	150	
26	NA1B-326-L100	179.00	100	C35	20	35	5 1/2	155	
28	NA1B-328-L100	191.00	100	C35	20	35	5 1/2	160	
30	NA1B-330-L100	203.00	100	C38	20	38	5 1/2	179	
32	NA1B-332-L100	215.00	100	C38	20	38	5 1/2	185	
34	NA1B-334-L200	238.00	200	C44	20	44	5 1/2	200	
36	NA1B-336-L200	251.00	200	C44	20	44	5 1/2	215	
38	NA1B-338-L200	264.00	200	C47	20	47	5 1/2	222	
40	NA1B-340-L200	277.00	200	C47	20	47	5 1/2	230	

**Safety Type NA1B-3AB**

**Single Pole, Solid Neutral**



**MAINS.**—125-250 volts, 3 wire solid neutral.

**BRANCHES.**—125 volts, 2 wire with 15\* ampere, 125 volts, single pole circuit breakers.

**BOXES.**—Code gauge galvanized steel, 4-inch gutters.

**FRONTS.**—Code gauge, full finish steel, black finish, plush or surface type.

**Main Circuit Breaker**

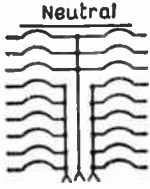
No. Cir.	Panel With Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Ht.	Box Dpth.	Ins. Depth	Ship. Wt. Lbs.
4	NA1B-304-AB050	\$71.00	50	C26	20	26	5 1/2	105	
6	NA1B-306-AB050	81.00	50	C29	20	29	5 1/2	112	
8	NA1B-308-AB050	92.00	50	C29	20	29	5 1/2	125	
10	NA1B-310-AB050	103.00	50	C32	20	32	5 1/2	130	
12	NA1B-312-AB100	138.00	100	C32	20	32	5 1/2	140	
14	NA1B-314-AB100	150.00	100	C35	20	35	5 1/2	145	
16	NA1B-316-AB100	162.00	100	C35	20	35	5 1/2	150	
18	NA1B-318-AB100	174.00	100	C38	20	38	5 1/2	160	
20	NA1B-320-AB100	186.00	100	C38	20	38	5 1/2	170	
22	NA1B-322-AB100	202.00	100	C41	20	41	5 1/2	182	
24	NA1B-324-AB100	214.00	100	C41	20	41	5 1/2	195	
26	NA1B-326-AB100	226.00	100	C44	20	44	5 1/2	202	
28	NA1B-328-AB100	238.00	100	C44	20	44	5 1/2	210	
30	NA1B-330-AB100	250.00	100	C47	20	47	5 1/2	217	
32	NA1B-332-AB100	262.00	100	C47	20	47	5 1/2	225	
34	NA1B-334-AB200	345.00	200	C59	20	59	5 1/2	255	
36	NA1B-336-AB200	358.00	200	C59	20	59	5 1/2	275	
38	NA1B-338-AB200	371.00	200	C62	20	62	5 1/2	300	
40	NA1B-340-AB200	384.00	200	C62	20	62	5 1/2	325	

\*Prices are based on supplying 15-ampere breakers; 20 and 25-ampere breakers can be supplied at same price except increased bus bar capacity may be required and should be added. 35 and 50-ampere breakers can be supplied at \$1.00 extra per circuit, plus increased main bus bar.



## Benjamin Nofuse Lighting Panelboards With Cabinets

### Safety Type NA1B-4-L Single Pole, Solid Neutral



**MAINS.**—125-250 volts, 3 phase, 4 wire solid neutral.

**BRANCHES.**—125 volts, 2 wire with 15\* ampere, 125 volts, single pole circuit breakers.

**BOXES.**—Code gauge galvanized steel, 4-inch gutters.

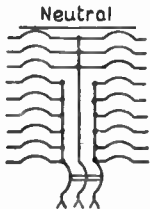
**FRONTS.**—Code gauge full finish steel, black finish, flush or surface type.

#### Main Lugs Only

No. Cir.	Panel with Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Height	Box Depth	Ins. Wt., Lbs.	Ship.
4	NA1B-404-L050	\$51.00	50	C17	20	17	5 1/2	75	
6	NA1B-406-L050	62.00	50	C20	20	20	5 1/2	86	
8	NA1B-408-L050	73.00	50	C20	20	20	5 1/2	95	
10	NA1B-410-L050	85.00	50	C23	20	23	5 1/2	101	
12	NA1B-412-L050	96.00	50	C23	20	23	5 1/2	105	
14	NA1B-414-L050	108.00	50	C26	20	26	5 1/2	112	
16	NA1B-416-L100	122.00	100	C26	20	26	5 1/2	120	
18	NA1B-418-L100	134.00	100	C29	20	29	5 1/2	127	
20	NA1B-420-L100	146.00	100	C29	20	29	5 1/2	135	
22	NA1B-422-L100	158.00	100	C32	20	32	5 1/2	142	
24	NA1B-424-L100	170.00	100	C32	20	32	5 1/2	150	
26	NA1B-426-L100	182.00	100	C35	20	35	5 1/2	155	
28	NA1B-428-L100	194.00	100	C35	20	35	5 1/2	160	
30	NA1B-430-L100	206.00	100	C38	20	38	5 1/2	179	
32	NA1B-432-L100	218.00	100	C38	20	39	5 1/2	185	
34	NA1B-434-L100	238.00	100	C44	20	44	5 1/2	200	
36	NA1B-436-L100	251.00	100	C44	20	44	5 1/2	215	
38	NA1B-438-L100	264.00	100	C47	20	47	5 1/2	222	
40	NA1B-440-L100	277.00	100	C47	20	47	5 1/2	230	

### Safety Type NA1B-4-AB

#### Single Pole, Solid Neutral



**MAINS.**—125-250 volts, 3 phase, 4 wire solid neutral.

**BRANCHES.**—125 volts, 2 wire with 15\* ampere, 125 volts, single pole circuit breakers.

**BOXES.**—Code gauge galvanized steel, 4-inch gutters.

**FRONTS.**—Code gauge full finish steel, black finish steel, black finish, flush or surface type.

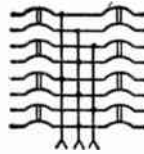
#### Main Circuit Breaker

No. Cir.	Panel with Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Height	Box Depth	Ins. Wt., Lbs.	Ship.
4	NA1B-404-AB050	\$79.00	50	C26	20	26	5 1/2	105	
6	NA1B-406-AB050	90.00	50	C29	20	29	5 1/2	112	
8	NA1B-408-AB050	101.00	50	C29	20	29	5 1/2	120	
10	NA1B-410-AB050	113.00	50	C32	20	32	5 1/2	133	
12	NA1B-412-AB050	124.00	50	C32	20	32	5 1/2	145	
14	NA1B-414-AB050	136.00	50	C35	20	35	5 1/2	150	
16	NA1B-416-AB100	180.00	100	C35	20	35	5 1/2	155	
18	NA1B-418-AB100	191.00	100	C38	20	38	5 1/2	165	
20	NA1B-420-AB100	203.00	100	C38	20	38	5 1/2	175	
22	NA1B-422-AB100	219.00	100	C41	20	41	5 1/2	187	
24	NA1B-424-AB100	231.00	100	C41	20	41	5 1/2	200	
26	NA1B-426-AB100	243.00	100	C44	20	44	5 1/2	207	
28	NA1B-428-AB100	255.00	100	C44	20	44	5 1/2	215	
30	NA1B-430-AB100	267.00	100	C47	20	47	5 1/2	222	
32	NA1B-432-AB100	279.00	100	C47	20	47	5 1/2	230	
34	NA1B-434-AB100	296.00	100	C53	20	53	5 1/2	243	
36	NA1B-436-AB100	309.00	100	C53	20	53	5 1/2	255	
38	NA1B-438-AB100	322.00	100	C56	20	56	5 1/2	270	
40	NA1B-440-AB100	335.00	100	C56	20	56	5 1/2	285	

\*List prices are based on supplying 15-ampere breakers; 20 and 25-ampere breakers can be supplied at same price except increased bus bar capacity may be required and should be added. 35 and 50-ampere breakers can be supplied at \$1.00 extra per circuit, plus increased main bus bar capacity.

## Benjamin Nofuse Lighting Panelboards With Cabinets

### Safety Types A2B-3L and A2B-3-AB Double Pole



**MAINS.**—125-250 volts, 3 wire.

**BRANCHES.**—125 volts, 2 wire with 15\* ampere, double pole circuit breakers.

**BOXES.**—Code gauge galvanized steel, 4-inch gutters.

**FRONTS.**—Code gauge, full finish steel, black finish, flush or surface type.

#### Type A2B-3-L Main Lugs Only

No. Cir.	Panel with Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Height	Box Depth	Ins. Wt., Lbs.	Ship.
4	A2B-304-L050	\$72.00	50	C20	20	20	5 1/2	85	
6	A2B-306-L050	95.00	50	C23	20	23	5 1/2	95	
8	A2B-308-L050	119.00	50	C26	20	26	5 1/2	110	
10	A2B-310-L050	143.00	50	C29	20	29	5 1/2	125	
12	A2B-312-L100	172.00	100	C32	20	32	5 1/2	140	
14	A2B-314-L100	196.00	100	C35	20	35	5 1/2	150	
16	A2B-316-L100	222.00	100	C38	20	38	5 1/2	170	
18	A2B-318-L100	251.00	100	C41	20	41	5 1/2	195	
20	A2B-320-L100	277.00	100	C44	20	44	5 1/2	210	

#### Type A2B-3-AB Main Circuit Breaker

No. Cir.	Panel with Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Height	Box Depth	Ins. Wt., Lbs.	Ship.
4	A2B-304-AB050	\$100.00	50	C29	20	29	5 1/2	120	
6	A2B-306-AB050	123.00	50	C32	20	32	5 1/2	135	
8	A2B-308-AB050	147.00	50	C35	20	35	5 1/2	145	
10	A2B-310-AB050	171.00	50	C38	20	38	5 1/2	165	
12	A2B-312-AB100	230.00	100	C41	20	41	5 1/2	190	
14	A2B-314-AB100	258.00	100	C44	20	44	5 1/2	205	
16	A2B-316-AB100	282.00	100	C47	20	47	5 1/2	220	
18	A2B-318-AB100	308.00	100	C50	20	50	5 1/2	235	
20	A2B-320-AB100	334.00	100	C53	20	53	5 1/2	250	

### Safety Types A2B-2-L and A2B-2-AB

#### Double Pole

**MAINS.**—125 volts, 2 wire a.c. or d.c.

**BRANCHES.**—125 volts, 2 wire with 15\* ampere, double pole circuit breakers.

**BOXES.**—Code gauge, galvanized steel, 4-inch gutters.

**FRONTS.**—Code gauge, full finish steel, black finish, flush or surface type.

#### Type A2B-2-L Main Lugs Only

No. Cir.	Panel with Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Height	Box Depth	Ins. Wt., Lbs.	Ship.
4	A2B-204-L050	\$70.00	50	C20	20	20	5 1/2	85	
6	A2B-206-L100	96.00	100	C23	20	23	5 1/2	95	
8	A2B-208-L100	120.00	100	C26	20	26	5 1/2	115	
10	A2B-210-L100	146.00	100	C29	20	29	5 1/2	125	
12	A2B-212-L200	174.00	200	C32	20	32	5 1/2	140	
14	A2B-214-L200	200.00	200	C35	20	35	5 1/2	155	
16	A2B-216-L200	226.00	200	C38	20	38	5 1/2	170	
18	A2B-218-L200	256.00	200	C41	20	41	5 1/2	200	
20	A2B-220-L200	282.00	200	C44	20	44	5 1/2	215	

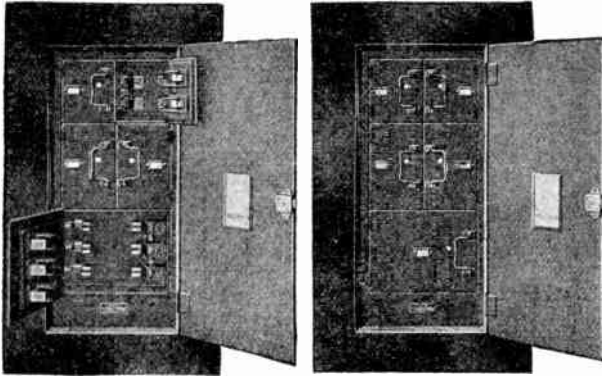
#### Type A2B-2-AB Main Circuit Breaker

No. Cir.	Panel with Cabinet	*Each	Main Amps.	Box No.	Box Width	Box Height	Box Depth	Ins. Wt., Lbs.	Ship.
4	A2B-204-AB050	\$92.00	50	C29	20	29	5 1/2	115	
6	A2B-206-AB100	139.00	100	C32	20	32	5 1/2	130	
8	A2B-208-AB100	163.00	100	C35	20	35	5 1/2	145	
10	A2B-210-AB100	189.00	100	C38	20	38	5 1/2	160	
12	A2B-212-AB200	284.00	200	C47	20	47	5 1/2	215	
14	A2B-214-AB200	310.00	200	C50	20	50	5 1/2	230	
16	A2B-216-AB200	336.00	200	C53	20	53	5 1/2	245	
18	A2B-218-AB200	362.00	200	C56	20	56	5 1/2	260	
20	A2B-220-AB200	388.00	200	C59	20	59	5 1/2	275	

\*List prices are based on supplying 15-ampere breakers; 20 and 25-ampere breakers can be supplied at same price, except increased bus bar capacity may be required and should be added. 35 and 50-ampere breakers can be supplied at \$2.00 extra per circuit, plus increased bus bar capacity.

**Benjamin Convertible Safuswitch Panelboards**

Dead Front Distribution  
Light and Power Panelboards and Cabinets



**Base List Price**

Includes Main Lugs, Bus Bars, Box and Trim  
2 Wire Mains—2 Wire Branches  
3 Wire Mains—3 Wire Branches  
125 or 250 Volts

Branch Circuits	MAIN LUGS AND BUS BARS				
	200A	400A	600A	800A	1200A
200A or less	\$20.00	\$30.00	\$50.00	\$80.00	\$125.00
400A or less	.....	50.00	70.00	110.00	150.00
Over 400A	.....	.....	100.00	150.00	190.00

Panels with 30, 60 or 100 ampere circuits only, no longer, deduct \$10.00 from base price, mains not over 600 amps.

Panels may be used for 4/4 wire, 125-250 volts by adding neutral bar.

Main switch, figure as branch, be sure to include main lugs and bus bars.

3 Wire Mains—3 Wire Branches  
600 Volts or Less

200A or less	\$37.00	\$47.00	\$67.00	\$93.00	\$137.00
400A or less	.....	69.00	87.00	124.00	162.00
Over 400A	.....	.....	110.00	162.00	200.00

**Circuit List Price**

Includes Circuit Section Complete

2 and 3 Wire 250 Volt      2 and 3 Wire 600 Volt

Amp. Cap.	Complete Section Each	Space Only For Sec. Each	Amp. Cap.	Complete Section Each	Space Only For Sec. Each
30-30A	\$17.00	\$5.80	30-30A	\$37.00	\$11.50
60-60A	24.00	8.75	60-60A	37.00	11.50

For One Circuit, Single Branch

100A	\$18.00	\$5.75	100A	\$37.00	\$11.50
200A	42.00	11.50	200A	81.00	16.75
400A	97.00	16.75	400A	152.00	56.00
600A	160.00	56.00	.....	.....	.....

Three Pole Branch Circuits for Two Circuits, Double Branch

30-30A	\$17.00	\$5.80	30-30A	\$48.00	\$16.75
60-60A	33.00	11.50	60-60A	48.00	16.75

For One Circuit, Single Branch

100A	\$27.00	\$8.35	100A	\$48.00	\$16.75
200A	63.00	16.75	200A	95.00	25.00
400A	146.00	25.50	400A	190.00	56.00
600A	210.00	56.00	600A	270.00	72.00

**Additional Prices for Special Features**

Neutral Bars

3 wire single phase 110-220 volts solid neutral service. Cap. Main Lug.....	200A	400A	600A	800A	1200A
Add. for Panel Com. with Cabinet.....	\$14.00	25.00	30.00	40.00	63.00

Price includes neutral bar, main lug, lug for each branch circuit and portion of back plate, box and trim.

Sub-Feed, Through Feed or Double Lugs

4 wire, 3 phase 120-208 volts solid neutral service. Cap. Main Lug.....	200A	400A	600A	800A	1200A
Add. for Panel Com. with Cabinet.....	\$12.00	24.00	36.00	48.00	60.00

Price includes lugs and portion of bus bars, back plate, box and trim that may be necessary.

**Benjamin Panel Boards and Cabinets**

**Standard Galvanized Steel Boxes**

**CONSTRUCTION.**—One piece of code gauge galvanized steel, over-lapped and riveted at corners with 3/4-inch flange turned inwardly all around outside edges. This flange adds materially to the rigidity of the construction.

**GUTTER SPACE.**—All boxes for standard panel boards have 4-inch gutter space.

**DEPTH.**—Standard steel boxes are made deep enough to allow 1/8-inch clear space back of panel boards and not less than 1/2-inch clear space between door and current carrying parts on panel boards.

**DRILLING AND KNOCKOUTS.**—Boxes will be drilled for conduits without extra charge provided complete drilling information accompanies order. This information must be available before work can be commenced. On application, data sheets for laying out box drilling dimensions will be furnished.

A sufficient number of 1/2 and 3/4-inch knockouts are provided in top of cabinet to accommodate the total number of branch circuits supplied by the panel. One-half this number are provided in bottom of cabinet.

**FLUSH OR SURFACE ADAPTATION.**—All standard steel boxes are made with flanges turned inwardly and can, therefore, be used for either flush or surface installation.

Cat. No.	Gauge No.	BOX DIMENSIONS, INCHES			Approx. Shipping Weight Pounds	Price Each
		Width	Height	Inside Depth		
R-18	14	24 1/2	18	4 1/2	23	\$7.60
R-21	14	24 1/2	21	4 1/2	25	7.90
R-24	14	24 1/2	24	4 1/2	27	8.20
R-27	14	24 1/2	27	4 1/2	30	8.60
R-30	14	24 1/2	30	4 1/2	32	8.90
R-33	14	24 1/2	33	4 1/2	34	9.30
R-36	14	24 1/2	36	4 1/2	37	9.70
R-39	14	24 1/2	39	4 1/2	39	10.00
R-42	12	24 1/2	42	4 1/2	57	16.80
R-45	12	24 1/2	45	4 1/2	60	17.20
R-48	12	24 1/2	48	4 1/2	64	17.70
R-51	12	24 1/2	51	4 1/2	67	18.10
R-54	12	24 1/2	54	4 1/2	70	18.60
R-57	12	24 1/2	57	4 1/2	73	19.00
R-60	12	24 1/2	60	4 1/2	76	19.70
R-63	10	24 1/2	63	4 1/2	102	28.50
R-66	10	24 1/2	66	4 1/2	106	29.10
R-69	10	24 1/2	69	4 1/2	110	29.60
R-72	10	24 1/2	72	4 1/2	114	30.10
R-75	10	24 1/2	75	4 1/2	118	30.70
R-78	10	24 1/2	78	4 1/2	122	31.30
R-81	10	24 1/2	81	4 1/2	127	31.80
V-42	12	24 1/2	42	5 1/4	61	17.40
V-45	12	24 1/2	45	5 1/4	65	17.80
V-48	12	24 1/2	48	5 1/4	68	18.30
V-51	12	24 1/2	51	5 1/4	71	18.80
V-54	12	24 1/2	54	5 1/4	75	19.20
V-57	12	24 1/2	57	5 1/4	78	19.70
V-60	12	24 1/2	60	5 1/4	81	20.40
V-63	10	24 1/2	63	5 1/4	108	29.40
V-66	10	24 1/2	66	5 1/4	113	30.00
V-69	10	24 1/2	69	5 1/4	117	30.60
V-72	10	24 1/2	72	5 1/4	121	31.10
V-75	10	24 1/2	75	5 1/4	126	31.70
V-78	10	24 1/2	78	5 1/4	130	32.30
V-81	10	24 1/2	81	5 1/4	134	32.90

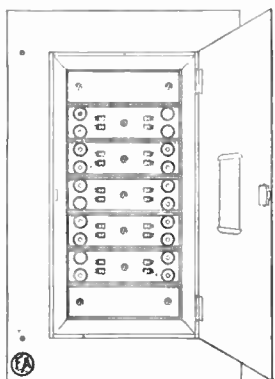
## FA Panelboard and Cabinet Units

### Explanation of Descriptive Catalogue Numbers

These catalogue listings were devised for your convenience and to enable us to give you better and faster service. Please note them carefully and use them in ordering.

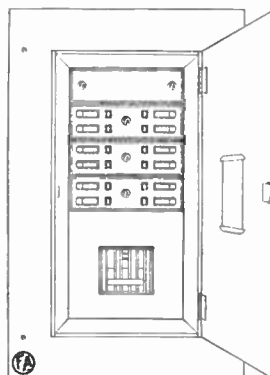
With this method of descriptive listing your order is fully understood in all details through the various

numerals and letters comprising each catalogue number. Should a clerical error be made when sending us the order the mistake will at once be noticed and inquiry made. This saves expensive shipments and a great deal of valuable time that occasionally is needlessly wasted when numerals and not descriptive listings are used.



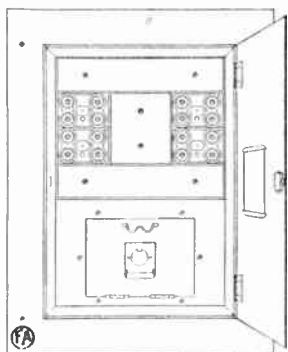
No. LNT1P20-3L100

- L—Leader Type
- N—Solid Neutral in Branches
- T1P—1-Pole Tumbler Switch with Plug Type Fuse Conn. in Branches
- 20—Number of Branches
- 3—3-Wire Mains
- L—Lugs Only for Main Connection
- 100—Ampere Capacity Main Bus Bar



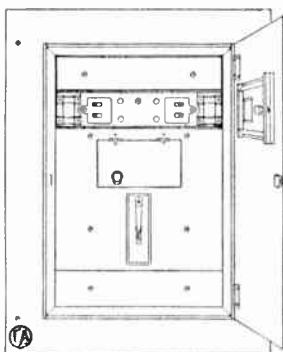
No. NA1B12-4AB050

- N—Solid Neutral in Branches
- A1B—Automatic 1-Pole Circuit Breaker in Branches
- 12—Number of Branches
- 4—3-Phase, 4-Wire Mains
- AB—Main Automatic Circuit Breaker
- 050—Ampere Capacity Main Bus Bar and Circuit Breaker



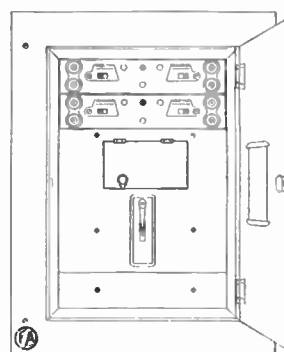
No. N1P16-3F100

- N—Solid Neutral in Branches
- 1P—1-Pole Plug Type Fuse Conn. in Branches
- 16—Number of Branches
- 3—3-Wire Mains
- F—Switchfuz Safety Type Main Fuse Disconnect
- 100—Ampere Capacity Main Bus Bar and Fuse Disconnect



No. NT1C04-3SF060D

- N—Solid Neutral in Branches
- T1C—1-Pole Tumbler Switch with Cartridge Type Fuse Conn. in Branches
- 04—Number of Branches
- 3—3-Wire Mains
- SF—Safety Type Fuslok Main Switch
- 060—Ampere Capacity Main Bus Bar and Switch
- D—Door in Door Construction Front



No. T2P04-2SF060

- T2P—2-Pole Tumbler Switch with Plug Type Fuse Conn. in Branches
- 04—Number of Branches
- 2—2-Wire Mains
- SF—Safety Type Fuslok Main Switch
- 060—Ampere Capacity Main Bus Bar and Switch



FA Panelboard Boxes

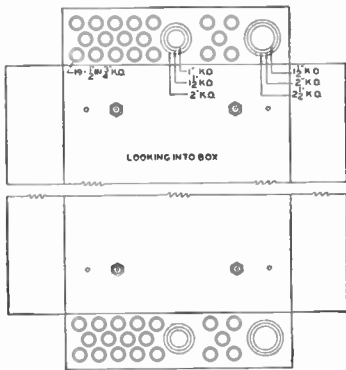
Standard Knockout Arrangement

Boxes will always be shipped with standard knockouts unless special drilling template for each box is sent with order.

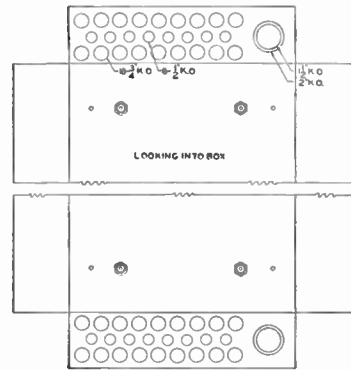
For quick delivery, order boxes with standard knockouts. These knockouts will fill the majority of

your requirements as satisfactorily as special drillings. Avoid delay in your own office and save the expense of making out special templates by using standard knockouts.

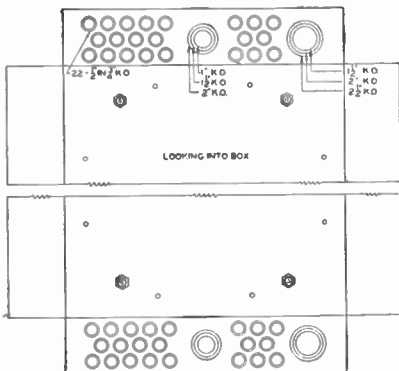
All box dimensions are inside measurements.



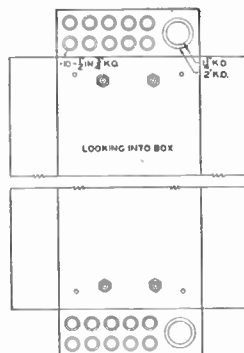
Types LNT1P, NA1B, A2B and NA2B Panelboard Boxes made of No. 12 gauge steel or less, 19 in. wide, 60 in. maximum height, 4 3/4 in. deep



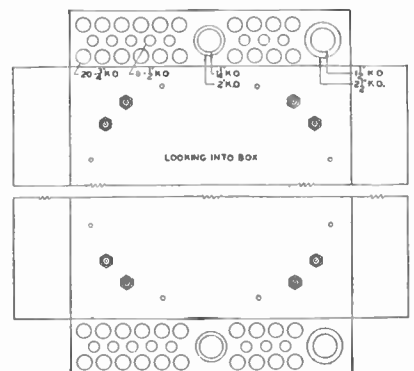
Types LNT1P, NA1B, A2B and NA2B Panelboard Boxes made of No. 10 gauge steel, 19 in. wide, any height, 4 3/4 in. deep



Types N1P, 2P, T2P and NT1C Panelboard Boxes made of No. 12 gauge steel or less, 23 1/2 in. wide, 60 in. maximum height, 4 3/4 in. deep



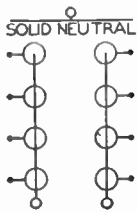
Types R3G and NR3G Panelboard Boxes made of No. 12 gauge steel or less, 12 in. wide, 60 in. maximum height, 4 in. deep



Types N1P, 2P, T2P and NT1C Panelboard Boxes made of No. 10 gauge steel, 23 1/2 in. wide, any height, 4 3/4 in. deep

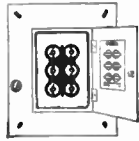
## FA Enclosed Cutouts

### Type FBX Safety Type Fuzboxes, One Fuse Type



- BASE**— Made of moulded material.
- BRANCHES**— 30 Amp., S. P. N. E. C. Plug Type Fuse Connections for 125 Volt, 2 Wire, Solid Neutral Circuits.
- MAINS**— 2 or 3 Wire, 125-250 Volt, Lugs only.
- BOX**— Code Thickness Galvanized Steel, 1½" Gutters.
- FRONT**— Code Thickness Furniture Steel. Rust-proof and White Finish for Flush Mounting. Black Finish if Surface is ordered.

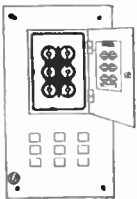
Flush units can be furnished in grey or black, if so ordered, at no extra charge.



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS OF BOX			Catalogue Number	COMPLETE FUZBOX EACH		Std. Pkg. Qty	Approx. Wt. Lbs. Std. Pkg.
		Wide	High	Deep		Std. Pkg.	Less Std. Pkg.		
4	30	7½	8	2¾	FBX4	\$3.00	\$3.30	5	30
6	40	7½	9½	2¾	FBX6	5.00	5.50	5	40
8	60	7½	13¾	2¾	FBX8	7.50	8.30	2	24
10	60	7½	15½	2¾	FBX10	11.00	12.20	2	28
12	60	7½	16¾	2¾	FBX12	15.00	16.60	2	32

### Type FBXS Safety Type Fuzboxes, One Fuse Type

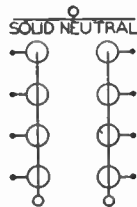
With Provisions for Tumbler Switches (Switches not Included)



Branches	Amperes Main Bus Bar	Wide	High	Deep	Catalogue Number	Std. Pkg.	Less Std. Pkg.	Std. Pkg. Qty	Approx. Wt. Lbs. Std. Pkg.
4	30	7½	13¾	2¾	FBXS4	\$6.50	\$7.20	5	70
6	40	7½	15¼	2¾	FBXS6	9.00	10.00	5	80
8	60	7½	19½	2¾	FBXS8	12.00	13.30	2	34
10	60	7½	21	2¾	FBXS10	15.00	16.60	2	40
12	60	7½	22½	2¾	FBXS12	18.00	20.00	2	46

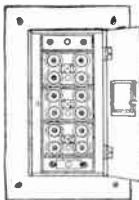
## FA Residence Type Panelboards and Cabinets

### Safety Type NR Panelboards and Cabinets, One Fuse Type



- PANELBOARD**— Made of sections of moulded material.
- BRANCHES**— 30 Amp., S. P. N. E. C. Plug Type Fuse Connections for 125 Volt, 2 Wire, Solid Neutral Circuits.
- MAINS**— 2 or 3 Wire, 125-250 Volt, Lugs only.
- BOX**— Code Thickness Galvanized Steel, 3½" Deep, 1½" Gutters.
- FRONT**— Code Thickness Furniture Steel. Rust-proof and White Finish for Flush Mounting. Black Finish if Surface is ordered.

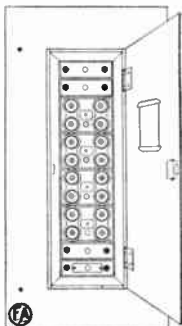
Flush units can be furnished in grey or black, if so ordered, at no extra charge.



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS OF BOX		Catalogue Number	COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High		Each	Approx. Wt., Lbs.	
4	30	9	6	NR4	\$6.30	8	
6	40	9	9	NR6	9.00	12	
8	60	9	12	NR8	10.80	15	
10	60	9	15	NR10	13.50	19	
12	60	9	15	NR12	18.50	19	

### Safety Type NR3G Panelboards and Cabinets, One Fuse Type

- PANELBOARD**— Made of sections of moulded material.
- BRANCHES**— 30 Amp., S. P. N. E. C. Plug Type Fuse Connections for 125 Volt, 2 Wire, Solid Neutral Circuits.
- MAINS**— 2 or 3 Wire, 125-250 Volts, Cable Lugs only.
- BOX**— Code Thickness Galvanized Steel, 4" Deep, 3" Gutters.
- FRONT**— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

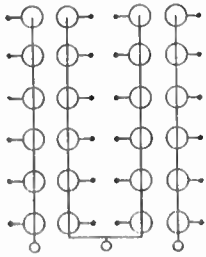


Branches	Amperes Main Bus Bar	Wide	High	Catalogue Number	Std. Pkg.	Less Std. Pkg.	Std. Pkg. Qty	Approx. Wt. Lbs. Std. Pkg.
4	60	12	13½	NR3G04	\$16.00		20	
8	60	12	16½	NR3G08	20.00		25	
12	60	12	19½	NR3G12	24.00		35	
16	100	12	25½	NR3G16	30.00		45	
20	100	12	28½	NR3G20	34.00		50	
24	100	12	34½	NR3G24§	42.00		60	
28	100	12	37½	NR3G28§	48.00		65	
32	100	12	40½	NR3G32§	54.00		70	

§Because of narrow width cabinet, it is recommended that circuit wires be brought into junction box at ceiling and then brought down to cabinet in several large conduits.

**FA Safety Type 2P-3 Panelboards and Cabinets**

Fuse Only Panelboards, Two Fuse Type, One Door Construction



**PANELBOARD** — Made of sections of moulded material.

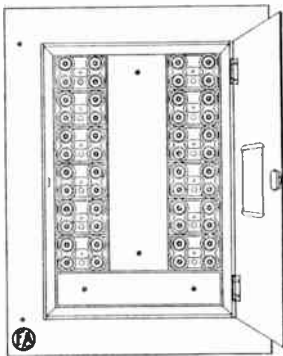
**BRANCHES** — 30 Amp., D. P., N. E. C. Plug Type Fuse Connections for 125 Volt, 2 Wire Circuits.

**MAINS** — 3 Wire, 125-250 Volt.

**BOX** — Code Thickness Galvanized Steel, 4 3/4" Deep, 4" Gutters.

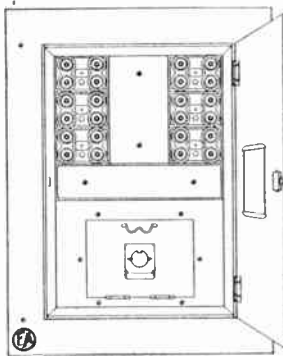
**FRONT** — Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

**Main Cable Lugs Only**



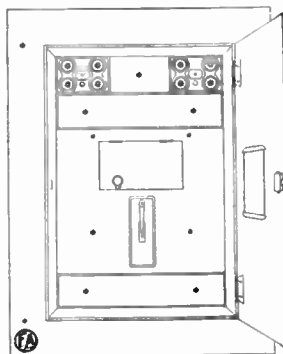
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	See type R3G panelboard prices.					
8	60	23 1/2	18 1/2	2P08-3F060	\$45.00	75
12	60	23 1/2	21 1/2	2P12-3F060	52.00	85
16	100	23 1/2	24 1/2	2P16-3F100	60.00	105
20	100	23 1/2	27 1/2	2P20-3F100	70.00	115

**Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral**



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	24 1/2	2P04-3F060	\$54.00	85
8	60	23 1/2	27 1/2	2P08-3F060	62.00	90
12	60	23 1/2	30 1/2	2P12-3F060	70.00	100
16	100	23 1/2	36 1/2	2P16-3F100	85.00	125
20	100	23 1/2	39 1/2	2P20-3F100	95.00	140

**Safety Type Fuslok Main Switch, Solid Neutral**

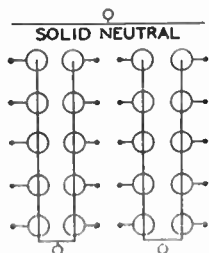


Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	30 1/2	2P04-3SF060	\$ 70.00	105
8	60	23 1/2	33 1/2	2P08-3SF060	78.00	115
12	60	23 1/2	36 1/2	2P12-3SF060	86.00	130
16	100	23 1/2	42 1/2	2P16-3SF100	100.00	155
20	100	23 1/2	45 1/2	2P20-3SF100	110.00	170



## FA Safety Type N1P-3 Panelboards and Cabinets

### Fuse Only Panelboard, One Fuse Type, One Door Construction



**PANELBOARD**— Made of sections of moulded material.

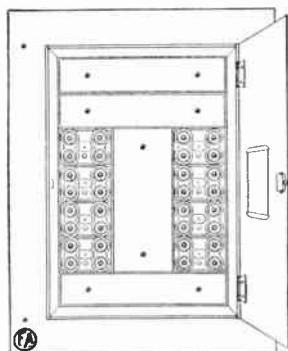
**BRANCHES**— 30 Amp., S. P. , N. E. C. Plug Type Fuse Connections only for 125 Volt, 2 Wire; Solid Neutral Circuits.

**MAINS**— 3 Wire, 125-250 Volt, Solid Neutral.

**BOX**— Code Thickness Galvanized Steel, 4 $\frac{3}{4}$ " Deep, 4" Gutters.

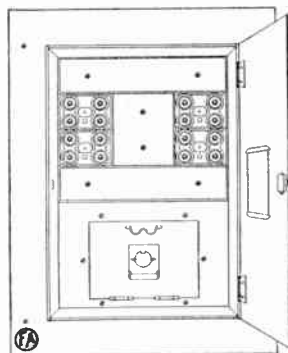
**FRONT**— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

### Main Cable Lugs Only, Solid Neutral



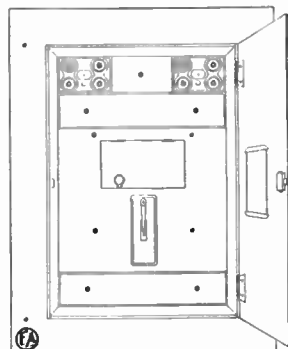
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	See type NR3G panelboard prices.					
8	See type NR3G panelboard prices.					
12	See type NR3G panelboard prices.					
16	100	23 $\frac{1}{2}$	21 $\frac{1}{2}$	N1P16-3L100	\$ 56.00	85
24	100	23 $\frac{1}{2}$	24 $\frac{1}{2}$	N1P24-3L100	66.00	105
32	100	23 $\frac{1}{2}$	27 $\frac{1}{2}$	N1P32-3L100	76.00	115
40	200	23 $\frac{1}{2}$	36 $\frac{1}{2}$	N1P40-3L200	106.00	165

### Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
8	60	23 $\frac{1}{2}$	27 $\frac{1}{2}$	N1P08-3F060	\$ 60.00	90
16	100	23 $\frac{1}{2}$	36 $\frac{1}{2}$	N1P16-3F100	80.00	125
24	100	23 $\frac{1}{2}$	39 $\frac{1}{2}$	N1P24-3F100	90.00	140
32	100	23 $\frac{1}{2}$	42 $\frac{1}{2}$	N1P32-3F100	105.00	150
40	200	23 $\frac{1}{2}$	51 $\frac{1}{2}$	N1P40-3F200	136.00	195

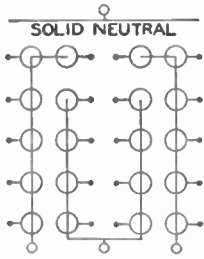
### Safety Type Fuslok Main Switch, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
8	60	23 $\frac{1}{2}$	33 $\frac{1}{2}$	N1P08-3SF060	\$ 74.00	115
16	100	23 $\frac{1}{2}$	42 $\frac{1}{2}$	N1P16-3SF100	95.00	155
24	100	23 $\frac{1}{2}$	45 $\frac{1}{2}$	N1P24-3SF100	108.00	170
32	100	23 $\frac{1}{2}$	48 $\frac{1}{2}$	N1P32-3SF100	120.00	185
40	200	23 $\frac{1}{2}$	57 $\frac{1}{2}$	N1P40-3SF200	166.00	225

FA Safety Type N1P-4 Panelboards and Cabinets

Fuse Only Panelboard, One Fuse Type, One Door Construction



PANELBOARD— Made of sections of moulded material.

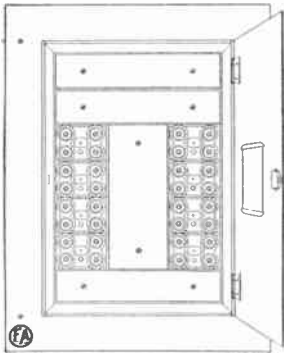
BRANCHES— 30 Amp., S. P., N. E. C. Plug Type Fuse Connections only for 120 Volt, 2 Wire; Solid Neutral Circuits.

MAINS— 3 Phase, 4 Wire; 120-208 Volt, Solid Neutral.

BOX— Code Thickness Galvanized Steel, 3/4" Deep, 4" Gutters.

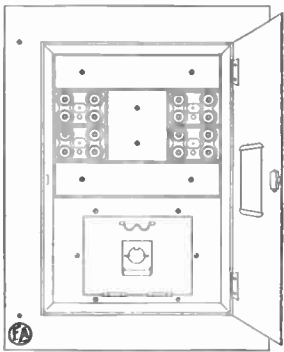
FRONT— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

Main Cable Lugs Only, Solid Neutral



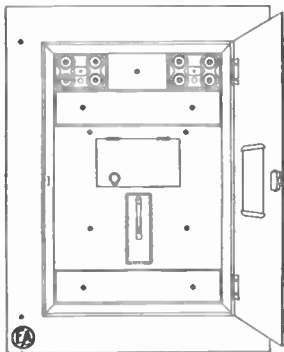
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
8	60	23 1/2	18 1/2	N1P08-4L060	\$ 50.00	75
16	60	23 1/2	24 1/2	N1P16-4L060	60.00	105
24	60	23 1/2	27 1/2	N1P24-4L060	70.00	115
32	100	23 1/2	30 1/2	N1P32-4L100	80.00	135
40	100	23 1/2	36 1/2	N1P40-4L100	108.00	165

Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
8	60	23 1/2	27 1/2	N1P08-4F060	\$ 70.00	90
16	60	23 1/2	33 1/2	N1P16-4F060	84.00	100
24	60	23 1/2	36 1/2	N1P24-4F060	94.00	125
32	100	23 1/2	42 1/2	N1P32-4F100	110.00	150
40	100	23 1/2	48 1/2	N1P40-4F100	140.00	180

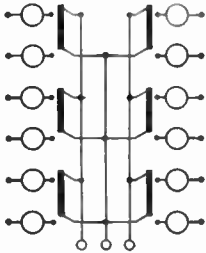
Safety Type Fuslok Main Switch, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
8	60	23 1/2	33 1/2	N1P08-4SF060	\$ 82.00	115
16	60	23 1/2	39 1/2	N1P16-4SF060	104.00	140
24	60	23 1/2	42 1/2	N1P24-4SF060	120.00	155
32	100	23 1/2	48 1/2	N1P32-4SF100	132.00	185
40	100	23 1/2	54 1/2	N1P40-4SF100	176.00	210

## FA Safety Type T2P-3 Panelboards and Cabinets

Switch and Fuse Panelboards, Two Fuse Type, One Door Construction



**PANELBOARD**— Made of sections of moulded material.

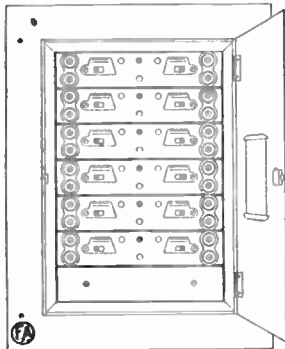
**BRANCHES** — 30 Amp., D. P. Tumbler Switches with N. E. C. Plug Type Fuse Connections for 125 Volt, 2 Wire Circuits.

**MAINS**— 3 Wire, 125-250 Volt.

**BOX**— Code Thickness Galvanized Steel, 4 3/4" Deep, 4" Gutters.

**FRONT**— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

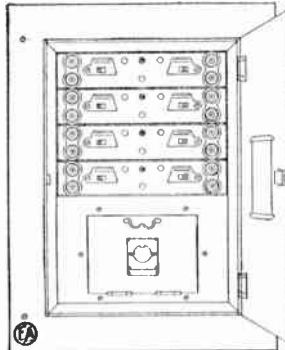
### Main Cable Lugs Only



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	15 1/2	T2P04-3L060	\$38.00	65
6	60	23 1/2	18 1/2	T2P06-3L060	48.00	85
8	60	23 1/2	21 1/2	T2P08-3L060	58.00	90
10	60	23 1/2	24 1/2	T2P10-3L060	68.00	100
12	60	23 1/2	27 1/2	T2P12-3L060	78.00	110
14	100	23 1/2	33 1/2	T2P14-3L100	90.00	130
16	100	23 1/2	36 1/2	T2P16-3L100	100.00	145
18	100	23 1/2	39 1/2	T2P18-3L100	110.00	165
20	100	23 1/2	42 1/2	T2P20-3L100	124.00	180

Substitute letter C for letter P in catalogue number for similar Non-Safety Type Panelboards with cartridge type fuse connections in branches.

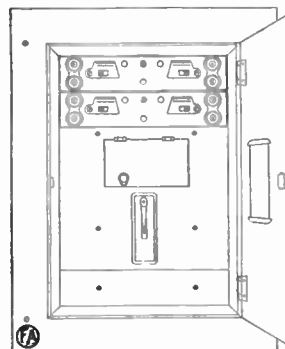
### Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	24 1/2	T2P04-3F060	\$52.00	85
6	60	23 1/2	27 1/2	T2P06-3F060	62.00	90
8	60	23 1/2	30 1/2	T2P08-3F060	72.00	100
10	60	23 1/2	33 1/2	T2P10-3F060	82.00	110
12	60	23 1/2	36 1/2	T2P12-3F060	92.00	115
14	100	23 1/2	42 1/2	T2P14-3F100	112.00	135
16	100	23 1/2	45 1/2	T2P16-3F100	122.00	150
18	100	23 1/2	48 1/2	T2P18-3F100	132.00	170
20	100	23 1/2	51 1/2	T2P20-3F100	142.00	185

Substitute letter C for letter P in catalogue number for similar Non-Safety Type Panelboards with cartridge type fuse connections in branches.

### Safety Type Fuslok Main Switch, Solid Neutral



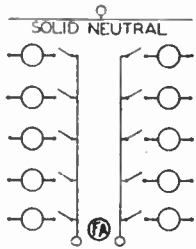
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	30 1/2	T2P04-3SF060	\$70.00	110
6	60	23 1/2	33 1/2	T2P06-3SF060	80.00	120
8	60	23 1/2	36 1/2	T2P08-3SF060	90.00	140
10	60	23 1/2	39 1/2	T2P10-3SF060	100.00	155
12	60	23 1/2	42 1/2	T2P12-3SF060	110.00	170
14	100	23 1/2	48 1/2	T2P14-3SF100	130.00	190
16	100	23 1/2	51 1/2	T2P16-3SF100	140.00	205
18	100	23 1/2	54 1/2	T2P18-3SF100	150.00	225
20	100	23 1/2	57 1/2	T2P20-3SF100	166.00	240

Substitute letter C for letter P in catalogue number for similar Non-Safety Type Panelboards with cartridge type fuse connections in branches.



**FA Safety Type LNT1P-3 Panelboards and Cabinets**

**Switch and Fuse Panelboards, One Fuse Type, One Door Construction**



**PANELBOARD**— Made of sections of brown Bakelite.

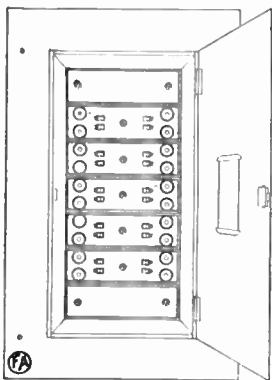
**BRANCHES**— 30 Amp. S. P. Tumbler Switches with N. E. C. Plug Type Fuse Conn. for 125 Volt, 2 Wire, Solid Neutral Circuits.

**MAINS**— 3 Wire, 125-250 Volt, Solid Neutral.

**BOX**— Code Thickness Galvanized Steel, 4 3/4" Deep, 4" Gutters.

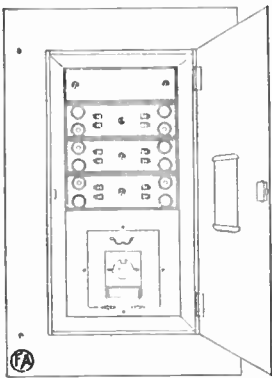
**FRONT**— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

**Main Cable Lugs Only, Solid Neutral**



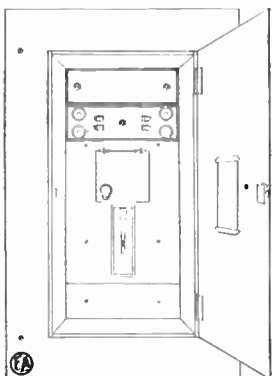
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High	Catalogue Number	Each	
4	60	19	15 1/2	LNT1P04-3L060	\$ 34.00	37
8	60	19	18 1/2	LNT1P08-3L060	40.00	44
12	60	19	21 1/2	LNT1P12-3L060	50.00	51
16	100	19	27 1/2	LNT1P16-3L100	74.00	65
20	100	19	30 1/2	LNT1P20-3L100	84.00	72
24	100	19	33 1/2	LNT1P24-3L100	94.00	79
28	100	19	39 1/2	LNT1P28-3L100	104.00	91
32	100	19	42 1/2	LNT1P32-3L100	114.00	100
36	200	19	45 1/2	LNT1P36-3L200	140.00	170
40	200	19	48 1/2	LNT1P40-3L200	150.00	180

**Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral**



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High	Catalogue Number	Each	
4	60	19	24 1/2	LNT1P04-3F060	\$ 46.00	70
8	60	19	27 1/2	LNT1P08-3F060	58.00	80
12	60	19	30 1/2	LNT1P12-3F060	70.00	90
16	100	19	36 1/2	LNT1P16-3F100	90.00	115
20	100	19	39 1/2	LNT1P20-3F100	102.00	125
24	100	19	42 1/2	LNT1P24-3F100	114.00	160
28	100	19	48 1/2	LNT1P28-3F100	126.00	185
32	100	19	51 1/2	LNT1P32-3F100	138.00	197
36	200	19	57 1/2	LNT1P36-3F200	166.00	225
40	200	19	60 1/2	LNT1P40-3F200	178.00	255

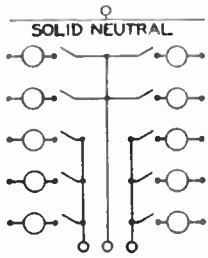
**Safety Type Fuslok Main Switch, Solid Neutral**



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High	Catalogue Number	Each	
4	60	19	30 1/2	LNT1P04-3SF060	\$ 64.00	93
8	60	19	33 1/2	LNT1P08-3SF060	74.00	103
12	60	19	36 1/2	LNT1P12-3SF060	86.00	113
16	100	19	42 1/2	LNT1P16-3SF100	110.00	160
20	100	19	45 1/2	LNT1P20-3SF100	122.00	172
24	100	19	48 1/2	LNT1P24-3SF100	134.00	183
28	100	19	54 1/2	LNT1P28-3SF100	146.00	207
32	100	19	57 1/2	LNT1P32-3SF100	158.00	220
36	200	19	66 1/2	LNT1P36-3SF200	206.00	283
40	200	19	69 1/2	LNT1P40-3SF200	218.00	297

## FA Safety Type LNT1P-4 Panelboards and Cabinets

Switch and Fuse Panelboards, One Fuse Type, One Door Construction



**PANELBOARD**— Made of Sections of Brown Bakelite.

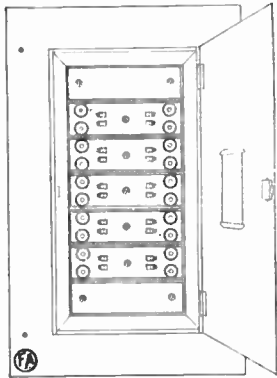
**BRANCHES** — 30 Amp., S. P. Tumbler Switches with N. E. C. Plug Type Fuse Connections for 120 Volt, 2 Wire, Solid Neutral Circuits.

**MAINS** — 3 Phase, 4 Wire; 120-208 Volt, Solid Neutral.

**BOX** — Code Thickness Galvanized Steel, 4 3/4" Deep, 4" Gutters.

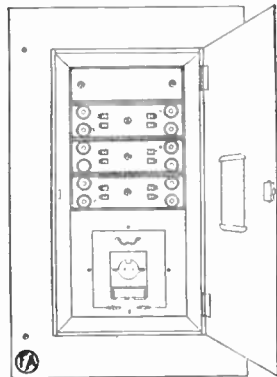
**FRONT** — Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

### Main Cable Lugs Only, Solid Neutral



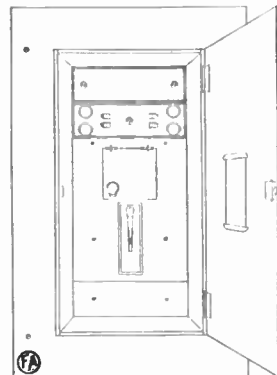
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	19	18 1/2	LNT1P04-4L060	\$40.00	42
8	60	19	21 1/2	LNT1P08-4L060	52.00	50
12	60	19	24 1/2	LNT1P12-4L060	62.00	57
16	60	19	27 1/2	LNT1P16-4L060	78.00	65
20	60	19	30 1/2	LNT1P20-4L060	88.00	72
24	60	19	33 1/2	LNT1P24-4L060	100.00	79
28	100	19	39 1/2	LNT1P28-4L100	110.00	94
32	100	19	42 1/2	LNT1P32-4L100	120.00	100
36	100	19	45 1/2	LNT1P36-4L100	146.00	170
40	100	19	48 1/2	LNT1P40-4L100	156.00	180

### Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	19	24 1/2	LNT1P04-4F060	\$54.00	70
8	60	19	27 1/2	LNT1P08-4F060	66.00	80
12	60	19	30 1/2	LNT1P12-4F060	78.00	90
16	60	19	33 1/2	LNT1P16-4F060	96.00	100
20	60	19	36 1/2	LNT1P20-4F060	108.00	115
24	60	19	39 1/2	LNT1P24-4F060	120.00	125
28	100	19	48 1/2	LNT1P28-4F100	132.00	185
32	100	19	51 1/2	LNT1P32-4F100	148.00	197
36	100	19	54 1/2	LNT1P36-4F100	170.00	210
40	100	19	57 1/2	LNT1P40-4F100	182.00	225

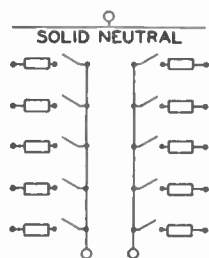
### Safety Type Fuslok Main Switch, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	19	30 1/2	LNT1P04-4SF060	\$76.00	93
8	60	19	33 1/2	LNT1P08-4SF060	88.00	103
12	60	19	36 1/2	LNT1P12-4SF060	100.00	113
16	60	19	39 1/2	LNT1P16-4SF060	122.00	125
20	60	19	42 1/2	LNT1P20-4SF060	136.00	160
24	60	19	45 1/2	LNT1P24-4SF060	148.00	172
28	100	19	51 1/2	LNT1P28-4SF100	162.00	207
32	100	19	57 1/2	LNT1P32-4SF100	176.00	220
36	100	19	60 1/2	LNT1P36-4SF100	222.00	240
40	100	19	63 1/2	LNT1P40-4SF100	234.00	260

## FA Safety Type NT1C-3D Panelboards and Cabinets

Switch and Fuse Panelboards, One Fuse Type, Door-in-Door Construction



**PANELBOARD** — Made of sections of moulded material.

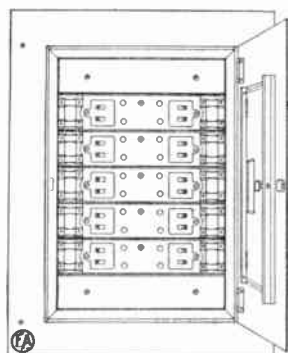
**BRANCHES** — 30 Amp., S. P. Tumbler Switches with Cartridge Type Fuse Connections for 125 Volt, 2 Wire, Solid Neutral Circuits.

**MAINS** — 3 Wire, 125-250 Volt, Solid Neutral.

**BOX** — Code Thickness Galvanized Steel, 4 3/4" Deep, 4" Gutters.

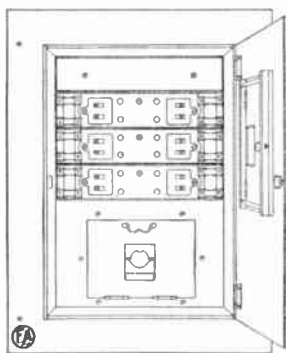
**FRONT** — Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

### Main Cable Lugs Only, Solid Neutral



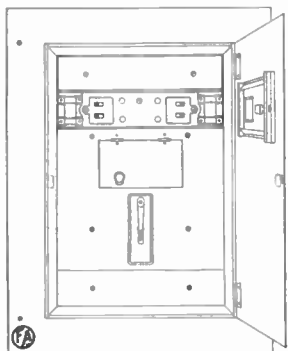
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	18 1/2	NT1C04-3L060D	\$ 50.00	85
8	60	23 1/2	21 1/2	NT1C08-3L060D	60.00	90
12	60	23 1/2	24 1/2	NT1C12-3L060D	70.00	100
16	100	23 1/2	27 1/2	NT1C16-3L100D	86.00	110
20	100	23 1/2	30 1/2	NT1C20-3L100D	96.00	115
24	100	23 1/2	33 1/2	NT1C24-3L100D	106.00	130
28	100	23 1/2	36 1/2	NT1C28-3L100D	116.00	145
32	100	23 1/2	39 1/2	NT1C32-3L100D	126.00	165
36	200	23 1/2	45 1/2	NT1C36-3L200D	152.00	200
40	200	23 1/2	48 1/2	NT1C40-3L200D	162.00	215

### Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	24 1/2	NT1C04-3F060D	\$ 62.00	80
8	60	23 1/2	27 1/2	NT1C08-3F060D	74.00	85
12	60	23 1/2	30 1/2	NT1C12-3F060D	86.00	95
16	100	23 1/2	36 1/2	NT1C16-3F100D	102.00	115
20	100	23 1/2	39 1/2	NT1C20-3F100D	114.00	135
24	100	23 1/2	42 1/2	NT1C24-3F100D	126.00	150
28	100	23 1/2	45 1/2	NT1C28-3F100D	138.00	170
32	100	23 1/2	48 1/2	NT1C32-3F100D	150.00	185
36	200	23 1/2	57 1/2	NT1C36-3F200D	178.00	235
40	200	23 1/2	60 1/2	NT1C40-3F200D	190.00	255

### Safety Type Fuslok Main Switch, Solid Neutral

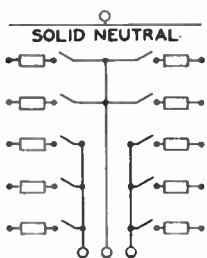


Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 1/2	30 1/2	NT1C04-3SF060D	\$ 80.00	110
8	60	23 1/2	33 1/2	NT1C08-3SF060D	90.00	120
12	60	23 1/2	36 1/2	NT1C12-3SF060D	102.00	140
16	100	23 1/2	42 1/2	NT1C16-3SF100D	122.00	170
20	100	23 1/2	45 1/2	NT1C20-3SF100D	134.00	190
24	100	23 1/2	48 1/2	NT1C24-3SF100D	146.00	225
28	100	23 1/2	51 1/2	NT1C28-3SF100D	158.00	235
32	100	23 1/2	54 1/2	NT1C32-3SF100D	170.00	240
36	200	23 1/2	66 1/2	NT1C36-3SF200D	218.00	290
40	200	23 1/2	69 1/2	NT1C40-3SF200D	230.00	310



## FA Safety Type NT1C-4D Panelboards and Cabinets

Switch and Fuse Panelboards, One Fuse Type, Door-in-Door Construction



**PANELBOARD**— Made of sections of moulded material.

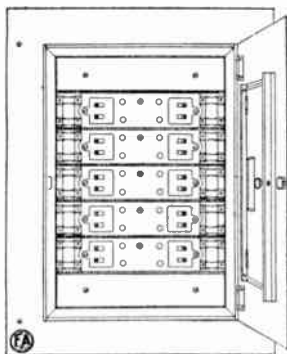
**BRANCHES**— 30 Amp., S. P. Tumbler Switches with Cartridge Type Fuse Connections for 120 Volt, 2 Wire, Solid Neutral Circuits.

**MAINS**— 3 Phase, 4 Wire; 120-208 Volt, Solid Neutral.

**BOX**— Code Thickness Galvanized Steel, 4 $\frac{3}{4}$ " Deep, 4" Gutters.

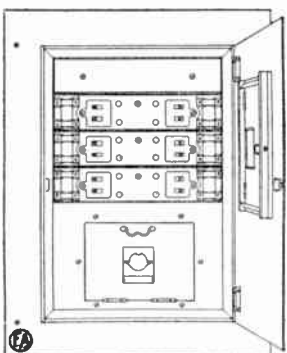
**FRONT**— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

### Main Cable Lugs Only, Solid Neutral



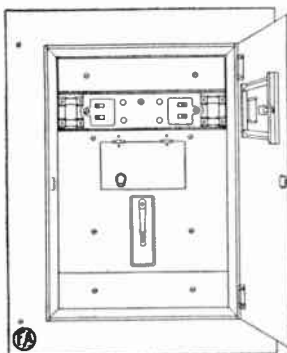
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 $\frac{1}{2}$	18 $\frac{1}{2}$	NT1C04-4L060D	\$ 52.00	75
8	60	23 $\frac{1}{2}$	21 $\frac{1}{2}$	NT1C08-4L060D	64.00	85
12	60	23 $\frac{1}{2}$	24 $\frac{1}{2}$	NT1C12-4L060D	74.00	100
16	60	23 $\frac{1}{2}$	30 $\frac{1}{2}$	NT1C16-4L060D	90.00	115
20	60	23 $\frac{1}{2}$	33 $\frac{1}{2}$	NT1C20-4L060D	100.00	130
24	60	23 $\frac{1}{2}$	36 $\frac{1}{2}$	NT1C24-4L060D	112.00	145
28	100	23 $\frac{1}{2}$	39 $\frac{1}{2}$	NT1C28-4L100D	122.00	165
32	100	23 $\frac{1}{2}$	42 $\frac{1}{2}$	NT1C32-4L100D	132.00	180
36	100	23 $\frac{1}{2}$	48 $\frac{1}{2}$	NT1C36-4L100D	154.00	200
40	100	23 $\frac{1}{2}$	51 $\frac{1}{2}$	NT1C40-4L100D	164.00	235

### Switchfuz Safety Type Main Fuse Disconnect, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 $\frac{1}{2}$	27 $\frac{1}{2}$	NT1C04-4F060D	\$ 66.00	85
8	60	23 $\frac{1}{2}$	30 $\frac{1}{2}$	NT1C08-4F060D	78.00	95
12	60	23 $\frac{1}{2}$	33 $\frac{1}{2}$	NT1C12-4F060D	90.00	110
16	60	23 $\frac{1}{2}$	39 $\frac{1}{2}$	NT1C16-4F060D	108.00	125
20	60	23 $\frac{1}{2}$	42 $\frac{1}{2}$	NT1C20-4F060D	120.00	140
24	60	23 $\frac{1}{2}$	45 $\frac{1}{2}$	NT1C24-4F060D	132.00	155
28	100	23 $\frac{1}{2}$	51 $\frac{1}{2}$	NT1C28-4F100D	144.00	185
32	100	23 $\frac{1}{2}$	54 $\frac{1}{2}$	NT1C32-4F100D	160.00	200
36	100	23 $\frac{1}{2}$	57 $\frac{1}{2}$	NT1C36-4F100D	180.00	220
40	100	23 $\frac{1}{2}$	60 $\frac{1}{2}$	NT1C40-4F100D	194.00	250

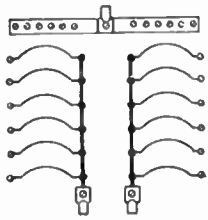
### Safety Type Fuslok Main Switch, Solid Neutral



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX		COMBINATION OF PANELBOARD BOX AND FRONT		
		Wide	High	Catalogue Number	Each	Approx. Wt., Lbs.
4	60	23 $\frac{1}{2}$	33 $\frac{1}{2}$	NT1C04-4SF060D	\$ 88.00	120
8	60	23 $\frac{1}{2}$	36 $\frac{1}{2}$	NT1C08-4SF060D	100.00	140
12	60	23 $\frac{1}{2}$	39 $\frac{1}{2}$	NT1C12-4SF060D	112.00	155
16	60	23 $\frac{1}{2}$	45 $\frac{1}{2}$	NT1C16-4SF060D	134.00	190
20	60	23 $\frac{1}{2}$	48 $\frac{1}{2}$	NT1C20-4SF060D	148.00	200
24	60	23 $\frac{1}{2}$	51 $\frac{1}{2}$	NT1C24-4SF060D	160.00	210
28	100	23 $\frac{1}{2}$	57 $\frac{1}{2}$	NT1C28-4SF100D	174.00	240
32	100	23 $\frac{1}{2}$	60 $\frac{1}{2}$	NT1C32-4SF100D	188.00	255
36	100	23 $\frac{1}{2}$	63 $\frac{1}{2}$	NT1C36-4SF100D	234.00	275
40	100	23 $\frac{1}{2}$	66 $\frac{1}{2}$	NT1C40-4SF100D	246.00	290

**FA Safety Type NA1B-3 Panelboards and Cabinets**

Circuit Breaker Panelboards, One Pole Breaker, One Door Construction



**PANELBOARD**—Made of sections of Brown Bakelite.

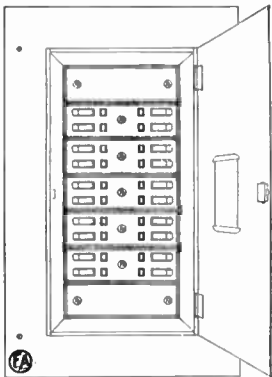
**BRANCHES**— \*15 Amp., S. P. Thermal Type Automatic Circuit Breakers for 125 Volt, 2 Wire, Solid Neutral Circuits.

**MAINS**— 3 Wire, 125-250 Volt, Solid Neutral.

**BOX**— Code Thickness Galvanized Steel, 4" Gutters.

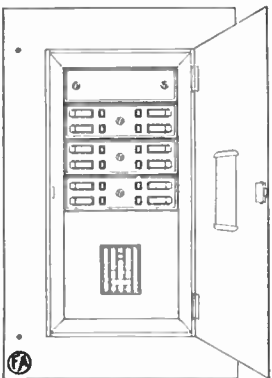
**FRONT**— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

**Main Cable Lugs Only, Solid Neutral**



Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX			COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High	Deep	Catalogue Number	Each	
4	50	19	15 1/2	4 3/4	NA1B04-3L050	\$50.60	37
6	50	19	18 1/2	4 3/4	NA1B06-3L050	60.90	42
8	50	19	18 1/2	4 3/4	NA1B08-3L050	72.20	42
10	50	19	21 1/2	4 3/4	NA1B10-3L050	83.60	50
12	100	19	21 1/2	4 3/4	NA1B12-3L100	98.00	50
14	100	19	27 1/2	4 3/4	NA1B14-3L100	110.40	65
16	100	19	27 1/2	4 3/4	NA1B16-3L100	122.80	65
18	100	19	30 1/2	4 3/4	NA1B18-3L100	135.10	72
20	100	19	30 1/2	4 3/4	NA1B20-3L100	147.50	72
22	100	19	33 1/2	4 3/4	NA1B22-3L100	159.90	79
24	100	19	33 1/2	4 3/4	NA1B24-3L100	172.30	79
26	100	19	39 1/2	4 3/4	NA1B26-3L100	184.60	91
28	100	19	39 1/2	4 3/4	NA1B28-3L100	197.00	94
30	100	19	42 1/2	4 3/4	NA1B30-3L100	209.40	100
32	100	19	42 1/2	4 3/4	NA1B32-3L100	221.80	100
34	200	19	45 1/2	4 3/4	NA1B34-3L200	245.50	170
36	200	19	45 1/2	4 3/4	NA1B36-3L200	258.90	170
38	200	19	48 1/2	4 3/4	NA1B38-3L200	272.30	180
40	200	19	48 1/2	4 3/4	NA1B40-3L200	285.70	180

**Main Automatic Circuit Breaker, Solid Neutral**



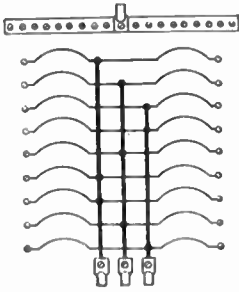
Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX			COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High	Deep	Catalogue Number	Each	
4	50	19	21 1/2	4 3/4	NA1B04-3AB050	\$73.20	63
6	50	19	24 1/2	4 3/4	NA1B06-3AB050	83.60	73
8	50	19	24 1/2	4 3/4	NA1B08-3AB050	94.90	73
10	50	19	27 1/2	4 3/4	NA1B10-3AB050	106.20	83
12	100	19	33 1/2	5 1/2	NA1B12-3AB100	142.40	103
14	100	19	36 1/2	5 1/2	NA1B14-3AB100	154.80	113
16	100	19	36 1/2	5 1/2	NA1B16-3AB100	167.10	113
18	100	19	39 1/2	5 1/2	NA1B18-3AB100	179.50	148
20	100	19	39 1/2	5 1/2	NA1B20-3AB100	191.90	148
22	100	19	42 1/2	5 1/2	NA1B22-3AB100	208.40	160
24	100	19	42 1/2	5 1/2	NA1B24-3AB100	220.80	160
26	100	19	48 1/2	5 1/2	NA1B26-3AB100	233.10	183
28	100	19	48 1/2	5 1/2	NA1B28-3AB100	245.50	183
30	100	19	51 1/2	5 1/2	NA1B30-3AB100	257.90	195
32	100	19	51 1/2	5 1/2	NA1B32-3AB100	270.30	195
34	200	19	60 1/2	5 1/2	NA1B34-3AB200	355.90	255
36	200	19	60 1/2	5 1/2	NA1B36-3AB200	369.30	255
38	200	19	63 1/2	5 1/2	NA1B38-3AB200	382.70	269
40	200	19	63 1/2	5 1/2	NA1B40-3AB200	396.10	269

\*List prices are based on supplying 15-ampere breakers. 20 and 25-ampere breakers will be supplied for branches at same price except when increased capacity bus bars are

required; 35 and 50-ampere breakers can be supplied at \$1.00 list extra per circuit plus increased capacity bus bars and/or main circuit breaker, if necessary.

## FA Safety Type NA1B-4 Panelboards and Cabinets

Circuit Breaker Panelboards, One Pole Breaker, One Door Construction



**PANELBOARD**— Made of sections of Brown Bakelite.

**BRANCHES**— \*15 Amp., S. P. Thermal Type Automatic Circuit Breakers for 120 Volt, 2 Wire, Solid Neutral Circuits.

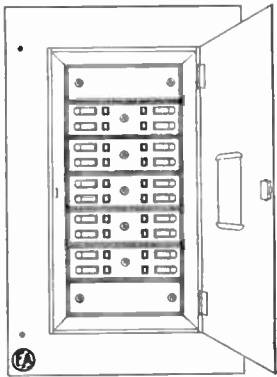
**MAINS**— 3 Phase, 4 Wire; 120-208 Volt, Solid Neutral.

**BOX**— Code Thickness Galvanized Steel, 4" Gutters.

**FRONT**— Code Thickness Furniture Steel. Rust-proof and Black Finish. Flush Mounting unless Surface is ordered.

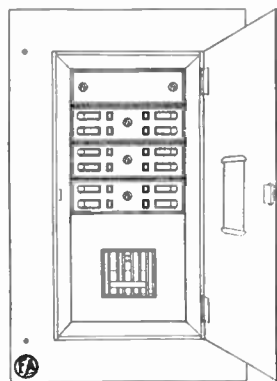
### Main Cable Lugs Only, Solid Neutral

Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX			COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High	Deep	Catalogue Number	Each	
4	50	19	15½	4¾	NA1B04-4L050	\$52.60	37
6	50	19	18½	4¾	NA1B06-4L050	64.00	42
8	50	19	18½	4¾	NA1B08-4L050	75.30	42
10	50	19	21½	4¾	NA1B10-4L050	87.70	50
12	50	19	21½	4¾	NA1B12-4L050	99.00	50
14	50	19	27½	4¾	NA1B14-4L050	111.40	65
16	100	19	27½	4¾	NA1B16-4L100	125.80	65
18	100	19	30½	4¾	NA1B18-4L100	138.20	72
20	100	19	30½	4¾	NA1B20-4L100	150.60	72
22	100	19	33½	4¾	NA1B22-4L100	163.00	79
24	100	19	33½	4¾	NA1B24-4L100	175.40	79
26	100	19	39½	4¾	NA1B26-4L100	187.70	94
28	100	19	39½	4¾	NA1B28-4L100	200.10	94
30	100	19	42½	4¾	NA1B30-4L100	212.50	100
32	100	19	42½	4¾	NA1B32-4L100	224.90	100
34	100	19	45½	4¾	NA1B34-4L100	245.50	170
36	100	19	45½	4¾	NA1B36-4L100	258.90	170
38	100	19	48½	4¾	NA1B38-4L100	272.30	180
40	100	19	48½	4¾	NA1B40-4L100	285.70	180



### Main Automatic Circuit Breaker, Solid Neutral

Branches	Amperes Main Bus Bar	INSIDE DIMENSIONS AND MARKING OF BOX			COMBINATION OF PANELBOARD BOX AND FRONT		Approx. Wt., Lbs.
		Wide	High	Deep	Catalogue Number	Each	
4	50	19	21½	4¾	NA1B04-4AB050	\$81.50	63
6	50	19	24½	4¾	NA1B06-4AB050	92.80	73
8	50	19	24½	4¾	NA1B08-4AB050	104.20	73
10	50	19	27½	4¾	NA1B10-4AB050	116.60	83
12	50	19	27½	4¾	NA1B12-4AB050	127.90	83
14	50	19	33½	4¾	NA1B14-4AB050	140.30	103
16	100	19	36½	5½	NA1B16-4AB100	185.70	113
18	100	19	39½	5½	NA1B18-4AB100	197.00	148
20	100	19	39½	5½	NA1B20-4AB100	209.40	148
22	100	19	42½	5½	NA1B22-4AB100	225.90	160
24	100	19	42½	5½	NA1B24-4AB100	238.30	160
26	100	19	48½	5½	NA1B26-4AB100	250.70	183
28	100	19	48½	5½	NA1B28-4AB100	263.00	183
30	100	19	51½	5½	NA1B30-4AB100	275.40	195
32	100	19	51½	5½	NA1B32-4AB100	287.80	195
34	100	19	54½	5½	NA1B34-4AB100	305.30	207
36	100	19	54½	5½	NA1B36-4AB100	318.80	207
38	100	19	57½	5½	NA1B38-4AB100	332.20	220
40	100	19	57½	5½	NA1B40-4AB100	345.60	220



\*List prices are based on supplying 15-ampere breakers. 20 and 25-ampere breakers will be supplied for branches at same price except when increased capacity bus bars are

required; 35 and 50-ampere breakers can be supplied at \$1.00 list extra per circuit plus increased capacity bus bars and/or main circuit breaker, if necessary.



FA Increased Mains and Sub-Feeders

Additions to Combination List Prices for Increased Mains and Sub-Feeders

2/2 Wire and 3/2 (Solid Neutral) Safety Type Panelboards and Cabinets

Cable Lugs Only

Increased Mains					One Sub-Feeder						
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	ADD TO BOX HEIGHT		Capacity Sub-Feeder Amps.	Add to List Price	ADD TO BOX HEIGHT			DOOR-IN-DOOR	
From	To		One Door	Door in Door			N1P-LNT1P NTIC	2P-T2C	LNT1P NTIC	T2P T2C	
60	100	\$4.10	3"	...	60	\$2.10	3"	3"	...	...	...
60	200	6.20	3"	...	100	3.10	3"	6"	3"	3"	...
100	200	5.20	..	...	200	4.10	3"	6"	3"	3"	...

Switchfuz Safety Type Fuse Disconnect

Increased Mains					One Sub-Feeder						
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	ADD TO BOX HEIGHT		Capacity Sub-Feeder Amps.	Add to List Price	ADD TO BOX HEIGHT			DOOR-IN-DOOR	
From	To		One Door	Door in Door			N1P	LNT1P NTIC	T2P T2C	LNT1P NTIC	T2P T2C
60	100	\$4.10	3"	3"	30	\$16.50	15"	12"	9"	12"	6"
60	200	16.50	6"	6"	60	18.60	15"	12"	9"	12"	6"
100	200	12.40	3"	3"	100	20.60	18"	15"	12"	15"	9"
					200	33.00	21"	18"	15"	18"	12"

Safety Type Fuslok Switch

Increased Mains					One Sub-Feeder						
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	ADD TO BOX HEIGHT		Capacity Sub-Feeder Amps.	Add to List Price	ADD TO BOX HEIGHT			DOOR-IN-DOOR	
From	To		One Door	Door in Door			N1P	LNT1P NTIC	T2P T2C	LNT1P NTIC	T2P T2C
60	100	\$6.20	3"	3"	30	\$30.90	21"	18"	15"	18"	12"
60	200	30.90	9"	9"	60	33.00	21"	18"	15"	18"	12"
100	200	26.80	6"	6"	100	37.10	24"	21"	18"	21"	15"
					200	61.90	30"	27"	24"	27"	21"

Automatic Circuit Breaker

Increased Mains				One Sub-Feeder		
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	Add to Box Height All Types	Capacity Sub-Feeder Amps.	Add to List Price	Add to Box Height All Types
From	To					
50	100	\$27.90	3"	50	\$22.70	9"
50	200	82.50	9"	100	44.40	12"
100	200	61.90	6"	200	109.30	18"

Main or sub-feed switches without fuse connections are same price as switches with fuse connections.

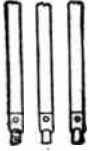
Non-automatic circuit breakers are special but can be furnished at increased cost. Prices on request.

## FA Increased Mains and Sub-Feeders

### Additions to Combination List Prices for Increased Mains and Sub-Feeders

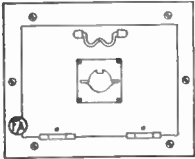
3/2 Wire and 3 Phase, 4 Wire (Solid Neutral) Safety Type Panelboards and Cabinets

#### Cable Lugs Only



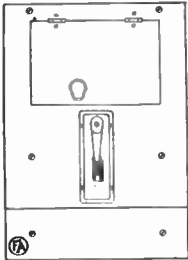
Increased Mains					One Sub-Feeder						
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	ADD TO BOX HEIGHT		Capacity Sub-Feeder Amps.	Add to List Price	ADD TO BOX HEIGHT			DOOR-IN-DOOR	
From	To		One Door	Door in Door			ONE DOOR	T2P	T2C	LNT1P NTIC	T2P T2C
60	100	\$5.20	3"	...	60	\$3.10	3"	3"	..	..	..
60	200	8.30	3"	...	100	4.10	3"	6"	3"	3"	..
100	200	7.20	..	...	200	6.20	3"	6"	3"	3"	..

#### Switchfuz Safety Type Fuse Disconnect



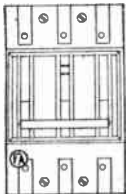
Increased Mains					One Sub-Feeder						
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	ADD TO BOX HEIGHT		Capacity Sub-Feeder Amps.	Add to List Price	ADD TO BOX HEIGHT			DOOR-IN-DOOR	
From	To		One Door	Door in Door			ONE DOOR	T2P	T2C	LNT1P NTIC	T2P T2C
60	100	\$6.20	3"	3"	30	\$18.60	15"	12"	9"	12"	6"
60	200	20.60	6"	6"	60	20.60	15"	12"	9"	12"	6"
100	200	16.50	3"	3"	100	22.70	18"	15"	12"	15"	9"
					200	41.30	21"	18"	15"	18"	12"

#### Safety Type Fuslok Switch



Increased Mains					One Sub-Feeder						
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	ADD TO BOX HEIGHT		Capacity Sub-Feeder Amps.	Add to List Price	ADD TO BOX HEIGHT			DOOR-IN-DOOR	
From	To		One Door	Door in Door			ONE DOOR	T2P	T2C	LNT1P NTIC	T2P T2C
60	100	\$8.30	3"	3"	30	\$33.00	21"	18"	15"	18"	12"
60	200	35.10	9"	9"	60	35.10	21"	18"	15"	18"	12"
100	200	33.00	6"	6"	100	41.30	21"	21"	18"	21"	15"
					200	72.20	30"	27"	24"	27"	21"

#### Automatic Circuit Breaker



Increased Mains				One Sub-Feeder		
INCREASED CAPACITY OF MAINS AMPERES		Add to List Price	Add to Box Height All Types	Capacity Sub-Feeder Amps.	Add to List Price	Add to Box Height All Types
From	To					
50	100	\$36.10	3"	50	\$28.90	9"
50	200	113.50	9"	100	58.80	12"
100	200	80.50	6"	200	136.20	18"

Main or sub-feeder switches without fuse connections are same price as switches with fuse connections.

Non-automatic circuit breakers are special, but can be furnished at increased cost. Prices on request.

Trumbull Unit Panelboards

3-Wire Mains, 125-250 Volts

3-Wire Branches, 125 Volts, Double-Pole

Using Automatic Overcurrent Protective Devices in 2 Legs Only

Solid Neutral Bar in Other

Single Door					Door in Door					Single Door					Single Door				
*15-Amp. Automatic Circuit Breaker Mains: Lugs Only					†30-Amp. Tumbler Switch Fuses Mains: Lugs Only					†30-Amp. Tumbler Switch Fuses Mains: Lugs Only					30-Amp. Plug Fuses Only Mains: Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.		
4	AB3N04L	\$71	50	51201	4	TP3N04LD	\$63	60	51201	TP3N04L	\$43	60	51201	.....	.....	.....	.....		
6	AB3N06L	97	100	51202	8	TP3N06LD	69	100	51202	TP3N06L	53	100	51202	.....	.....	.....	.....		
8	AB3N08L	121	100	51203	8	TP3N08LD	79	100	51203	TP3N08L	63	100	51203	P3N08L	\$46	100	51201		
10	AB3N10L	147	100	51204	10	TP3N10LD	89	100	51204	TP3N10L	73	100	51204	.....	.....	.....	.....		
12	AB3N12L	176	200	51205	12	TP3N12LD	100	200	51205	TP3N12L	84	200	51205	P3N12L	54	200	51202		
14	AB3N14L	202	200	51206	14	TP3N14LD	112	200	51206	TP3N14L	96	200	51206	.....	.....	.....	.....		
16	AB3N16L	228	200	51207	16	TP3N16LD	122	200	51207	TP3N16L	106	200	51207	P3N16L	62	200	51203		
18	AB3N18L	258	200	51208	18	TP3N18LD	132	200	51208	TP3N18L	116	200	51208	.....	.....	.....	.....		
20	AB3N20L	284	200	51209	20	TP3N20LD	142	200	51209	TP3N20L	126	200	51209	P3N20L	72	200	51204		
.....					Mains: Converti-Fuse					Mains: Converti-Fuse					Mains: Converti-Fuse				
.....	.....	.....	.....	.....	4	TP3N04FD	\$75	60	51203	TP3N04F	\$59	60	51203	P3N04F	\$55	60	51202		
.....	.....	.....	.....	.....	6	TP3N06FD	87	100	51204	TP3N06F	71	100	51204	.....	.....	.....	.....		
.....	.....	.....	.....	.....	8	TP3N08FD	97	100	51205	TP3N08F	81	100	51205	P3N08F	69	100	51203		
.....	.....	.....	.....	.....	10	TP3N10FD	107	100	51206	TP3N10F	91	100	51206	.....	.....	.....	.....		
.....	.....	.....	.....	.....	12	TP3N12FD	128	200	51208	TP3N12F	112	200	51208	P3N12F	87	200	51205		
.....	.....	.....	.....	.....	14	TP3N14FD	138	200	51209	TP3N14F	122	200	51209	.....	.....	.....	.....		
.....	.....	.....	.....	.....	16	TP3N16FD	148	200	51210	TP3N16F	132	200	51210	P3N16F	97	200	51206		
.....	.....	.....	.....	.....	18	TP3N18FD	158	200	51211	TP3N18F	142	200	51211	.....	.....	.....	.....		
.....	.....	.....	.....	.....	20	TP3N20FD	168	200	51212	TP3N20F	152	200	51212	P3N20F	107	200	51207		
Mains: Circuit Breaker					Mains: Fusible "R.B." Switch					Mains: Fusible "R.B." Switch					Mains: Fusible "R.B." Switch				
4	AB3N04AB	\$93	50	51203	4	TP3N04SFD	\$89	60	51204	TP3N04SF	\$73	60	51204	P3N04SF	\$71	60	51203		
6	AB3N06AB	140	100	51205	6	TC3N06SFD	109	100	51206	TP3N06SF	93	100	51206	.....	.....	.....	.....		
8	AB3N08AB	164	100	51206	8	TC3N08SFD	119	100	51207	TP3N08SF	103	100	51207	P3N08SF	81	100	51205		
10	AB3N10AB	190	100	51207	10	TC3N10SFD	129	100	51208	TP3N10SF	113	100	51208	.....	.....	.....	.....		
12	AB3N12AB	286	200	51210x	12	TC3N12SFD	162	200	51209	TP3N12SF	146	200	51209	P3N12SF	122	200	51206		
14	AB3N14AB	312	200	51211x	14	TC3N14SFD	172	200	51210	TP3N14SF	156	200	51210	.....	.....	.....	.....		
16	AB3N16AB	338	200	51212x	16	TC3N16SFD	192	200	51211	TP3N16SF	176	200	51211	P3N16SF	132	200	51207		
18	AB3N18AB	364	200	51213x	18	TC3N18SFD	202	200	51212	TP3N18SF	186	200	51212	.....	.....	.....	.....		
20	AB3N20AB	390	200	51214x	20	TC3N20SFD	212	200	51213	TP3N20SF	196	200	51213	P3N20SF	142	200	51208		

Trumbull Narrow Type Panelboards

3-Wire Mains, 125-250 Volts

2-Wire Branches, 125 Volts, Single-Pole

Using Automatic Overcurrent Protective Device in 1 Leg Only

Solid Neutral Bar in Other

Single Door					Single Door				
30-Amp. Single-Pole Fuses Only in Branches					30-Amp. Single-Pole Tumbler Switches in Branches				
Mains: Lugs Only					Mains: Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
4	NRP3G04	\$16	30	51251	NRTTP3G04	\$34	30	51252	
6	.....	.....	.....	.....	NRTTP3G06	37	60	51253	
8	NRP3G08	20	60	51252	NRTTP3G08	40	60	51254	
10	.....	.....	.....	.....	NRTTP3G10	45	60	51255	
12	NRP3G12	24	60	51253	NRTTP3G12	50	60	51256	
14	.....	.....	.....	.....	NRTTP3G14	62	100	51257	
16	NRP3G16	30	100	51254	NRTTP3G16	74	100	51258	
20	NRP3G20	34	100	51255	.....	.....	.....	.....	
24	NRP3G24	42	100	51257	.....	.....	.....	.....	
28	NRP3G28	48	100	51258	.....	.....	.....	.....	
32	NRP3G32	54	100	51259	.....	.....	.....	.....	

3-Wire Mains, 125-250 Volts

2-Wire Branches, 125 Volts, Double-Pole

Using Automatic Overcurrent Protective Device in Both Legs

No Neutral Bar

Single Door					Single Door				
30-Amp. Double-Pole Fuses Only in Branches					30-Amp. Double-Pole Tumbler Switches in Branches				
Mains: Lugs Only					Mains: Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	No. Cir.	Cat. No.	Each	Amp. Mains	Box No.
2	.....	.....	.....	.....	RTP3G02	\$32	30	51252	
4	RP3G04	\$16	30	51252	RTP3G04	42	30	51254	
6	RP3G06	22	60	51253	RTP3G06	52	60	51256	
8	RP3G08	26	60	51254	RTP3G08	62	60	51258	
10	RP3G10	30	60	51255	.....	.....	.....	.....	
12	RP3G12	34	60	51256	.....	.....	.....	.....	
14	RP3G14	40	100	51257	.....	.....	.....	.....	
16	RP3G16	44	100	51258	.....	.....	.....	.....	
18	RP3G18	50	100	51259	.....	.....	.....	.....	
20	RP3G20	54	100	51260	.....	.....	.....	.....	

\*Prices based on 15-ampere breakers. No increase for 20 and 25-ampere breakers. For 35 and 50-ampere breakers, add \$2.00 for double-pole. Add increased mains, if required. †Panels with cartridge fuses instead of plug fuses can be

furnished at no additional charge. For Cat. No. substitute TC, NRTC, or RTC for TP, NRTTP, or RTP. Cat. Nos. and prices include panel (less fuses), barriers and code gauge steel cabinets.



## Trumbull Unit Panelboards

4-Wire Mains, 3-Phase, 125-250 Volts  
2-Wire Branches, 125 Volts, Single-Pole

Using Automatic Overcurrent Protective Device in 1 Leg Only  
Solid Neutral Bar in Other

Single Door *15-Amp. Automatic Circuit Breaker Mains: Lugs Only					Door in Door †30-Amp. Tumbler Switch Fuses Mains: Lugs Only					Single Door †30-Amp. Tumbler Switch Fuses Mains: Lugs Only					Single Door 30-Amp. Plug Fuses Only Mains: Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.		
4	NAB404L	\$51.00	50	51200	4	NTP404LD	\$52.00	30	51200	NTP404L	\$40.00	30	51200	NP404L	\$60.00	30	51200		
6	NAB406L	62.00	50	51201	8	NTP408LD	64.00	60	51201	NTP408L	52.00	60	51201	NP408L	80.00	60	51201		
8	NAB408L	73.00	50	51201	12	NTP412LD	74.00	60	51202	NTP412L	62.00	60	51202	NP412L	90.00	60	51202		
10	NAB410L	85.00	50	51202	16	NTP416LD	90.00	60	51203	NTP416L	78.00	60	51203	NP416L	108.00	60	51203		
12	NAB412L	96.00	50	51202	20	NTP420LD	100.00	60	51204	NTP420L	88.00	60	51204	NP420L	126.00	60	51204		
14	NAB414L	108.00	50	51203	24	NTP424LD	112.00	60	51205	NTP424L	100.00	60	51205	NP424L	138.00	60	51205		
16	NAB416L	122.00	100	51203	28	NTP428LD	122.00	100	51206	NTP428L	110.00	100	51206	NP428L	150.00	100	51206		
18	NAB418L	134.00	100	51204	32	NTP432LD	132.00	100	51207	NTP432L	120.00	100	51207	NP432L	168.00	100	51207		
20	NAB420L	146.00	100	51204	36	NTP436LD	154.00	100	51208	NTP436L	146.00	100	51208	NP436L	184.00	100	51208		
22	NAB422L	158.00	100	51205	40	NTP440LD	164.00	100	51209	NTP440L	156.00	100	51209	NP440L	202.00	100	51209		
24	NAB424L	170.00	100	51205	<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>				
26	NAB426L	182.00	100	51206	4	NTP404FD	\$66.00	30	51202	NTP404F	\$54.00	30	51202	NP404F	\$78.00	30	51202		
28	NAB428L	194.00	100	51206	8	NTP408FD	78.00	60	51203	NTP408F	66.00	60	51203	NP408F	90.00	60	51203		
30	NAB430L	206.00	100	51207	12	NTP412FD	90.00	60	51204	NTP412F	78.00	60	51204	NP412F	102.00	60	51204		
32	NAB432L	218.00	100	51207	16	NTP416FD	108.00	60	51205	NTP416F	96.00	60	51205	NP416F	120.00	60	51205		
34	NAB434L	238.00	100	51208	20	NTP420FD	120.00	60	51206	NTP420F	108.00	60	51206	NP420F	132.00	60	51206		
36	NAB436L	251.00	100	51208	24	NTP424FD	132.00	60	51207	NTP424F	120.00	60	51207	NP424F	144.00	60	51207		
38	NAB438L	264.00	100	51209	28	NTP428FD	144.00	100	51208	NTP428F	132.00	100	51208	NP428F	156.00	100	51208		
40	NAB440L	277.00	100	51209	32	NTP432FD	160.00	100	51209	NTP432F	148.00	100	51209	NP432F	168.00	100	51209		
<b>Mains: Circuit Breaker</b>					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fusible "R.B." Switch</b>				
4	NAB404AB	\$79.00	50	51202	4	NTP404SFD	\$88.00	30	51203	NTP404SF	\$76.00	30	51203	NP404SF	\$108.00	30	51203		
6	NAB406AB	90.00	50	51203	8	NTP408SFD	100.00	60	51204	NTP408SF	88.00	60	51204	NP408SF	116.00	60	51204		
8	NAB408AB	101.00	50	51203	12	NTP412SFD	112.00	60	51205	NTP412SF	100.00	60	51205	NP412SF	128.00	60	51205		
10	NAB410AB	113.00	50	51204	16	NTP416SFD	134.00	60	51206	NTP416SF	122.00	60	51206	NP416SF	150.00	60	51206		
12	NAB412AB	124.00	50	51204	20	NTP420SFD	148.00	60	51207	NTP420SF	136.00	60	51207	NP420SF	162.00	60	51207		
14	NAB414AB	136.00	50	51205	24	NTP424SFD	160.00	60	51208	NTP424SF	148.00	60	51208	NP424SF	174.00	60	51208		
16	NAB416AB	180.00	100	51206	28	NTP428SFD	174.00	100	51210	NTP428SF	162.00	100	51210	NP428SF	186.00	100	51210		
18	NAB418AB	191.00	100	51207	32	NTP432SFD	188.00	100	51211	NTP432SF	176.00	100	51211	NP432SF	198.00	100	51211		
20	NAB420AB	203.00	100	51207	36	NTP436SFD	234.00	100	51212	NTP436SF	222.00	100	51212	NP436SF	244.00	100	51212		
22	NAB422AB	219.00	100	51208	40	NTP440SFD	246.00	100	51213	NTP440SF	234.00	100	51213	NP440SF	256.00	100	51213		
24	NAB424AB	231.00	100	51208	<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>				
26	NAB426AB	243.00	100	51209	4	TP304FD	\$68.00	30	51203	TP304F	\$52.00	30	51203	NP304F	\$74.00	30	51203		
28	NAB428AB	255.00	100	51209	6	TP306FD	78.00	60	51204	TP306F	62.00	60	51204	NP306F	82.00	60	51204		
30	NAB430AB	267.00	100	51210	8	TP308FD	88.00	60	51205	TP308F	72.00	60	51205	NP308F	88.00	60	51205		
32	NAB432AB	279.00	100	51210	10	TP310FD	98.00	60	51206	TP310F	82.00	60	51206	NP310F	98.00	60	51206		
34	NAB434AB	296.00	100	51211	12	TP312FD	108.00	60	51207	TP312F	92.00	60	51207	NP312F	108.00	60	51207		
36	NAB436AB	309.00	100	51211	14	TP314FD	128.00	100	51208	TP314F	112.00	100	51208	NP314F	122.00	100	51208		
38	NAB438AB	322.00	100	51212	16	TP316FD	138.00	100	51209	TP316F	122.00	100	51209	NP316F	132.00	100	51209		
40	NAB440AB	335.00	100	51212	18	TP318FD	148.00	100	51210	TP318F	132.00	100	51210	NP318F	142.00	100	51210		
<b>Mains: Circuit Breaker</b>					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fusible "R.B." Switch</b>				
4	AB304AB	\$100.00	50	51203	4	TP304SFD	\$86.00	30	51204	TP304SF	\$70.00	30	51204	NP304SF	\$94.00	30	51204		
6	AB306AB	123.00	50	51204	6	TP306SFD	96.00	60	51205	TP306SF	80.00	60	51205	NP306SF	98.00	60	51205		
8	AB308AB	147.00	50	51205	8	TP308SFD	106.00	60	51206	TP308SF	90.00	60	51206	NP308SF	102.00	60	51206		
10	AB310AB	171.00	50	51206	10	TP310SFD	116.00	60	51207	TP310SF	100.00	60	51207	NP310SF	112.00	60	51207		
12	AB312AB	230.00	100	51208	12	TP312SFD	126.00	60	51208	TP312SF	110.00	60	51208	NP312SF	122.00	60	51208		
14	AB314AB	258.00	100	51209	14	TP314SFD	146.00	100	51210	TP314SF	130.00	100	51210	NP314SF	142.00	100	51210		
16	AB316AB	282.00	100	51210	16	TP316SFD	156.00	100	51211	TP316SF	140.00	100	51211	NP316SF	152.00	100	51211		
18	AB318AB	308.00	100	51211	18	TP318SFD	166.00	100	51212	TP318SF	150.00	100	51212	NP318SF	162.00	100	51212		
20	AB320AB	334.00	100	51212	20	TP320SFD	182.00	100	51213	TP320SF	166.00	100	51213	NP320SF	172.00	100	51213		

## 3-Wire Mains, 125-250 Volts

2-Wire Branches, 125 Volts, Double-Pole

Using Automatic Overcurrent Protective Devices in Both Legs  
No Neutral Bar

Mains: Lugs Only					Mains: Lugs Only					Mains: Lugs Only					Mains: Lugs Only				
4	AB304L	\$72.00	50	51203	4	TP304LD	\$58.00	30	51201	TP304L	\$38.00	30	51201	NP304L	\$58.00	30	51201		
6	AB306L	95.00	50	51204	6	TP306LD	68.00	60	51202	TP306L	48.00	60	51202	NP306L	68.00	60	51202		
8	AB308L	119.00	50	51205	8	TP308LD	78.00	60	51203	TP308L	58.00	60	51203	NP308L	78.00	60	51203		
10	AB310L	143.00	50	51206	10	TP310LD	88.00	60	51204	TP310L	68.00	60	51204	NP310L	88.00	60	51204		
12	AB312L	172.00	100	51208	12	TP312LD	98.00	60	51205	TP312L	78.00	60	51205	NP312L	98.00	60	51205		
14	AB314L	196.00	100	51209	14	TP314LD	106.00	100	51206	TP314L	90.00	100	51206	NP314L	110.00	100	51206		
16	AB316L	222.00	100	51210	16	TP316LD	116.00	100	51207	TP316L	100.00	100	51207	NP316L	120.00	100	51207		
18	AB318L	251.00	100	51211	18	TP318LD	126.00	100	51208	TP318L	110.00	100	51208	NP318L	130.00	100	51208		
20	AB320L	277.00	100	51212	20	TP320LD	140.00	100	51209	TP320L	124.00	100	51209	NP320L	140.00	100	51209		
<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>				
4	AB304AB	\$100.00	50	51203	4	TP304FD	\$68.00	30	51203	TP304F	\$52.00	30	51203	NP304F	\$74.00	30	51203		
6	AB306AB	123.00	50	51204	6	TP306FD	78.00	60	51204	TP306F	62.00	60	51204	NP306F	82.00	60	51204		
8	AB308AB	147.00	50	51205	8	TP308FD	88.00	60	51205	TP308F	72.00	60	51205	NP308F	88.00	60	51205		
10	AB310AB	171.00	50	51206	10	TP310FD	98.00	60	51206	TP310F	82.00	60	51206	NP310F	98.00	60	51206		
12	AB312AB	230.00	100	51208	12	TP312FD	108.00	60	51207	TP312F	92.00	60	51207	NP312F	108.00	60	51207		
14	AB314AB	258.00	100	51209	14	TP314FD	128.00	100	51208	TP314F	112.00	100	51208	NP314F	122.00	100	51208		
16	AB316AB	282.00	100	51210	16	TP316FD	138.00	100	51209	TP316F	122.00	100	51209	NP316F	132.00	100	51209		
18	AB318AB	308.00	100	51211	18	TP318FD	148.00	100	51210	TP318F	132.00	100	51210	NP318F	142.00	100	51210		
20	AB320AB	334.00																	

## Trumbull Unit Panelboards

3-Wire Mains, 125-250 Volts  
2-Wire Branches, 125 Volts, Single-Pole  
Using Automatic Overcurrent Protective Device in 1 Leg Only  
Solid Neutral Bar in Other

Single Door *15-Amp. Automatic Circuit Breaker Mains: Lugs Only					Door in Door †30-Amp. Tumbler Switch Fuses Mains: Lugs Only					Single Door †30-Amp. Tumbler Switch Fuses Mains: Lugs Only					Single Door 30-Amp. Plug Fuses Only Mains: Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.		
4	NAB304L	\$49.00	50	51200	4	NTP304LD	\$50.00	30	51200	NTP304L	\$34.00	30	51200						
6	NAB306L	59.00	50	51201	8	NTP308LD	60.00	60	51201	NTP308L	40.00	60	51201						
8	NAB308L	70.00	50	51201	12	NTP312LD	70.00	60	51202	NTP312L	50.00	60	51202						
10	NAB310L	81.00	50	51202	16	NTP316LD	86.00	100	51203	NTP316L	74.00	100	51203	NP316L	\$56.00	100	51201		
12	NAB312L	95.00	100	51202	20	NTP320LD	96.00	100	51204	NTP320L	84.00	100	51204						
14	NAB314L	107.00	100	51203	24	NTP324LD	106.00	100	51205	NTP324L	94.00	100	51205	NP324L	66.00	100	51202		
16	NAB316L	119.00	100	51203	28	NTP328LD	116.00	100	51206	NTP328L	104.00	100	51206						
18	NAB318L	131.00	100	51204	32	NTP332LD	126.00	100	51207	NTP332L	114.00	100	51207	NP332L	76.00	100	51203		
20	NAB320L	143.00	100	51204	36	NTP336LD	152.00	200	51208	NTP336L	140.00	200	51208						
22	NAB322L	155.00	100	51205	40	NTP340LD	162.00	200	51209	NTP340L	150.00	200	51209	NP340L	106.00	200	51204		
24	NAB324L	167.00	100	51205	<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>				
26	NAB326L	179.00	100	51206	4	NTP304FD	\$62.00	30	51202	NTP304F	\$46.00	30	51202						
28	NAB328L	191.00	100	51206	8	NTP308FD	74.00	60	51203	NTP308F	58.00	60	51203	NP308F	\$60.00	60	51202		
30	NAB330L	203.00	100	51207	12	NTP312FD	86.00	60	51204	NTP312F	70.00	60	51204						
32	NAB332L	215.00	100	51207	16	NTP316FD	102.00	100	51205	NTP316F	90.00	100	51205	NP316F	80.00	100	51203		
34	NAB334L	238.00	200	51208	20	NTP320FD	114.00	100	51206	NTP320F	102.00	100	51206						
36	NAB336L	251.00	200	51208	24	NTP324FD	126.00	100	51207	NTP324F	114.00	100	51207	NP324F	90.00	100	51204		
38	NAB338L	264.00	200	51209	28	NTP328FD	138.00	100	51208	NTP328F	126.00	100	51208						
40	NAB340L	277.00	200	51209	32	NTP332FD	150.00	100	51209	NTP332F	138.00	100	51209	NP332F	105.00	100	51205		
					36	NTP336FD	178.00	200	51211	NTP336F	166.00	200	51211	NP336F	136.00	200	51207		
					40	NTP340FD	190.00	200	51212	NTP340F	178.00	200	51212	NP340F	136.00	200	51207		
					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fus. "R.B." Switch</b>				
					4	NTP304SFD	\$80.00	30	51203	NTP304SF	\$64.00	30	51203						
					8	NTP308SFD	90.00	60	51204	NTP308SF	74.00	60	51204	NP308SF	\$74.00	60	51203		
					12	NTP312SFD	102.00	60	51205	NTP312SF	86.00	60	51205						
					16	NTP316SFD	122.00	100	51207	NTP316SF	110.00	100	51207	NP316SF	95.00	100	51205		
					20	NTP320SFD	134.00	100	51208	NTP320SF	122.00	100	51208						
					24	NTP324SFD	146.00	100	51209	NTP324SF	134.00	100	51209	NP324SF	108.00	100	51206		
					28	NTP328SFD	158.00	100	51210	NTP328SF	146.00	100	51210						
					32	NTP332SFD	170.00	100	51211	NTP332SF	158.00	100	51211	NP332SF	120.00	100	51207		
					36	NTP336SFD	218.00	200	51212	NTP336SF	206.00	200	51212						
					40	NTP340SFD	230.00	200	51213	NTP340SF	218.00	200	51213	NP340SF	166.00	200	51208		

## 2-Wire Mains, 125 Volts 2-Wire Branches, 125 Volts, Double-Pole Using Automatic Overcurrent Protective Devices in Both Legs No Neutral Bar

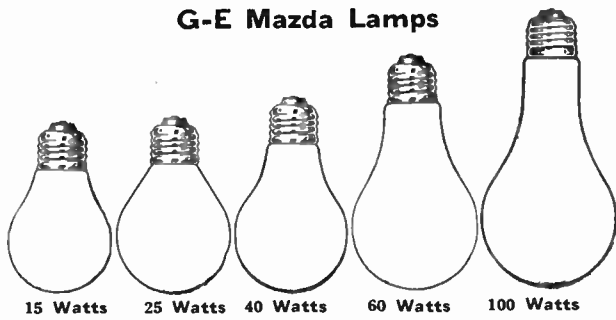
Mains: Lugs Only					Mains: Lugs Only					Mains: Lugs Only					Mains: Lugs Only				
No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	No. Cir.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.	Cat. No.	Each	Amp. Mains	Box No.		
4	AB204L	\$70.00	50	51201	4	TP204LD	\$62.00	60	51201	TP204L	\$42.00	60	51201						
6	AB206L	96.00	100	51202	6	TP206LD	68.00	100	51202	TP206L	52.00	100	51202						
8	AB208L	120.00	100	51203	8	TP208LD	78.00	100	51203	TP208L	62.00	100	51203	P208L	\$45.00	100	51201		
10	AB210L	146.00	100	51204	10	TP210LD	88.00	100	51204	TP210L	72.00	100	51204						
12	AB212L	174.00	200	51205	12	TP212LD	98.00	200	51205	TP212L	82.00	200	51205	P212L	52.00	200	51202		
14	AB214L	200.00	200	51206	14	TP214LD	110.00	200	51206	TP214L	94.00	200	51206						
16	AB216L	226.00	200	51207	16	TP216LD	120.00	200	51207	TP216L	104.00	200	51207	P216L	60.00	200	51203		
18	AB218L	256.00	200	51208	18	TP218LD	130.00	200	51208	TP218L	114.00	200	51208						
20	AB220L	282.00	200	51209	20	TP220LD	140.00	200	51209	TP220L	124.00	200	51209	P220L	70.00	200	51204		
					<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>					<b>Mains: Converti-Fuse</b>				
					4	TP204FD	\$74.00	60	51203	TP204F	\$58.00	60	51203	P204F	\$54.00	60	51202		
					6	TP206FD	86.00	100	51204	TP206F	70.00	100	51204						
					8	TP208FD	96.00	100	51205	TP208F	80.00	100	51205	P208F	68.00	100	51203		
					10	TP210FD	106.00	100	51206	TP210F	90.00	100	51206						
					12	TP212FD	126.00	200	51208	TP212F	110.00	200	51208	P212F	85.00	200	51205		
					14	TP214FD	136.00	200	51209	TP214F	120.00	200	51209						
					16	TP216FD	146.00	200	51210	TP216F	130.00	200	51210	P216F	95.00	200	51206		
					18	TP218FD	156.00	200	51211	TP218F	140.00	200	51211						
					20	TP220FD	166.00	200	51212	TP220F	150.00	200	51212	P220F	105.00	200	51207		
					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fusible "R.B." Switch</b>					<b>Mains: Fus. "R.B." Switch</b>				
					4	TP204SFD	\$88.00	60	51204	TP204SF	\$72.00	60	51204	P204SF	\$70.00	60	51203		
					6	TP206SFD	108.00	100	51206	TP206SF	92.00	100	51206						
					8	TP208SFD	118.00	100	51207	TP208SF	102.00	100	51207	P208SF	80.00	100	51205		
					10	TP210SFD	128.00	100	51208	TP210SF	112.00	100	51208						
					12	TP212SFD	160.00	200	51209	TP212SF	144.00	200	51209	P212SF	120.00	200	51206		
					14	TP214SFD	170.00	200	51210	TP214SF	154.00	200	51210						
					16	TP216SFD	190.00	200	51211	TP216SF	174.00	200	51211	P216SF	130.00	200	51207		
					18	TP218SFD	200.00	200	51212	TP218SF	184.00	200	51212						
					20	TP220SFD	210.00	200	51213	TP220SF	194.00	200	51213	P220SF	140.00	200	51208		

\*Prices based on 15-ampere breakers. No increase for 20 and 25-ampere breakers. For 35 and 50-ampere breakers, add \$1.00 for single-pole, \$2.00 for double-pole. Add increased mains, if required. †6-inch deep box.

†Panels with cartridge fuses instead of plug fuses can be furnished at no additional charge. For Cat. No. substitute NTC or TC for NTP or TP.

Cat. Nos. and prices include panel (less fuses), barriers and code gauge steel cabinets.

## G-E Mazda Lamps



### General Service Inside Frosted 110, 115 and 120 Volts Medium Screw Base

Watts	Each	Bulb	Over All Length In.	Standard Package
15	\$.20	A-17	3 <sup>5</sup> / <sub>8</sub>	120
25	.20	A-19	3 <sup>13</sup> / <sub>16</sub>	120
*40	.20	A-19	4 <sup>1</sup> / <sub>4</sub>	120
*60	.20	A-21	4 <sup>15</sup> / <sub>16</sub>	120
*75	.20	A-21	5 <sup>5</sup> / <sub>16</sub>	60
*100	.25	A-23	6 <sup>1</sup> / <sub>16</sub>	60

\*Mazda C (gas filled) lamps. Should not be generally used out of doors unless protected from rain or snow.

### Flametint, Ivory and Old Rose—Inside Tinted 110, 115 and 120 Volts Medium Screw Base

Watts	Each	Bulb	Over All Length In.	Standard Package
25	\$.25	A-19	3 <sup>15</sup> / <sub>16</sub>	120
40	.25	A-21	4 <sup>7</sup> / <sub>16</sub>	120

### Country Home Service Inside Frosted

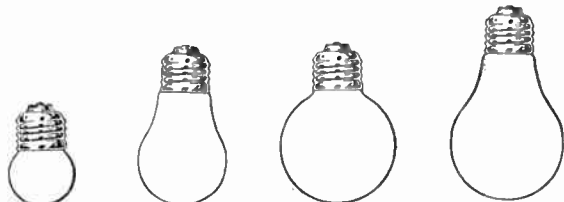
Orders should specify 28-32 volts and country home lighting to distinguish from train lighting lamps. The prices apply only to lamps which are designed for an average voltage, as determined by the manufacturer, suitable for operation on 28-32 volt circuits, and do not apply to lamps ordered for individual voltages within the range.

### 28-32 Volts Medium Screw Base

Watts	Each	Bulb	Over All Length In.	Standard Package
15	\$.25	A-17	3 <sup>5</sup> / <sub>8</sub>	120
25	.25	A-19	3 <sup>15</sup> / <sub>16</sub>	120
50	.27	A-21	4 <sup>15</sup> / <sub>16</sub>	120
100	.40	A-23	6 <sup>1</sup> / <sub>16</sub>	60

### Type D Large Lamps

110, 115 and 120 Volts, Medium Screw Base

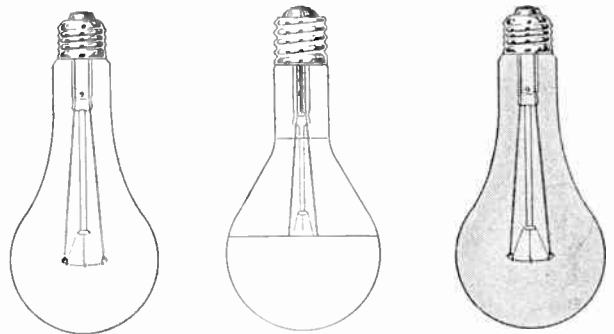


Watts	Each	Bulb	Over All Length In.	Std. Pkg.
7 <sup>1</sup> / <sub>2</sub>	\$.10	G-11 Outside Coated White or Red	2 <sup>1</sup> / <sub>4</sub>	60
15	.10	A-15 Inside Frosted	3 <sup>1</sup> / <sub>2</sub>	60
*30	.10	*G-19	3 <sup>1</sup> / <sub>2</sub>	60
60	.10	A-19 Inside Frosted	4 <sup>5</sup> / <sub>8</sub>	60

\*Supplied inside frosted or outside colored in red, green, amber-orange, rose, white, ivory or flametint.

A standard package consists of 60 lamps of the same wattage, voltage and finish, and lamps of different wattage, voltage or finish may not be combined to make a standard package except that 30-watt, G-19 lamps of different colors (but not inside frosted) may be combined to make a standard package provided the quantity of lamps of any one color is a multiple of six.

## G-E Mazda Lamps



150 Watts, Clear

300 Watts, White Bowl

150 Watts, Daylight

### General Service 110, 115 and 120 Volts Medium Screw Base

Watts	Clear Each	Inside Frosted Each	‡White Bowl Each	Bulb	†Approx. Lumens	Over All Length Inches	Std. Pkg.
150	\$.60	\$.65	\$.65	PS-25	2400	6 <sup>1</sup> / <sub>16</sub>	24
200	.80	.85	.85	PS-30	3400	8 <sup>1</sup> / <sub>8</sub>	24
<b>Mogul Screw Base</b>							
300	\$1.25	\$1.35	\$1.35	PS-35	5400	9 <sup>7</sup> / <sub>16</sub>	24
500	2.00	2.15	2.15	PS-40	9700	9 <sup>13</sup> / <sub>16</sub>	12
* 750	3.75	....	3.95	PS-52	14500	13 <sup>1</sup> / <sub>8</sub>	6
*1000	4.00	....	4.20	PS-52	20000	13 <sup>1</sup> / <sub>8</sub>	6
*1500	5.75	....	5.95	PS-52	32000	13 <sup>1</sup> / <sub>8</sub>	6

\*For use in base up or within 45° of base up position only. Clear lamps also suitable for floodlighting service.  
†Approximate for clear and inside frosted lamps. For white bowl lamps lumens are approximately 3 per cent less.  
‡White bowl lamps should be burned base up only.

### Daylight (Blue Glass)

Made of special blue glass to produce light approximating average daylight quality.

### Medium Screw Base

Watts	Clear Each	Inside Frosted Each	Bulb	Approx. Lumens	Over All Length Inches	Std. Pkg.
60	....	\$.38	A-21	....	4 <sup>15</sup> / <sub>16</sub>	120
100	....	.40	A-23	....	6 <sup>1</sup> / <sub>16</sub>	60
150	\$1.00	1.10	PS-25	1550	6 <sup>15</sup> / <sub>16</sub>	24
200	1.30	1.40	PS-30	2200	8 <sup>1</sup> / <sub>8</sub>	24
<b>Mogul Screw Base</b>						
300	\$1.85	\$1.95	PS-35	3500	9 <sup>7</sup> / <sub>16</sub>	24
500	2.85	3.00	PS-40	6300	9 <sup>13</sup> / <sub>16</sub>	12

### High Voltage Service

220, 230, 240, 250 and 260 Volts

### Medium Screw Base

Watts	Clear Each	Inside Frosted Each	‡White Bowl Each	Bulb	†Approx. Lumens	Over All Length Inches	Std. Pkg.
25	....	\$.26	....	A-19	....	3 <sup>15</sup> / <sub>16</sub>	120
** 50	....	.26	....	A-21	....	4 <sup>7</sup> / <sub>16</sub>	120
100	....	.43	....	A-23	....	6 <sup>1</sup> / <sub>16</sub>	60
200	\$1.00	1.10	\$1.10	PS-30	2700	8 <sup>1</sup> / <sub>8</sub>	24
<b>Mogul Screw Base</b>							
300	\$1.50	\$1.60	\$1.60	PS-35	4300	9 <sup>7</sup> / <sub>16</sub>	24
500	2.40	2.55	....	PS-40	7800	9 <sup>13</sup> / <sub>16</sub>	12
* 750	4.25	....	....	PS-52	12500	13 <sup>1</sup> / <sub>8</sub>	6
*1000	4.75	....	....	PS-52	18000	13 <sup>1</sup> / <sub>8</sub>	6

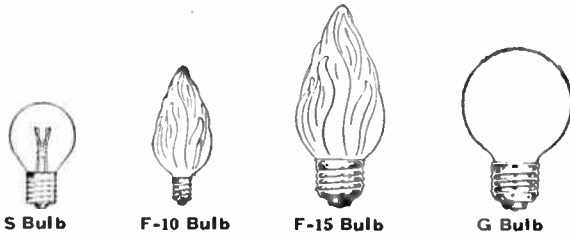
\*Not recommended for use in other than base up or within 45° of base up position.  
\*\*Can be obtained in 275 and 300 volts for mine lighting service at 40 cents each.  
†Approximate for clear and inside frosted lamps. For white bowl lamps lumens are approximately 3 per cent less.  
‡White bowl lamps should be burned base up only.



**G-E Mazda Lamps**

**Decorative Service**

110, 115 and 120 Volts



Watts	Each	Bulb	Screw Base	Over All Length Inches	Standard Package
*10	\$.25	S-11	Intermediate	2 <sup>5</sup> / <sub>16</sub>	120
†15	.35	F-10 Flametint	Intermediate	3 <sup>1</sup> / <sub>8</sub>	60
‡25	.20	F-15 Flametint	Medium	4 <sup>1</sup> / <sub>2</sub>	120
§25	.30	G-18 <sup>1</sup> / <sub>2</sub> White	Medium	3 <sup>9</sup> / <sub>16</sub>	120
§25	.35	G-25 White	Medium	4 <sup>7</sup> / <sub>16</sub>	60
§40	.35	G-25 White	Medium	4 <sup>7</sup> / <sub>16</sub>	60

\*Clear or inside colored in red, blue, green, flametint, yellow, amber-orange, white; also suitable for sign lighting.

†Flametint, white or ivory finish can be supplied with candelabra or intermediate screw base at 35 cents.

‡Can be supplied in white or ivory at 20 cents.

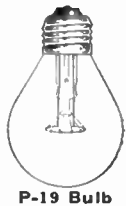
§Can be supplied in flametint at 5 cents extra.

**Limited Service**

110, 115 and 120 Volts

**Vibration Service—Clear**  
Medium Screw Base

Recommended where vibration prevails, such as is produced by heavy or high speed machinery. Not recommended for horizontal burning.



Watts	Each	Bulb	Over All Length Inches	Std. Pkg.
50	\$.25	P-19	3 <sup>13</sup> / <sub>16</sub>	120

**Rough Service—Inside Frosted**

Medium Screw Base

Recommended where subjected to rough handling, such as in extension cord service.



Watts	Each	Bulb	Over All Length Inches	Std. Pkg.
50	\$.37	A-19	3 <sup>5</sup> / <sub>16</sub>	120

**Tubular—Clear**



T-8 Bulb



T-6 1/2 Bulb

Intermediate Screw Base

Watts	Each	Bulb	Over All Length Inches	Std. Pkg.
25	\$.45	T-6 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	60

Medium Screw Base

Watts	Each	Bulb	Over All Length Inches	Std. Pkg.
25	\$.35	T-10	5 <sup>5</sup> / <sub>8</sub>	60
40	.90	T-8	11 <sup>7</sup> / <sub>8</sub>	24

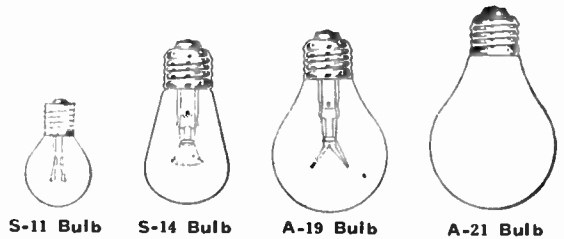


T-10 Bulb

**G-E Mazda Lamps**

**Sign Service**

110, 115 and 120 Volts



Watts	Each	Bulb	Over All Length Inches	Standard Package
*10	\$.25	S-11	2 <sup>9</sup> / <sub>16</sub>	120
†10	\$.20	Medium Screw Base		
†25	.20	S-14 Clear	3 <sup>1</sup> / <sub>2</sub>	120
25	.40	A-19 Inside Frosted	3 <sup>15</sup> / <sub>16</sub>	120
40	.20	A-19 Clear Daylight	3 <sup>15</sup> / <sub>16</sub>	120
50	.40	A-21 Inside Frosted	4 <sup>7</sup> / <sub>16</sub>	120
		A-19 Clear Daylight	3 <sup>15</sup> / <sub>16</sub>	120

\*Supplied clear or inside colored in red, blue, green, yellow, amber-orange, flametint and white. Also suitable for decorative lighting.

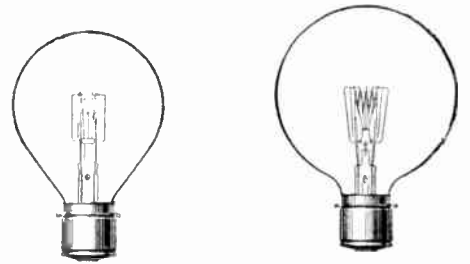
†Supplied also inside colored in red, blue, green, yellow and amber-orange at 25 cents.

**Spotlight Service**

These lamps can be burned in any position except within 45° of vertically base up.

When ordering specify service.

110, 115 and 120 Volts



P-Bulb

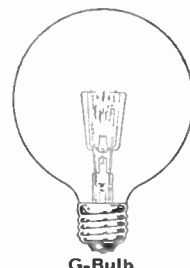
G-Bulb

Medium Prefocus Base

Watts	Each	Bulb	Light Center Length Inches	Over All Length Inches	Standard Package
* 100	\$1.15	P-25	2 <sup>3</sup> / <sub>16</sub>	5	60
* 250	1.90	G-30	2 <sup>3</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub>	24
* 400	3.15	G-30	2 <sup>3</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub>	24
†1000	\$7.15	Mogul Prefocus Base			
		G-40	3 <sup>13</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>16</sub>	12

**Floodlight Service**

110, 115 and 120 Volts



G-Bulb

Medium Screw Base

Watts	Each	Bulb	Light Center Lgth. In.	Over All Lgth. In.	Std. Pkg.
250	\$1.75	G-30	3	5 <sup>1</sup> / <sub>8</sub>	24

Mogul Screw Base

Watts	Each	Bulb	Light Center Lgth. In.	Over All Lgth. In.	Std. Pkg.
500	\$3.25	G-40	4 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>16</sub>	12
1000	6.75	G-40	5 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	12

\*Medium screw base can be supplied with a light center length of 3 inches at 15 cents less than price shown.

†Mogul screw base lamp, with light center length of 4<sup>1</sup>/<sub>4</sub> or 5<sup>1</sup>/<sub>4</sub> inches, can be supplied at \$6.75. Orders should specify light center length.

‡Light center length for prefocus base is distance from center of light source to top of base fin; for screw base, to base cap.

## G-E Train Service Mazda Lamps

Inside Frosted  
32 and 64 Volts  
Medium Screw Base

Orders should be marked "train lighting" to distinguish from country home lighting.

Watts	Each	Bulb	Over All Length Inches	Std. Pkg.
15	\$.25	A-17	3 <sup>5</sup> / <sub>8</sub>	120
25	.25	A-19	3 <sup>15</sup> / <sub>16</sub>	120
50	.27	A-21	4 <sup>15</sup> / <sub>16</sub>	120
100	.40	A-23	6 <sup>1</sup> / <sub>16</sub>	60

## Locomotive Cab Service—Clear

34 Volts  
Medium Screw Base

Orders should specify "locomotive cab."

Watts	Each	Bulb	Over All Length Inches	Std. Pkg.
15	\$.22	S-14	3 <sup>1</sup> / <sub>2</sub>	120

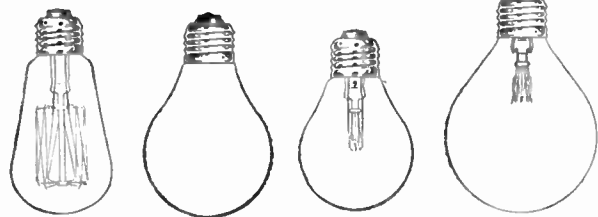
## Locomotive Headlight Service—Clear

32 Volts  
Medium Screw Base

These lamps can be burned in any position except within 45° of vertically base up. Light center length, 3 inches.

Watts	Each	Bulb	Over All Length Inches	Std. Pkg.
100	\$1.00	P-25	4 <sup>3</sup> / <sub>4</sub>	60
250	1.50	P-25	4 <sup>3</sup> / <sub>4</sub>	60

## G-E Street Railway Service Mazda Lamps



S-Bulb    A-Bulb, Ins. Fr.    A-Bulb    P-Bulb

All lamps fitted with medium screw base except the 301-watt lamp which is fitted with mogul screw base.

\*105, 110, 115, 120, 125 and 130 Volts

Watts	Each	Amp.	Bulb	Light Center Length Inches	Over All Length Inches	Std. Pkg.
23	\$.25	...	S-17 Clear	...	4 <sup>5</sup> / <sub>8</sub>	120
†36	.20	...	A-21 Inside Frosted	...	4 <sup>7</sup> / <sub>16</sub>	120
†56	.27	...	A-21 Inside Frosted	...	4 <sup>7</sup> / <sub>16</sub>	120
<b>Headlight</b>						
23	\$.60	...	A-19 Clear	2 <sup>3</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	120
36	.60	...	A-19 Clear	2 <sup>3</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	120
56	.85	...	P-25 Clear	2 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	60
94	1.10	...	P-25 Clear	2 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	60
<b>Arc-Resisting</b>						
101	\$.50	...	A-23 Inside Frosted	...	6 <sup>1</sup> / <sub>16</sub>	60
201	.95	...	PS-30 Clear	...	8 <sup>1</sup> / <sub>8</sub>	24
301	1.55	...	PS-35 Clear	...	9 <sup>7</sup> / <sub>16</sub>	24
<b>30 Volts</b>						
†	\$.45	1.0	A-19 Inside Frosted	...	3 <sup>15</sup> / <sub>16</sub>	120
†	.55	1.6	A-21 Inside Frosted	...	4 <sup>7</sup> / <sub>16</sub>	120

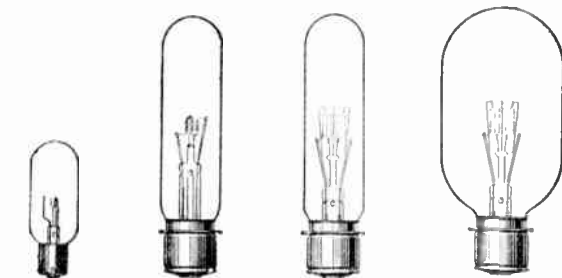
\*These lamps are for use 5 in series on 525, 550, 575, 600, 625 and 650 volts.

†These lamps, if burned horizontally, will not give as good service as when burned in a vertical position.

‡Mazda C street railway cut-out lamps. These are for use approximately 20 lamps in series on 600-volt circuits. Where circuit voltage is greater or less than 600 volts, sufficient lamps may be installed or omitted in order to make the total lamp voltage equal to that of the circuit.

## G-E Projection Service Mazda Lamps

100, 105, 110, 115 and 120 Volts



T-8 Bulb 100 Watts    T-10 Bulb 200 Watts    T-10 Bulb 300 Watts    T-20 Bulb 500 Watts

These lamps must burn base down.

Watts	Each	Bulb	Light Center Length Inches	Over All Length Inches	Standard Package
50	\$1.10	T-8	1 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	24
100	1.50	T-8	1 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	24
<b>Medium Prefocus Base</b>					
†200	\$2.20	T-10	2 <sup>3</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>4</sub>	24
*300	2.90	T-10	2 <sup>3</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>4</sub>	21
†500	3.00	T-20	2 <sup>3</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>4</sub>	6
<b>Mogul Prefocus Base</b>					
†1000	\$6.50	T-20	3 <sup>7</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>2</sub>	6

\*For use with air blast cooling. Should be used only in equipment designed to give an adequate cooling; otherwise unsatisfactory lamp performance and damage to equipment may result.

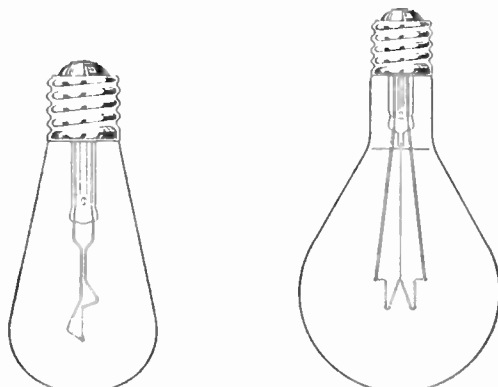
†Medium screw base can be supplied with a light center length of 3 inches at the same price.

‡Mogul screw base can be supplied with a light center of 4<sup>3</sup>/<sub>4</sub> inches at the same price.

§Light center length for prefocus base is distance from center of light source to top of base fin; for bayonet base to top of base pins; for screw base to base cap.

## G-E Street Lighting Service Mazda Lamps

Clear—With Mogul Screw Base



S-Bulb    PS-Bulb

The 15 and 20-ampere lamps are designed for base up burning position. Lamps ordered for base down burning position may be supplied at the same price. The 25000 lumen lamp is not recommended for base down burning.

Nominal c.p. is one-tenth of lumen rating.

Amps.	Each	Lumens	Average Volts	Bulb	Light Center Length Inches	Over All Length Inches	Std. Pkg.
6.6	\$.75	1000	9.8	S-21 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	60
6.6	1.45	2500	22.3	PS-35	7	9 <sup>7</sup> / <sub>16</sub>	24
6.6	1.70	4000	34.6	PS-35	7	9 <sup>7</sup> / <sub>16</sub>	24
6.6	2.25	6000	51.1	PS-40	7	9 <sup>13</sup> / <sub>16</sub>	12
15	1.70	4000	14.3	PS-35	*7	9 <sup>7</sup> / <sub>16</sub>	24
20	2.25	6000	15.3	PS-40	*7	9 <sup>13</sup> / <sub>16</sub>	12
20	2.80	10000	25.4	PS-40	*7	9 <sup>13</sup> / <sub>16</sub>	12
20	4.00	15000	38.5	PS-10	*7	9 <sup>13</sup> / <sub>16</sub>	12
20	7.00	25000	62.2	PS-52	†9 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>8</sub>	6

Base down lamp, light center length: \*6<sup>1</sup>/<sub>4</sub> in.; †8<sup>1</sup>/<sub>4</sub> in.

**G-E Mazda Photo Lamps**

**Photoflash Lamps**



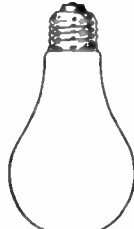
Eliminates smoke, ashes and sparks from flashlight photography. No odor. Easy to operate and noiseless. Subjects do not close their eyes, so instantaneous is the flash.

The clear glass bulb contains a quantity of crumpled aluminum foil in an atmosphere of oxygen. A short filament is mounted within the mass of foil and serves to start the flash.

With medium screw base.

A-Bulb		Voltage Range for Operation	Bulb	Diam. Bulb In.	Max. Over All Length In.	Std. Pkg.
No.	Each					
*10	\$.15	3 to 125	A-19 Clear	2 <sup>3</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>8</sub>	60
*20	.25	3 to 125	A-23 Clear	2 <sup>7</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>16</sub>	60

\*Flash with two (or more) cells of flashlight or dry battery, or house current.



A-21 Bulb

**Photoflood Lamp**

This lamp offers a new and economical source of diffused light. In appearance it resembles a regular 60-watt lamp used for house lighting. If operated at 115 volts a.c. or d.c. it draws approximately 250 watts, but in proper reflecting equipment, this new lamp is actinically as effective as a 750-watt lamp.

Rated life, 120 minutes at 115 volts. With medium screw base.

A-21 Bulb		Voltage Range for Operation	Bulb	Diam. Bulb Inches	Maximum Over All Length Inches	Std. Pkg.
No.	Each					
105-120	\$.35		A-21 Inside Frosted	2 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>16</sub>	60

**G-E Sunlight Lamps**



S-2 Bulb

Sunlight lamps give the benefits of outdoor midsummer sunlight, indoors any time of the year. Will not operate on ordinary house lighting circuits except when used in special equipment designed to produce correct starting and operating voltage.

Types S-1 and S-2 are accepted by the Council of Physical Therapy of the American Medical Association.

\*Metal cap supplied with lamp.

These lamps will not be consigned and sales or purchases will not apply on agency or purchase contracts for other lamps.

**Type S-1 Mazda Lamp**

Approx. Watts	Each	Approx. Volts	Bulb	Over All Length Inches	Base	Std. Pkg.
400	\$7.50	14.5	PS-22 Inside Frosted	6 <sup>7</sup> / <sub>16</sub>	Mogul	6

**Type S-2 Mazda Lamp**

Approx. Watts	Each	Approx. Volts	Bulb	Over All Length Inches	Base	Std. Pkg.
130	3.75	15	*A-17 Inside Frosted	4 <sup>7</sup> / <sub>8</sub>	Spec.	12

**Type G-1 Lamp**

Approx. Watts	Each	Approx. Volts	Bulb	Over All Length Inches	Base	Std. Pkg.
34	3.50	17	A-21 Clear	4 <sup>1</sup> / <sub>4</sub>	Med.	12

**Type G-5 Lamp**

Approx. Watts	Each	Approx. Volts	Bulb	Over All Length Inches	Base	Std. Pkg.
75	5.00	15	G-35 Clear	6 <sup>1</sup> / <sub>16</sub>	Spec.	6

**G-E Mazda CX Lamps**

110, 115 and 120 Volts



A-19 Bulb

Manufactured with a special glass bulb which transmits most of the ultraviolet radiation emitted by filament. Mazda CX lamps are made available for the purpose of providing a source of infrared radiation combined with mild ultraviolet.

Lamps larger than 60 watts should not be burned in key sockets or those having paper or fibre insulation. Such sockets may not withstand heat generated by lamps.

These lamps will not be consigned and sales or purchases will not apply on agency or purchase contracts for other lamps.

**Inside Frosted—Medium Screw Base**

Watts	Each	Bulb	Diameter Bulb Inches	Maximum Over All Length In.	Standard Package
60	\$ .60	A-19	2 <sup>3</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>8</sub>	48
250	1.25	G-30	3 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>8</sub>	24

**Inside Frosted—Mogul Screw Base**

Watts	Each	Bulb	Diameter Bulb Inches	Maximum Over All Length In.	Standard Package
500	\$2.25	G-38	4 <sup>3</sup> / <sub>4</sub>	7 <sup>5</sup> / <sub>8</sub>	12

**G-E Mazda Lamps**

**Natural Colored Lamps**

The four lamps in natural colored clear glass bulbs listed below cover a large percentage of present demand for natural colored lamps. The prices shown are for the manufacturer's standard colored glass only.

Watts	Volts	Bulb	*Ruby Each	Green, †Blue and *Amber Each
10	110, 115, 120	S-14	\$.50	\$.40
25	110, 115, 120	A-19	.50	.40
40	110, 115, 120	A-21	.50	.40
60	110, 115, 120	A-21	.55	.45

\*Natural ruby and natural amber lamps are regularly furnished in the light shade. Dark ruby and dark amber lamps used in photographic work will be furnished, only when definitely specified, at the same price.

†Does not include daylight blue or photographic blue.

‡This lamp not to be burned in enclosing globe.

**Extra Charges for Special Features**

**White, All Frosted and White Bowl Lamps**

Clear or Inside Frosted Lamps Each	Add. Charge for White, All Frosted or White Bowl Each	Clear or Inside Frosted Lamps Each	Add. Charge for White, All Frosted or White Bowl Each
Less than \$1.00	\$.05	\$4.00 to \$4.99	\$.25
\$1.00 to 1.99	.10	5.00 to 5.99	.30
2.00 to 2.99	.15	6.00 to 6.99	.35
3.00 to 3.99	.20	7.00 to 7.99	.40

The above prices apply only for the manufacturer's standard spray coatings defined below.

**WHITE.**—All-over coating of heavy density. Standard for all Mazda B lamps and all Mazda C lamps in A-23 and smaller diameter bulbs, except as covered under All Frosted below.

**ALL FROSTED.**—All-over coating of light density. Standard for all Mazda C lamps in S-24<sup>1</sup>/<sub>2</sub> and larger diameter bulbs; for tubular lamps listed under Limited Service; for all lamps in daylight and natural colored bulbs.

**WHITE BOWL.**—Bowl white coating of light, heavy, or extra heavy density used in accordance with the following:

1. Light density for all lamps in daylight or natural colored bulbs;
2. Heavy density for all Mazda B lamps and all Mazda C lamps in S-24<sup>1</sup>/<sub>2</sub> and smaller bulbs, except as in 1;
3. Extra heavy density for all Mazda C lamps in PS-25 and larger bulbs, except as in 1.

**ETCHING.**—Additional charges for etching letters or designs may be obtained upon application. Style of lettering or design should accompany such application.

Orders for large lamps with customer's etching may be filled either short or in excess, within the limits of 5%; except that on orders for less than 40 lamps the shortage or excess may equal but not exceed two lamps.

Etched lamps are not rejectable by the purchaser under the provisions of the standard specifications.

**VOLTAGE.**—Lamps of 105, 125 and 130 volts can be supplied at the same prices as lamps of 110, 115 and 120 volts. The prices for voltages other than 105, 110, 115, 120, 125 and 130 volts may be obtained upon application.

Prices of lamps in the 200 to 260 volt range other than 220, 230, 240, 250 and 260 upon application.

**SPECIAL BASING.**—The prices listed cover only lamps fitted with unskirted bases unless otherwise indicated. The prices of lamps fitted with bases other than listed may be obtained upon application.

**SPECIAL LAMPS.**—Any lamp requiring a change in construction from the standard, such as shape or color of bulb, tipped bulb, number of loops in filament, number of anchors, wattage, voltage, amperage, etc., will take a special price, which may be obtained upon application.

As it is impossible to always produce an exact quantity of any special lamps ordered, or of any lamps to be made tipped, when listed as tipless, or of any lamps to be furnished with natural colored, coated colored or tinted bulbs, all such orders may be filled either short or in excess, within the limits of 10 per cent, except that in orders for 20 lamps or less, the shortage or excess will not exceed two lamps.



## Miniature Mazda Lamps

Base abbreviations: Min.—miniature screw base; S. C.—single contact bayonet candleabra base; D. C.—double contact bayonet candleabra base.

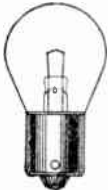
Ten lamps constitute a unit package quantity.



Mazda-63  
Mazda-81

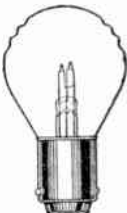
### Automobile Service (Including Lamps for Ford Cars)

Mazda Lamp No.	Each	Bulb	Base	Volts	C.P.
63	\$.10	G-6	S. C.	6-8	3
64	.12	G-6	D. C.	6-8	3
67	.22	G-6	S. C.	12-16	3
68	.22	G-6	D. C.	12-16	3
81	.12	G-6	S. C.	6-8	6
87	.19	S-8	S. C.	6-8	15



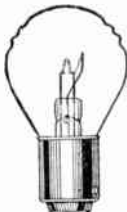
Mazda-87

1000	.24	S-10	D. C.	6-8	32
1110	.22	S-10	D. C.	6-8	21
1116	.26	S-10	D. C.	6-8	32
1120	.55	S-10	D. C.	12-16	21
1129	.21	S-10	S. C.	6-8	21
1133	.25	S-10	S. C.	6-8	32



Mazda-1000  
Mazda-1110  
Mazda-1116

1141	.40	S-10	S. C.	12-16	21
1142	.40	S-10	D. C.	12-16	21



Mazda-1158

1158	.22	S-10	D. C.	6-8	21
2320	.45	S-10	†D. C.	6-8	32
2330	.45	S-10	†D. C.	6-8	32

†D.C bayonet prefocused base. Can be used only on cars equipped for prefocused base lamps.

### Flashlight Service

Mazda Lamp No.	Each	Bulb	Base	Volts	Amps.
1	\$.09	FE-3 <sup>3</sup> / <sub>4</sub>	Min.	2.2	.25
10	.09	G-3 <sup>1</sup> / <sub>2</sub>	Min.	2.3	.27
13	.09	G-3 <sup>1</sup> / <sub>2</sub>	Min.	3.8	.30
14	.09	G-3 <sup>1</sup> / <sub>2</sub>	Min.	2.5	.30
31	.12	G-4 <sup>1</sup> / <sub>2</sub>	Min.	6.2	.30
*701	.07	FE-3 <sup>3</sup> / <sub>4</sub>	Min.	2.2	.26
*710	.07	G-3 <sup>1</sup> / <sub>2</sub>	Min.	2.3	.30
*713	.07	G-3 <sup>1</sup> / <sub>2</sub>	Min.	3.8	.35
*714	.07	G-3 <sup>1</sup> / <sub>2</sub>	Min.	2.5	.35



Mazda-2320  
Mazda-2330

\*Packed 50 lamps of a type to a platform which constitutes the minimum quantity which will be shipped by the manufacturer. No voltage rating appears on the base of these lamps. The type of lamp is designated by the bead colors as follows: Mazda lamp No. 701, white bead; No. 710, purple bead; No. 713, green bead; No. 714, blue bead.

### Standard Dry Battery Service

Mazda Lamp No.	Each	Bulb	Base	Volts	Amps.
Mazda-26	\$.10	G-4 <sup>1</sup> / <sub>2</sub>	Min.	1.25	.60
Mazda-31	.11	G-5 <sup>1</sup> / <sub>2</sub>	Min.	2.4	.80



Mazda-1



Mazda-26  
Mazda-31

### Trainmen's and General Purpose Hand Lantern Service

26	\$.14	G-4 <sup>1</sup> / <sub>2</sub>	Min.	5.0	.15
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### Radio Panel and Miscellaneous Service

Mazda-40	\$.09	T-3 <sup>1</sup> / <sub>4</sub>	Min.	6-8	.15
Mazda-41	.09	T-3 <sup>1</sup> / <sub>4</sub>	Min.	2.5	.50



Mazda-40  
Mazda-41

## Neon Glow Lamps

105-125 Volt Service



S-14



G-10



T-4<sup>1</sup>/<sub>2</sub>

This orange-red lamp is used wherever economy or low level illumination is desirable. Will not burn out; after long use bulb gradually blackens. Useful life, 3000 hours.

Contained in bulb is Neon gas of a definite pressure and a pair of metallic electrodes.

Minimum operating voltage below label, 50 volts a.c., 10 volts d.c., except where noted on 1/2-watt G-10 bulb.

Lamps furnished without resistance only when with double contact bayonet base of corresponding size.

On d.c. only one (the negative) electrode glows but gives the same c.p. as do both electrodes on a.c.

Sprayed red or yellow finish, 5 cents extra.

Standard package, 10.

### S-14 Bulb—Clear Finish—Medium Screw Base

Watts	Each	Approx. Resist. in Base Ohms	Average Current Rating Amps.	Approx. C.P. Rating	Electrode Shape	Maximum C.P. Direction
2	\$.50	3200	.020	.5	Plates	End On

### G-10 Bulb—Clear Finish—Medium Screw Base

1/2	\$.40	3500	.005	.05	Cylinder	At Side
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The above lamp is for 110 volts a.c. only. Can be supplied in 1-watt size for 210-240-volt service.

1 \$ .40 3500 .010 .05 Cyl. & Helix. All G-10 bulb with skirted candleabra base at 5 cents extra.

### T-4 1/2 Bulb—Clear Finish—Candelabra Screw Base

1/4	\$.40	30000	.002	...	Hemisphere	All
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## Hamilton Beach Safety Night Lights



Provides a sufficient illumination to fill a room 12x12 feet with a soft moonlight glow making all objects visible. Ideal for nursery, bathroom, hall, basement, sick room, etc. Factories, hospitals, stores and hotels use this light to save turning on high wattage bulb. Uses less than one watt per hour.

Light consists of a transformer that reduces a 110-volt current to 1.9 volts. Transformer is enclosed in ivory Plaskon shell. Bulb is 3.8 volts operating at one-half voltage. Regular flashlight bulbs are used for replacement.

Operates on a.c., 60 cycles. Will not operate on d.c. Length over all including prongs, about 3 1/2 inches.

Packed 6 in a display carton.

Approximate shipping weight of six, 2 pounds.

Each ..... \$1.00

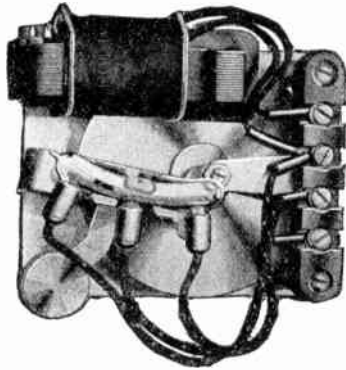


**Leland Flashers**

It is good advertising to flash a sign and real economy, as the current cost for the lamps and tubes is reduced from 30 to 50 per cent and their life nearly doubled.

All Leland Flashers are furnished with mercury-to-mercury switches enclosed in oxygen-free containers.

**Class 131 Unit Type Junior Flashers**  
On-and-Off, Alternating or Color Changing



Operated by means of an intermittent induction disc motor. Motor circuit is led through mercury switch so that when flasher, in operation, breaks the sign circuit it also breaks the flasher-motor circuit. The mechanism then returns by gravity action to its starting position from where the cycle is repeated.

The flasher coil draws only 3 or 4 watts and is on only half of the time—a 50 per cent saving in the cost of current.

The flasher parts are corrosion-proof; steel parts are cadmium-plated. Motor bearings are of the ball thrust type. Oiling is virtually unnecessary.

Can be mounted inside of advertising machines, small signs or displays. Mounting plate is 4 3/8 inches wide and 3 3/4 inches high. For a.c. only.

With indoor cabinet 6 inches high, 8 inches wide and 3 inches deep. Cabinet for No. 131-122 flasher is 4 inches deep. Outdoor cabinet, galvanized, \$8.00 extra.

Cat. No.	Each	Circuit Capacity Amperes	No. of Circuits
131-121	\$13.00	12	1
131-12A	15.00	12	2-Alt.
131-122	18.00	12	2-Sim.
131-241	16.00	24	1

Shipping weight, 8 pounds. Price includes indoor cabinet; without cabinet, deduct \$1.50.

Current specifications: 110 volts, a.c. any cycle. For d.c. specify Class 132 and add \$8.00 to price.

Speed is adjustable between 20 and 40 flashes per minute. On time is quickly adjustable between 1/2 and 2/3 of a cycle. High speed with maximum of 60 flashes per minute, \$2.00 extra; low speed with minimum of 10 flashes per minute, \$6.00 extra.

**Class 101 Unit Type On-and-Off Flashers**

Cat. No.	Each	Circuit Capacity Amperes	No. of Circuits	Total Load Amperes
101-241	\$30.00	24	1	24
101-24A	33.00	24	2-Alt.	48
101-242	37.00	24	2	48
101-243	44.00	24	3	72
101-501	35.00	50	1	50
101-502	50.00	50	2	100

Speed adjustable between 13 to 20 flashes per minute. Shipping weight, 14 pounds. Price includes indoor cabinet; without cabinet, deduct \$2.00.

**Outdoor Housings**

Class 101 Unit Type	Each	Height Inches	Width Inches	Depth Inches
1 Circuit.....	\$8.00	10	6	5
Other Types.....	8.00	12	8	6
Class 103 Unit Type	Each	Height Inches	Width Inches	Depth Inches
4 Circuits.....	\$8.00	12	6	4
Other Types.....	8.00	12	8	6
Class 107 Unit Type	Each	Height Inches	Width Inches	Depth Inches
All Types.....	\$8.00	12	8	6

Unless otherwise specified furnished for use with 110-volt a.c., 50 or 60-cycle current.

Prices on request for: D.C. 220 volts or 25 cycles; special speeds or cycles; extra circuits.

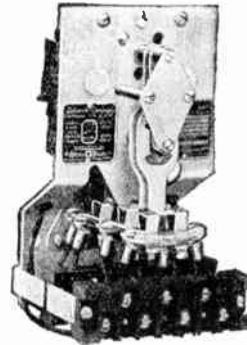
**Heavy Duty and Combination Flashers**

Heavy duty and combination flashers available to meet any requirement. Prices on application.

**Leland Flashers**

Economy and dependability of operation insured by design and construction. Induction disc motor gives maximum of power with minimum of input—2 circuit On-and-Off flasher averages 10 watts input—200 per cent reserve power; disc shaft runs in ball bearings of a combined radial and thrust type which are practically frictionless. Eccentric cams are oil-lubricated linen-bakelite to make them noiseless, wear-resisting and self-lubricating. Other bearing surfaces are bronze on steel and run at a low speed—a little oil on the various bearing surfaces, once in 6 months, is all that is required to insure continuous operation. Variation in speed is secured, without turning flasher off, by adjusting thumb screw on front.

**Class 103 Unit Type Speed Flashers**



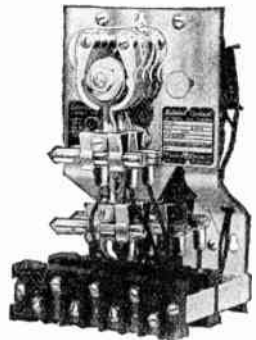
Cat. No.	Each	Cir. Cap. Amps.	No. of Cir.	Total Load Amps.
*103-34	\$30.00	3	4	12
*103-54	40.00	5	4	20
*103-94	45.00	9	4	36
*103-58	60.00	5	8	40
*103-98	70.00	9	8	72
†103-56	60.00	5	6	30
†103-96	70.00	9	6	54
†103-58-8	65.00	5	8	40
†103-98-8	75.00	9	8	72

Timing of circuits: \*1 to 4; †1 to 6; †1 to 8.

Speed adjustable between 180 to 250 flashes per minute.

Shipping weight, 14 pounds. Price includes indoor cabinet; without cabinet, deduct \$2.00.

**Class 107 Unit Type Speller Flashers**



Cat. No.	Each	Cir. Cap. Amps.	No. of Cir.
107-122	\$36.00	12	2
107-123	44.00	12	3
107-124	52.00	12	4
107-125	60.00	12	5
107-126	68.00	12	6
107-242	40.00	24	2
107-243	50.00	24	3
107-244	60.00	24	4

Speed adjustable between 6 to 10 seconds per cycle.

Shipping weight, 14 pounds. Price includes indoor cabinet; without cabinet, deduct \$2.00.

**Radio Interference Elimination Devices**

Description	Extra per Cir.
Condenser (Either 1 or 2 Mfd. Depending on Circuit Capacity).....	\$2.50
Choke Coil for Each 12 Amp. (100 Turns of Proper Size Wire for Load).....	2.00
Condensers Installed in Flasher at Factory.....	4.50
Chokes, for Each 12 Amp. Installed in Flasher at factory.....	4.00
Complete Radio Interference Elimination, Chokes and Condensers in Each Circuit, Mounted in Special Cabinet at Factory, Extra per Circuit Up to 12 Amperes.....	7.00

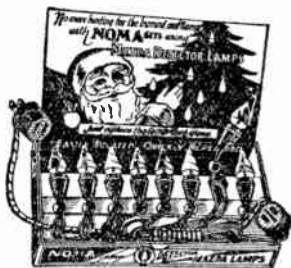
**Kontax Mercury Tubes Used in Leland Flashers**

Ratings are maximum—overloading voids guarantee.

Type of Flasher	RATED CAP. CIRCUIT		Single Acting		Alternating	
	Amps.	Watts	Cat. No.	Each	Cat. No.	Each
Class 131.....	12	1320	X1229	\$3.15	X1232	\$4.50
	24	2640	X2429	4.00		
*Class 101, 107, 109, 111, 125, or 127.....	12	1320	X1222	3.00	X1232	4.50
	24	2640	X2422	3.80	X2432	5.40
†Class 103, 105, 125 or 127.....	50	5500	X5022	7.50		
	4.5	500	X1229	3.15	X1234	4.50
	9.1	1000	X2429	4.00	X2434	5.40

\*A.C. On-off or speller type. †A.C. speed border type.

## Noma Straight-Line Festoon Type Christmas Tree Lighting Outfits



No. 100-F

No. 100-M.—An 8-light series outfit with patented add-on connector attached to lead wire to connect other outfits. Berry beads securely fasten lamps to tree branch. With Mazda 15-volt M-22 bell shape lamps.

For average indoor 8 to 10-foot trees.

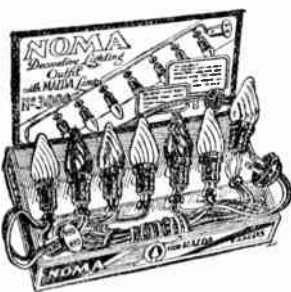
No. 100-M.....each \$1.15

No. 100-F.—Same as No. 100-M except lamps. With Mazda 15-volt F-6½ new

detector lamps, assorted colors. Burned out lamp glows; replace it and all lamps light up.

No. 100-F.....each \$1.50

## No. 3000 Noma 7-Light Multiple Christmas Tree Lighting Outfits



A straight-line outfit with standard add-on extension connector and adjustable Berry beads (patented).

For indoor and outdoor use; thoroughly weather-proof.

With 120-volt inside-colored Mazda lamps—assorted colors; C-9¼ intermediate base. Sockets and lamps are 18 inches apart, with 4-foot lead.

Being wired in multiple, no burnt-out lamp can affect the other lamps. Sockets are all bakelite.

No. 3000.....each \$2.25

## No. 175 Noma Christmas Tree Holders



Completely wired with an 8-light series Mazda lamp set to illuminate the bottom of the tree, which is usually the darkest part.

This holder is exceptionally well made of rustproof metal; inside basin holds 23 pounds of water as ballast, which will keep the tree moist for days.

Equipped with leader and double duty plug. A 2-way add-on extension connector controls all lights on the tree.

No. 175.....each \$4.00

## Adaptable Lamp Changers



Fits any style incandescent lamp. Furnished with or without steel poles.

No.	Description	Each
150	Changer Head for 15-50 Watt Lamps.....	\$6.50
151	Changer Head for 50-200 Watt Lamps.....	6.50
152	Special for Lamps Up to 500 Watts. Give Size	12.00
	Steel Poles Up to 30 Feet in 5½-Ft. Sections.....	4.50

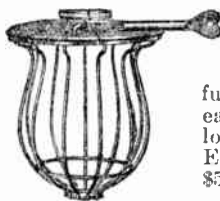
## Matthews Holdfast Lamp Changers



Price, No. 2 for 15-60-Watt Mazda Lamps.....each \$13.00

Price, No. 3 for 60-150-Watt Mazda Lamps, Up to 5 Inches in Diameter.....each 15.00

## Hubbell Locking Type Lamp Guards



One key is furnished with each carton of locking guards. Extra keys, \$5.00 per 100.

### For Brass Sockets

Cat. No.	Per 100	Size Lamps Watts
5685	\$33.34	40-60
5635	51.12	100
5762	64.22	200
5730	33.34	40-60
5731	51.18	100
5820	68.40	200

### For Weatherproof Sockets

Style Socket	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
Brass	10	100	35
Brass	10	100	36
Brass	10	50	44
W. P.	10	100	35
W. P.	10	100	54
W. P.	10	50	38

Separate baskets for Nos. 5685, 5730 guards, \$18.00 per 100. Tops only, \$25.00 per 100.

Separate baskets for Nos. 5635, 5731 guards, \$24.00 per 100. Tops only, \$32.50 per 100.

Separate baskets for Nos. 5762, 5820 guards, \$33.00 per 100. Tops only for No. 5762, \$38.00 per 100. Tops only for No. 5820, \$42.50 per 100.

## Hubbell Non-Locking Type Lamp Guards



No. 5573



No. 5485



No. 5691

Cat. No.	Per 100	Size Lamps Watts	Style Socket	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
5573	\$32.18	60	Brass	10	100	35
5578	36.46	100	Brass	10	100	55
5485	25.74	60	Brass	10	100	27
5691	20.36	60	Brass	10	100	25
5692	24.90	100	Brass	10	100	30
5693	21.74	60	W. P.	10	100	25
5694	24.90	100	W. P.	10	100	29

Separate basket for No. 5573, \$18.00 per 100. Top, \$17.50 per 100.

Separate basket for No. 5578, \$20.00 per 100. Top, \$20.50 per 100.

## Hubbell Locking Type Lamp Guards

### For Bottom of Reflectors



†No. 6655

One key is furnished with each carton of locking guards. Extra keys \$5.00 per 100.

D-11606 extra long locking screws are furnished with guards to adapt them for over-size reflectors.

Cat. No.	Per 100	Size Reflectors Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.
6650	\$47.60	6½	10	50	20
6652	53.36	8	10	50	25
6653	72.54	10	10	50	25
6655	91.66	12	10	50	30
*6657	111.54	14	4	20	15
*6659	146.48	16	4	20	16
*6660	148.16	18	4	20	18

\*Packed in bulk.

†Reflector shown for illustration only.



**Loxon Type Lamp Guards**



No. 1425

Tinned wire; closed bottom; two steel hinged plates at top that snugly fit over socket bead and have locking device operated by key, which is furnished with each dozen guards. Can be furnished to fit conduit receptacles, V. V. receptacles, Unilets, Taplets and aluminum sockets, when so specified.

Listed as standard by Underwriters.

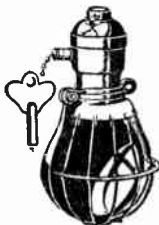
Cat. No.	Per Dozen	For Mazda C Lamps Watts	Cat. No.	Per Dozen	For Mazda C Lamps Watts
*1425	\$6.00	50-60	*2444	\$10.00	200
*1426	6.30	100	†2446A	10.00	200
†1427A	6.00	50-60	†2446B	10.00	200
†1427B	6.00	50-60	*2447	12.50	...
†1428A	6.30	100	†2447A	12.50	...
†1428B	6.30	100	2447B	12.50	...
*2443	9.00	150	.....	.....	.....

\*Fits brass sockets. †Fits W. P. sockets.

**Loxon Type Reflector Guards**

Same as the above, but with tinned, pressed steel half reflector.

Cat. No.	Per Dozen	For Mazda C Lamps Watts	Fits Socket
1400	\$9.00	15-40	Brass
1401A	9.00	15-40	W.P.
1401B	9.00	15-40	W.P.
1443	9.00	50-60	Brass
1444A	9.00	50-60	W.P.
1444B	9.00	50-60	W.P.



No. 1443

**Gripion Type Lamp Guards**

The Gripion Type Lamp Guard is fastened to the socket by means of plain screws.

Made to fit conduit receptacles, V. V. receptacles, Unilets, Taplets and aluminum sockets, when so specified.

All numbers followed by A fit any W.P. socket with the bottom bead measuring 1 1/16 to 1 1/8 inches in extreme diameter. All numbers followed by B fit any W.P. socket with the bottom bead measuring 1 3/4 inches in extreme diameter.



No. 1600

Cat. No.	Per Dozen	For Mazda C Lamps Watts	Cat. No.	Per Dozen	For Mazda C Lamps Watts
*1600	\$4.00	50-60	*1608	\$4.00	15-25
*1601	4.30	100	†1608A	4.30	15-25
†1602A	4.30	50-60	†1608B	4.30	15-25
†1602B	4.30	50-60	.....	.....	.....

**Gripion Type Reflector Guards**

Cat. No.	Per Dozen	For Mazda C Lamps Watts	Cat. No.	Per Dozen	For Mazda C Lamps Watts
*1620	\$7.00	50-60	*1610	\$7.00	15-25
†1621A	7.00	50-60	†1611A	7.00	15-25
†1621B	7.00	50-60	1611B	7.00	15-25

\*Fits brass sockets. †Fits W.P. sockets.

**Protector O Lamp Guards**

An open bottom guard enabling quick and easy removal or insertion of lamp and fully protects against breakage. Heavily tinned.

Cat. No.	Per Dozen	For Mazda C Lamps Watts	Cat. No.	Per Dozen	For Mazda C Lamps Watts
.....	.....	.....	1429	1430	.....
.....	.....	.....	\$4.00	4.00	.....
.....	.....	.....	25-60	25-60	.....
.....	.....	.....	Brass	W.P.	.....



**Morse High Efficiency Lamp Guards**

No.	Each	Watts	Ga. Wire
200	.....	75-100	14
204	.....	200	14



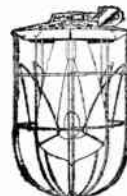
No.	Each	Watts	Ga. Wire
206	.....	300	12
208	.....	500	12
211	.....	1000	12

No.	Each	Watts	Ga. Wire
200WP	.....	75-100	..
204WP	.....	200	..

No.	Each	Watts	Ga. Wire
206WP	.....	300	..
208WP	.....	500	..
211WP	.....	1000	..

**Morse High Efficiency Locked Lamp Guards**

No.	Each	Watts	Ga. Wire
350	.....	40-60	14
353	.....	75-100	14
354	.....	200	14
356	.....	250	14



No.	Each	Watts	Ga. Wire
357	.....	300	13
359	.....	500	13
361	.....	1000	13

No.	Each	Watts	Ga. Wire
350WP	.....	40-60	..
353WP	.....	75-100	..
354WP	.....	200	..
356WP	.....	250	..

No.	Each	Watts	Ga. Wire
357WP	.....	300	..
359WP	.....	500	..
361WP	.....	1000	..

**Morse Open Bottom Lamp Guards**



For Brass Sockets No.	For W.P. Sockets No.	Each	Watts	Ga. Wire
1A	5A	.....	25	15
1	5	.....	40-60	15
3A	7A	.....	25	12
3	7	.....	40-60	12

**Morse Open Bottom Lamp Guards**

With Cushion Ring



No.	Each	Watts	Ga. Wire
161	.....	40-60	15
162	.....	75-100	15
163	.....	40-60	12
164	.....	75-100	12



No.	Each	Watts	Ga. Wire
165	.....	40-60	15
166	.....	75-100	15
167	.....	40-60	12
168	.....	75-100	12

**Morse Never-Break Lamp Guards**



No.	Each	Watts	Gauge Wire
107	.....	40-50	18
109	.....	60-75	18
111	.....	40-50	16
113	.....	60-75	16

## Morse No Steal Guards

For Brass Sockets

No.	Each	Watts	Ga. Wire
240	...	40	16
242	...	60	14
248	...	25	16

For Weatherproof Sockets

244	...	40	16
246	...	60	14
249	...	25	16

## Morse Tubular Guards Brass or Weatherproof Sockets

Cat. No.	Each	Size In.
99	....	6 1/2 x 1 1/8
99-WP	....	6 1/2 x 1 1/8
99-A	....	6 1/2 x 2
99-AWP	....	6 1/2 x 2



## Bunghole Guards

Tubular	100	6 1/2 x 1 1/8	Bunghole
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## Crescent Wall Guards

Style A fits any standard 3-inch outlet box. Style A1 is same style as A but fits 4-inch outlet box.

Style B has removable ring which is attached to wall for 25 and 40-watt lamps only.

Style C wall guard and outlet box cover combined, No. 1439. Made of bessemer steel wire ribs, stamped rings and plate over cover which will fit a 3-inch or 4-inch outlet box and will take standard outlet box cover receptacles.

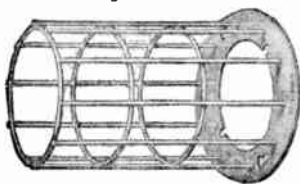
Style D is the same as Style C except that it is fitted with a trap or cover which is equipped with a key locking arrangement. Tinned finish.

Style E wall guard No. 1580 is made for use with Types J and K condulets. Heavy tinned finish.

Style F No. 1581, same as No. 1580 except furnished with locking attachment.

Cat. No.	Each	Style	DIMENS., In.		Wt., Lbs.
			Diam.	Depth	per Doz.
1436	\$1.20	A	2 1/8	5 3/4	9
1438	1.40	A1	3 1/8	6 1/2	9
1437	1.80	B	3 1/8	6 1/2	9
1439	1.40	C	3 1/4	5 3/8	12
1440	2.20	D	3 1/8	5 5/8	13
1580	1.40	E	3 1/8	6	9
1581	1.80	F	3 1/8	6	10
1590	2.90	100-150 Watt	3 1/2	6 3/4	10
1591	3.00	200 Watt	4 1/8	8 1/4	12

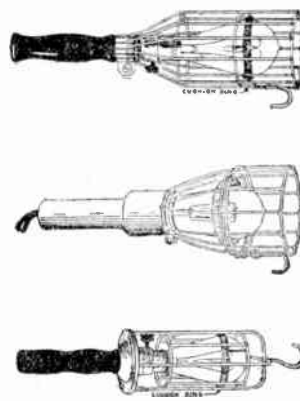
## Benjamin Outlet Box Lamp Guards



Adapted for low ceilings, side walls, foot lights, etc. Base is slotted to fit 3 1/4 or 4-inch boxes; will take 40 and 60-watt lamps. Heavily tinned after parts are welded.

Cat. No.	Diam. In.	Depth In.	Std. Pkg.	Wt., Lbs. Each	Price Each
1400	4	5 3/4	10	1 1/2	\$ .90

## Morse Eureka Portable Hand Guards



No.	Each	Watts	Ga. Wire
30	....	25-40	12
70	....	50-60	12
72	....	100	12
69	....	200	12
<b>With Reflectors</b>			
31	....	25-40	12
74	....	50-60	12
<b>With Cushion</b>			
75	....	50-60	12
77	....	100	12
73	....	200	12
<b>Closed Bottom</b>			
36	....	25-40	8
46	....	50-60	8
48	....	100	8
<b>With Reflectors</b>			
37	....	25-40	8
47	....	50-60	8

## No. 7000 Series McGill Rubber Handle Portable Guards



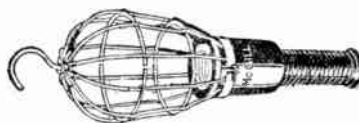
Black handle of the best grade rubber compound. Easy to grip.

The cage has 10 wires electrically welded, double

plated and lacquered. Takes up to 100-watt type C lamp.

No. 7000, No. 4003-S Black Composition Keyless Socket	each	\$2.50
No. 7000-R, Same as No. 7000 but with Aluminum Reflector	each	3.00
No. 7000-S, Same as No. 7000 except with No. 4005-S 660-Watt Levolver Socket with Fibre Lever	each	3.00
No. 7000-SR, Same as No. 7000-R Except with No. 4005-S 660-Watt Levolver Socket with Fibre Lever	each	3.50

## No. 7000-M Series McGill Portable Lamp Guards Mill Type



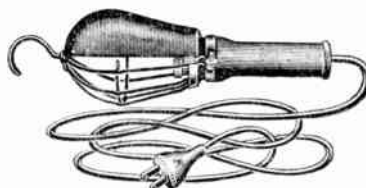
For hard usage in garages and industrials.

Has small cage for mill type lamps, 50-watt rough service lamp and 40-watt Mazda Type C lamp.

No. 7000-M, Keyless Socket	each	\$2.80
No. 7000-MR, Keyless Socket and Reflector	each	3.20
No. 7000-MS, Lever Socket	each	3.30
No. 7000-MSR, Lever Socket and Reflector	each	3.70

Nos. 7000-M and 7000-MR can be supplied with grounding attachment at an extra cost of 50 cents each.

## No. 9000-R McGill Portable Lamp Guards



Steel wire cage is fitted with stationary hook and is adjustable to accommodate lamps from 25 to 60 watts. Has stamped steel reflector; easy-grip black rubber handle equipped with strain relief. Equipped with 20-foot rubber cord, No. 18 wire and rubber attachment plug.

Socket, 660 watts, 250 volts; porcelain base.

Tinned finish.

No. 9000-R	each	\$2.70
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## Crescent Tubular Lamp Guards

A slender portable for use behind switchboard, examining boilers, among machine parts, for garages, automobiles, and places where space is limited. Keyless socket. Extreme diameter, only 2 inches. Length, with hook, 13 inches. Made of brass throughout with the exception of the wooden handle.

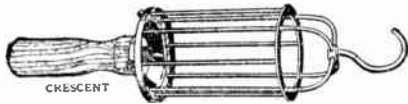
No. 2598, to Fit 25-Watt Lamps	each	\$2.50
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## Thumb Switch Type Portable Lamp Guards

One of the best all around guards for the private and public garage, basements, etc. It has a non-breakable lever socket for one hand operation.

No. 2002 For 25-50-Watt Type Mill Lamps	each	\$2.80
No. 2003 For 50-60 C Lamps	each	2.80

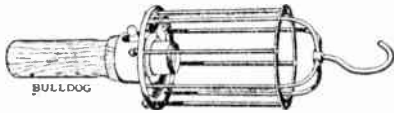
**Crescent Portable Lamp Guards**



Bessemer steel rods; stamped metal ring, copper-plated. Takes 3/8-inch standard brass socket.

For Mazda C lamps.  
No. 4645, for 25-60 Watt.....each \$2.50  
No. 4676, for 25-100 Watt.....each 2.50

**Bulldog Portable Lamp Guards**

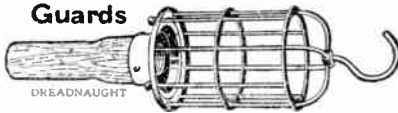


Furnished with key or keyless socket, securely embedded in handle, giving a firm, rigid base.

No. 4675, Lever Socket to Fit 60-Watt Lamps....each \$3.50  
No. 2590, Keyless Socket to Fit 60-Watt Lamps...each 3.50

**No. 4000 Dreadnaught Portable Lamp Guards**

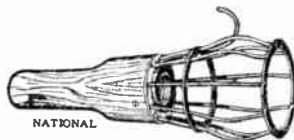
Steel wire guard with hook, copper plated. For 50-watt old style or 25-40-50-60-watt new style Mazda B or C lamps. Composition keyless socket, hardwood handle. Length 9 3/4 inches.  
No. 4000, Weight 1 5/8 Pounds.....each \$3.50



**National Portable Lamp Guards**

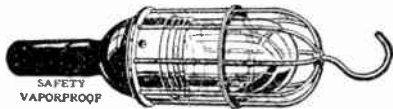
Steel, heavily tinned; composition keyless socket. 1450, milltype; 1450R, reflector.

Cat. No.	Each	Lamp Watts	Wt. Lbs.
1450	\$2.00	15-40	1 1/4
1450R	2.25	15-40	1 1/2
1451	2.50	25-60	1 1/16
1452	2.50	40-100	1 1/16



**No. 3001 Safety Vapor-Proof Portable Lamp Guards**

For use wherever inflammable materials are used. Steel frame, vapor-proof receptacle. Heavily tinned.  
No. 3001, to Fit 25-Watt Lamps.....each \$5.00  
Will take 50-watt A-19 rough service lamp.



**Cable Rack Portable Lamp Guards**

Key or keyless socket embedded in the handle. Take 50-watt old style Mazda lamps; new style, 15-60 watts...



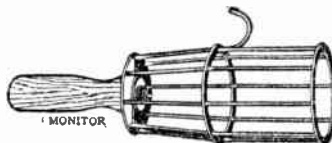
No. 2000R, with Key Socket.....each \$2.80  
No. 2001R, with Keyless Socket.....each 2.80

**No. 1453 Monitor Portable Lamp Guards**

A low priced guard furnished without socket.

Prevents breakage and helps to reduce danger from hot and broken lamps.

No. 1453, to Fit 40-Watt Lamps.....each \$1.70



**Protex Rubber-Handled Portable Lamps**



No. PGH

Protex Portable Lamps can be used with perfect safety. The handle is of rubber which will withstand well over 10000 volts. Rustproof guard is built for rough service. Rubber socket has lip which fits over butt of lamp to prevent water, etc. from entering.

Can be furnished with either open or closed end guard for all sizes of lamps up to and including 200 watts.

No. P, Protex Handle Only.....each \$1.25  
No. PGH, Protex Handle, Socket and Wire Guard with Hook.....each 2.50  
No. PGHR, Protex Handle, Guard, Hook and Reflector.....each 3.25

**No. VGH Vaprotex Rubber-Handled Portable Lamps**



A vapor-proof, shock-proof lamp for temporary lighting in hazardous locations.

For all sizes of lamps up to and including 100 watts; steel wire or aluminum guard.

No. VGH, 60-Watt Size, with Socket, Vapor-Proof Globe, Steel Wire Guard, Hook, Less Lamp...each \$9.00

**R & S Non-Watertight Hand Portables**

Extra strong, galvanized steel, with hardwood handle and No. 180 weatherproof keyless socket.



No. 473, 60-Watt.....each \$4.80

**No. 422 R & S Watertight Hand Portables**

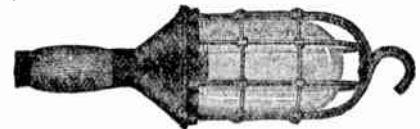


Cast brass body, flat brass wire guard, hardwood handle with stuffing gland for cable and screw type globe No. 806.

Price, No. 422, 60-Watt.....each \$5.25

**No. 519 R & S Watertight Hand Portables**

All cast brass body, round wire guard with cast brass rings, hardwood handle, stuffing gland for cable and screw type globe No. 806.



No. 519, 60-Watt.....each \$7.20

**No. 445 R & S Bunghole Lamps**

Made entirely of brass and fitted with special 16 c.p. waterproof lamp and stuffing gland for cable.

Price No.445, with Special Lamp.....each \$12.60  
" " 391, Ex. Lamp, 110 Volt....." 1.60



## Graybar Direct Lighting Globes

These globes are shaped to give the maximum results which can be obtained with modern diffusing glass. They have a high efficiency, being low in brightness and without shadows or bright spots. They are of uniform quality and weight. The bowls are free of streaks, blisters, checks or other imperfections. Due to the smooth surface of opal glass, dust and dirt do not settle upon them.

are made in the standard sizes to accommodate various size lamps generally used in commercial lighting. They are interchangeable with the many styles and types of Graybar fixtures, all of which insure the correct lighting center to produce the best distribution.

They are available in either homogeneous opal diffusing or in the popular cased glass which consists of a layer of crystal glass over opal.

The Graybar No. 66, No. 88, and No. 99 series of globes



No. 6620, Plain  
No. 66 Series, Opal

No. 6620, D-3

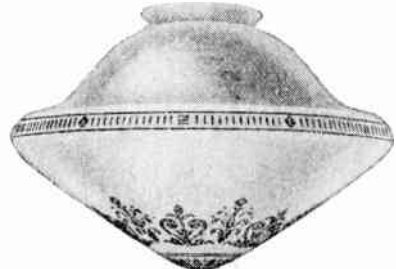
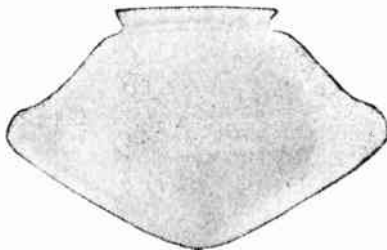
No. 6620, D-4  
No. 66 Series, Cased

Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Wt. Lbs.
6675	\$1.00	4	9	5	75	12	25
6680	1.60	4	10	6	75-100	8	25
6610	2.70	†4 or 6	12	7	100-150	6	25
6620	3.50	6	14	8½	200	2	13
6630	5.10	6	16	9¼	200-300	1	10
6650	7.90	8	18	11	500	1	15

Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Wt. Lbs.
6675	\$1.20	4	9	5	75	12	25
6680	1.90	4	10	6	75-100	8	25
6610	3.20	†4 or 6	12	7	100-150	6	25
6620	4.10	6	14	8½	200	2	13
6630	6.10	6	16	9¼	200-300	1	10
6650	10.10	8	18	11	500	1	15

For decorative bowls, specify D-3 or D-4 after Cat. No.

For decorative bowls, specify D-3 or D-4 after Cat. No.



No. 8820, Plain  
No. 88 Series, Opal

No. 8820, D-452  
No. 88 Series, Opal

Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Wt. Lbs.
8875½	\$1.00	4	9	5¼	75	8	18
8880½	1.60	4	10	6	75-100	8	19
8810½	2.70	†4 or 6	12	7¼	100-150	4	17
8820½	3.50	6	14	8½	200	2	13
8830½	5.10	6	16	9¼	200-300	2	15

Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Wt. Lbs.
8875	\$1.00	4	9	6⅞	75	8	19
8880	1.60	4	10	6⅞	75-100	8	20
8810	2.70	†4 or 6	12	8⅞	100-150	4	18
8820	3.50	6	14	8⅞	200	2	14
8830	5.10	6	16	10⅞	200-300	2	16

For decorative bowls, specify D-452 after Cat. No.

For decorative bowls, specify D-452 after Cat. No.



No. 9920, Plain  
No. 99 Series, Opal

No. 9920, D-1

No. 9920, D-2  
No. 99 Series, Cased

Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Wt. Lbs.
9975	\$1.00	4	9	6¼	75	12	22
9980	1.60	4	12	6½	75-100	4	12
9910	2.70	†4 or 6	12	7¾	100-150	4	14
9920	3.50	6	14	9	200	2	12
9930	5.10	6	16	10	200-300	2	16
9950	7.90	†6 or 8	18	12	500	1	15
9960	14.10	8	20	14	500-750	1	17

Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Wt. Lbs.
9975	\$1.20	4	9	6¼	75	12	25
9980	1.90	4	10	6½	75-100	8	26
9910	3.20	†4 or 6	12	7¾	100-150	6	25
9920	4.10	6	14	9	200	2	13
9930	6.10	6	16	10	200-300	1	10
9950	10.10	†6 or 8	18	12	500	1	15
9960	17.00	8	20	14	500-750	1	17

For decorative bowls, add D-1, D-2, or D-6 to Cat. No.

For decorative bowls, add D-1, D-2, or D-6 to Cat. No.

\*Prices on decorative bowls upon application. †The 4-inch fitter is standard; 6-inch supplied on request only. ‡Specify either 6 or 8-inch when ordering.

For decorative bowls, add D-1, D-2, or D-6 to Cat. No.

Graybar Semi-Indirect and Indirect Lighting Globes

Where semi-indirect or indirect lighting is desired, Graybar has a variety of glassware to offer. Most of these types follow the style of the enclosed semi-indirect lighting globe.

This type of globe is available in three distinct shapes.

The No. 44 series represents a development which makes it adaptable to fixtures already installed and where a totally indirect system is desired to replace a direct or semi-indirect system. The Silvray Lamp (silver processed bottom) is used with the unit.

This globe is constructed in either of two ways. It may consist of a single layer of opal glass of high translucent character or it may be made of crystal glass, heavily

enamel on the bottom with a slightly diffused top.

The No. 33 series of enclosed semi-indirect lighting globes is made of clear crystal glass with the lower half treated with a silicate enamel and the upper half slightly etched on the inside for better diffusion.

The No. 333 series shape is constructed with the lower part consisting of three layers of glass—opal, crystal, and opal, while the upper part consists of a thin layer of opal under the crystal. The No. 77 series is similarly constructed.

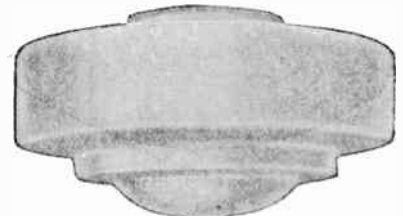
The No. 16 is an open type semi-indirect bowl of opal glass adaptable to the 11-R suspension fixture.



No. 3320, Plain



No. 3320, D-5



No. 333-20, Plain

No. 33 Series, Reflex

Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Pkg. Wt. Lbs.
3375	\$2.50	4	9	6 1/4	75	12	22
3380	2.90	4	10	6 1/2	75-100	4	12
3310	3.80	4 or 6	12	7 3/4	100-150	1	14
3320	5.90	6	11	9	200	2	12
3330	7.40	6	16	10	200-300	2	16
3350	10.60	6 or 8	18	12	500	1	15

No. 333 Series, Reflex

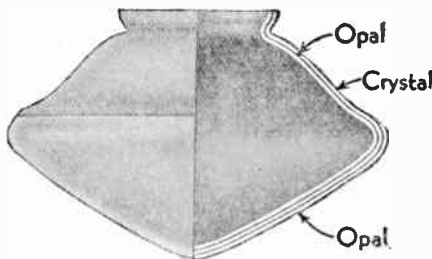
Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Pkg. Wt. Lbs.
333-10	\$4.30	6	12	7 3/4	100-150	6	27
333-20	6.50	6	14	9	200	2	15
333-30	8.30	6	16	10	200-300	1	11
333-50	11.70	8	18	12	500	1	16

For decorative bowls, specify D-5 after Cat. No.

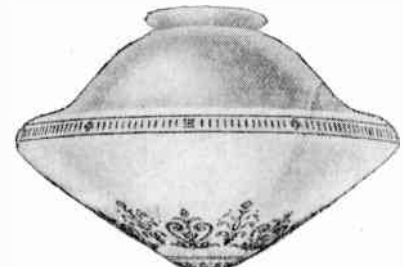
For decorative bowls, specify D-401 after Cat. No.



No. 7720, Plain



No. 7720, Plain, Cross Section



No. 7720, D-452

No. 77 Series, Reflex

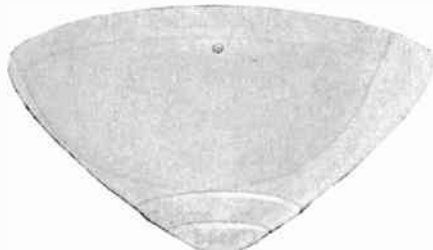
With Ground Off Necks—For G Type Fixtures Only							
Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Pkg. Wt. Lbs.
7775 1/2	\$2.80	4	9	5 1/16	75	8	18
7780 1/2	3.20	4	10	6	75-100	8	19
7710 1/2	4.30	4 or 6	12	7 11/16	100-150	1	17
7720 1/2	6.50	6	14	8 15/16	200	2	13
7730 1/2	8.30	6	16	9 10/16	200-300	2	15

No. 77 Series, Reflex

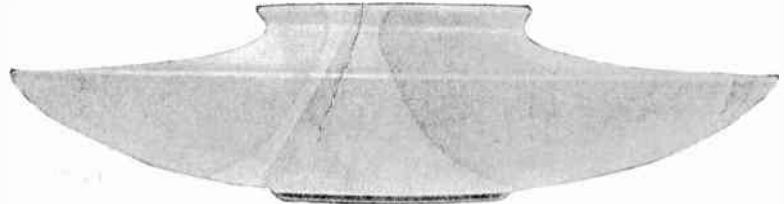
With Necks—For All Standard Fixtures							
Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Pkg. Wt. Lbs.
7775	\$2.80	4	9	6 5/16	75	8	19
7780	3.20	4	10	6 5/16	75-100	8	20
7710	4.30	4 or 6	12	8 5/16	100-150	4	18
7720	6.50	6	14	8 11/16	200	2	14
7730	8.30	6	16	10 5/16	200-300	2	16

For decorative bowls, specify D-452 after Cat. No.

For decorative bowls, specify D-452 after Cat. No.



No. 16



No. 44 Series, Reflex

With Ground Off Neck—For G Type Fixture Only							
Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Pkg. Wt. Lbs.
4410 1/2	\$3.80	4	12	2	150	6	12
4420 1/2	5.90	6	14	2 1/2	200	6	16
4430 1/2	7.40	6	16	3 1/2	300	3	10
With Neck—For Standard Fixtures							
4410	\$3.80	4	12	2 1/2	150	6	12
4420	5.90	6	14	3	200	6	16
4430	7.40	6	16	4	300	3	10

No. 16, Open Bowls

For 11R Fixture							
Cat. No.	*Each	Fitter In.	Diam. In.	Depth In.	Recommended Wattage	Std. Pkg.	Pkg. Wt. Lbs.
16	\$6.10	16	7 1/8	200	t	27	

\*Prices are for plain globes only. Prices for decorative bowls upon application. 1/4-inch is standard, 6-inch furnished on request only.

## Graybar G-Type Fixtures

The G-Type Fixture was designed for use with the No. 77 or No. 88 series of globes. As the necks on the globes are unnecessary with this fixture, they have been removed.

This combination of globe and fixture offers a highly efficient and pleasing unit. Graceful lines have been attained without hampering the sturdiness of construction.

The G Fixture is made in both the tube suspension and ceiling types. It is constructed of 22-gauge brass and furnished with 4 or 6-inch safety type fitters suitable to suspend all the globes of the No. 77 and 88 series. These globes range from 9 to 16 inches in diameter in the direct and semi-indirect type enclosing globe to accommodate up to 500-watt lamps.

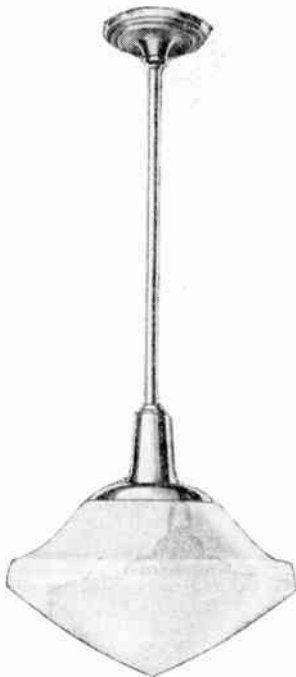
The holder proper consists of three I-shaped lugs attached to the lower flange of the socket cover. They easily slip under the neck opening of the globe and form a neat support without strain of any kind for the globe. Once seated, the globe is locked in place by two locking slides which can be operated simultaneously with one hand by merely sliding them in or out of position. The whole mechanism of this holder is concealed by an accurate fitting, removable cover.

Wired complete with strap, screws, and knurled nuts, ready for installation.

Finish is satin chromium.



G6C-8820 1/2



G6H-7720 1/2

Cat. No.	Each	Suspension	Fitter In.	Length Fixture Less Glass In.	Socket	Std. Pkg.	Pkg. Wt. Lbs.
G4C	\$2.40	Ceiling	4	5 1/8	Medium	10	17
G6C	2.40	Ceiling	6	6 1/8	Medium	10	17
G7C	3.00	Ceiling	6	6 1/8	Mogul	10	20
G4H	4.00	Stem	4	26	Medium	10	20
G6H	4.00	Stem	6	26	Medium	10	20
G7H	4.60	Stem	6	26	Mogul	10	25

## Graybar X-Type Fixtures



X6C-3320

Since the introduction of the Graybar X-Type Fixtures, the purchase of inferior fixtures for economy has become unnecessary. The low price of this fixture has been obtained, without the sacrifice of workmanship or material, by quantity production and improved manufacturing.

Plated statuary bronze is the standard finish. When required, finishes such as English bronze, satin chromium or bronze metal can be furnished.

Made to accommodate all lamps up to and including 300 watts, and are wired complete with strap, screws, and knurled nuts, ready for installation.

Cat. No.	*Each	Suspension	Fitter In.	Length Fixture Only In.	Socket	Std. Pkg.	Pkg. Wt. Lbs.
X4C	\$1.70	Ceiling	4	4	Medium	25	30
X6C	1.80	Ceiling	6	6	Medium	25	30
X7C	2.70	Ceiling	6	6	Mogul	25	40
X4H	2.50	Chain	4	36	Medium	24	53
X6H	2.50	Chain	6	36	Medium	24	55
X7H	2.90	Chain	6	36	Mogul	24	61
X4H4	3.30	Stem	4	26	Medium	Bulk	..
X6H4	3.30	Stem	6	26	Medium	Bulk	..
X7H4	3.70	Stem	6	26	Mogul	Bulk	..

\*Prices are for 22-gauge brass.

Fixtures supplied with socket and switch for 2 filament lamp, add \$2.40.



X6H4-3320



X6H-9920



## Graybar A-Type Fixtures



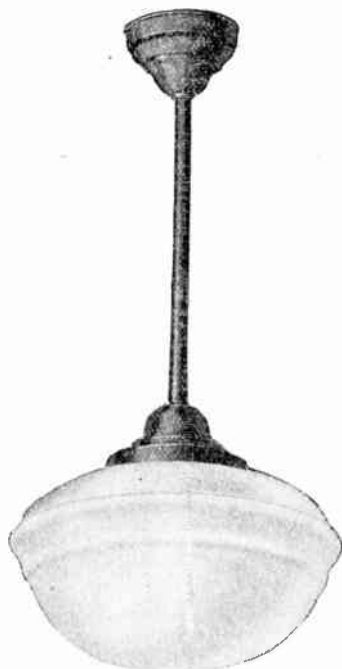
A6C-9920

The Graybar A-Type fixture offers a pleasing design with lasting finishes and fine workmanship.

To install glassware, merely slip the glass over the two arms on holder and lower self-aligning ring which makes the unit foolproof and dustproof.

Accommodates lamps up to and including 300 watts. Standard finishes are statuary bronze or pewter. For brass fixtures, statuary bronze, pewter, acid bronze, brush brass or bronze metal finish is supplied.

All fixtures are wired complete with strap, screws, and knurled nuts, ready for installation.



A6H4-3320



A6H-333-20

Cat. No.	*Each	Suspension	Holder		Length Fixture Only In.	Std. Pkg.	Pkg. Wt. Lbs.
			In.	Socket			
A4C	\$1.10	Ceiling	4	Medium	4 1/2	32	..
A6C	1.10	Ceiling	6	Medium	4 3/4	16	..
A7C	2.30	Ceiling	6	Mogul	5 1/2	16	..
A4H	1.90	Chain	4	Medium	36	32	..
A6H	1.90	Chain	6	Medium	36	32	..
A7H	2.60	Chain	6	Mogul	36	32	..
A4H4	4.30	Stem	4	Medium	24	Bulk	..
A6H4	4.30	Stem	6	Medium	24	Bulk	..
A7H4	4.80	Stem	6	Medium	24	Bulk	..

\*Prices are for fixtures made of steel. Prices on 20, 22, and 24-gauge brass upon application.

## Graybar W-Type Fixtures

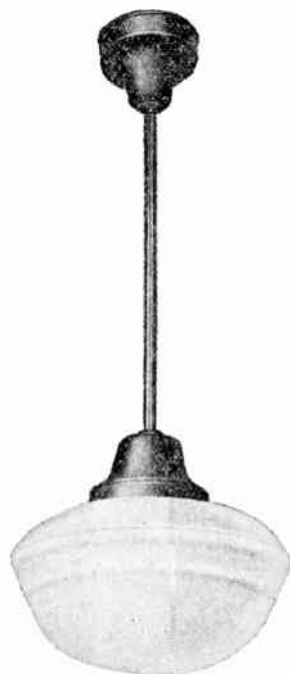


W6C-9920

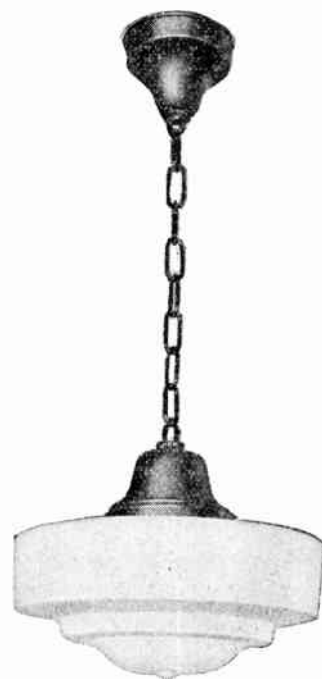
Graybar W-Types feature both good construction and substantial materials. Supplied in eggshell bronze finish but can be had in special finishes.

Accommodates all sizes of commercial lamps.

Wired complete with strap, screws, and knurled nuts, ready for installation.



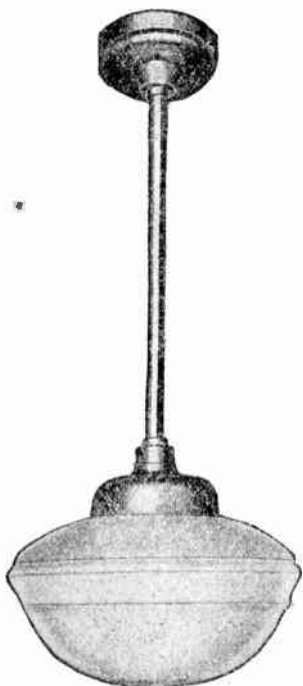
W6H4-3320



W6H-333-20

Cat. No.	Each	Suspension	Fitter In.	Length Fixture Only		Socket	Std. Pkg.	Pkg. Wt. Lbs.
				In.	In.			
W4C	\$2.00	Ceiling	4	4 3/4	Medium	12	22	
W6C	2.10	Ceiling	6	5 1/2	Medium	12	28	
W7C	2.40	Ceiling	6	5 1/2	Mogul	12	30	
W4H	2.90	Chain	4	24	Medium	12	29	
W6H	3.20	Chain	6	24	Medium	12	32	
W7H	3.45	Chain	6	24	Mogul	12	34	
W4H4	3.30	Stem	4	24	Medium	10	30	
W6H4	3.50	Stem	6	24	Medium	10	34	
W7H4	3.85	Stem	6	24	Mogul	10	36	
W8H4	5.50	Stem	8	24	Mogul	10	38	

## Graybar Shelcrest Fixtures



M6H-3320

Graybar Shelcrests are a distinct advance in design, material and appearance from competitive commercial fixtures now available. They have many unique features—simple foolproof holder, sectional stem, swivel joint, shallow slip canopy, and maximum insulating qualities.

Shelcrest fixtures are supplied wired with No. 14 stranded asbestos-covered wire, marked for polarity. They are furnished in hanging and ceiling types, accommodating all lamps up to and including 300 watts. When used with Graybar No. 99, 66, 33, or 88 series, plain or decorated globes, Shelcrests are suitable for the finest of commercial interiors.

Made of genuine molded bakelite.

The standard finish of Shelcrest fixtures is Japanese Bronze. The color permeates the entire material and surface scratches, common to fixtures with any other finish, will not show on Shelcrests. The finish will not tarnish or fade.



M6C-9920, D-2

Cat. No.	Each	Suspension	Fitter In.	Length Fixture Only In.	Socket	Std. Pkg.	Pkg. Wt. Lbs.
M4C	\$4.80	Ceiling	4	4½	Medium	12	21
M6C	6.40	Ceiling	6	5	Medium	12	24
M4H	6.40	Stem	4	23	Medium	12	24
M6H	7.40	Stem	6	24	Medium	12	27
M7H	9.20	Stem	6	24	Mogul	12	30

## Graybar Lincrest Fixtures



L6H-9920

Lincrest Fixtures have screwless holder made of three metal segments actuated by single operating pin, protruding through a safety slot. One easy movement contracts segments on camera shutter principle—automatically centers the globe without strain on glass and locks in position.

Canopy is of No. 22 A. W. G. brass. Has rolled edges, knock-out, and solid brass slip collar securely fastened. Two set screws are in slip collar.

Suspension type has a cast brass hickey, ½ and ¾-inch female thread; stem, ¾-inch heavy brass tubing over iron nipple. Cast brass loops, brass chain, porcelain socket rigidly mounted in correct position. Smooth roomy wire channels. Overall length of suspension fixtures, 26 inches.

Supplied with No. 16 asbestos-covered stranded wire (unattached) with tracer in art silk braid.

Finished in heavy plated statuary bronze, buffed to a high polish and uniform color.



L6C-6620

Cat. No.	Each	Suspension	Fitter In.	Length Fixture Only In.	Socket	Std. Pkg.	Pkg. Wt. Lbs.
L4C	\$3.40	Ceiling	4	5½	Medium	12	29
L6C	4.40	Ceiling	6	6½	Medium	12	44
L7C	5.10	Ceiling	6	6½	Mogul	12	45
L4H	4.10	Chain	4	26	Medium	12	39
L6H	4.90	Chain	6	26	Medium	12	45
L7H	5.60	Chain	6	26	Mogul	12	48

Graybar Stancrest Fixtures



S6H-9920



S6C-9920

Stancrest Fixtures have a screw type globe holder with  $\frac{5}{32}$ -inch brass screws threaded through heavy brass lugs. Screws are beveled to prevent loosening and upset to prevent removal. Four screws are provided for 6-inch fitters and three screws for the 4-inch fitters. Ceiling type is supplied with slotted strap and screws to take slotted barrel nuts.

Canopy is of No. 22 A.W.G. brass, with rolled edges and knockout. Solid brass slip collar, cast brass hickey. Stem is  $\frac{3}{4}$ -inch heavy brass tubing over iron nipple. Cast brass loops, brass chain, porcelain socket, and smooth roomy wire channel.

Supplied with No. 16 asbestos covered stranded wire (un-attached) with tracer in art silk braid.

Finished in heavy plated statuary bronze, buffed to a high polish and uniform color.

Cat No.	Each	Suspension	Fitter In.	Length Fixture Only In.	Socket	Std. Pkg.	Pkg. Wt. Lbs.
S4C	\$2.30	Ceiling	4	5	Medium	12	28
S6C	3.00	Ceiling	6	5½	Medium	12	39
S7C	3.70	Ceiling	6	5½	Mogul	12	41
S4H	3.00	Chain	4	26	Medium	12	33
S6H	3.40	Chain	6	26	Medium	12	36
S7H	4.10	Chain	6	26	Mogul	12	39

Graybar Faircrest Fixtures



F6H-6620



F6C-6620

Faircrest Fixtures have screw type holder consisting of  $\frac{5}{32}$ -inch brass screws threaded through heavy brass lugs securely held in place. Lugs have five threads. Screws are bevel-pointed to prevent loosening and upset to prevent removal. Four screws are supplied in 6-inch holder and three screws on the 4-inch holder.

Ceiling types are supplied with slotted barrel nuts for mounting.

Canopy and socket covers are No. 22 A.W.G. brass with rolled edges. Knockout in canopy flange. Brass chain and loops.

Supplied with No. 16 asbestos-covered stranded wire, tracer in art silk braid.

Finished in plated statuary bronze on eggshell surface.

Cat. No.	Each	Suspension	Fitter In.	Length Fixture Only In.	Socket	Std. Pkg.	Pkg. Wt. Lbs.
F4C	\$1.90	Ceiling	4	5	Medium	12	28
F6C	2.60	Ceiling	6	5½	Medium	12	39
F7C	3.30	Ceiling	6	5½	Mogul	12	41
F4H	2.60	Chain	4	26	Medium	12	33
F6H	3.00	Chain	6	26	Medium	12	36
F7H	3.70	Chain	6	26	Mogul	12	39



## Graybar R-Type Fixtures

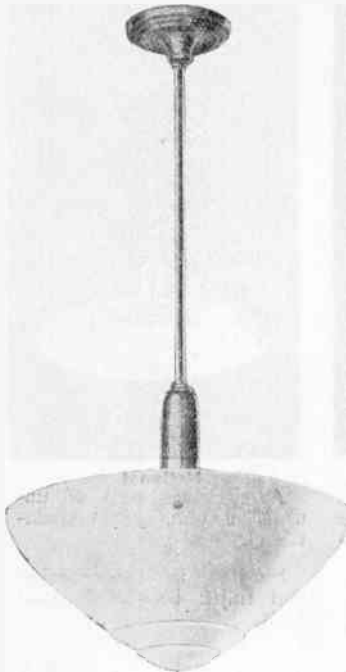
The R-Type Fixture was designed to offer a pendant which permitted a choice of various reflecting mediums.

The 11R16 consists of the pendant 11R to which is attached the No. 16 opal glass bowl. This bowl is available in the 16-inch diameter only.

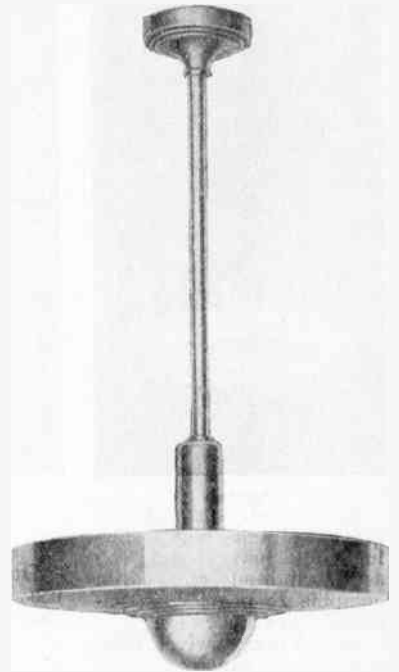
The 11R116 consists of the pendant 11R to which is attached the No. 116 porcelain enameled steel reflector. The inside of this reflector is coated with the best grade reflecting white enamel. The outside is finished in a rich cream color porcelain enamel. The combination presents a totally indirect fixture which is not unlike the appearance of the 11R16 when unlighted.

The 11R17 consists of the 11R pendant to which is attached a specially designed, shallow 20-gauge spun metal pan. The outside is finished in the same satin chromium finish as the pendant itself. A cup reflector designed to properly control the light is also supplied.

The 11R pendant as supplied with this fixture will be shipped with  $\frac{3}{4}$ -inch stem unless  $\frac{1}{2}$ -inch stem is specifically ordered.



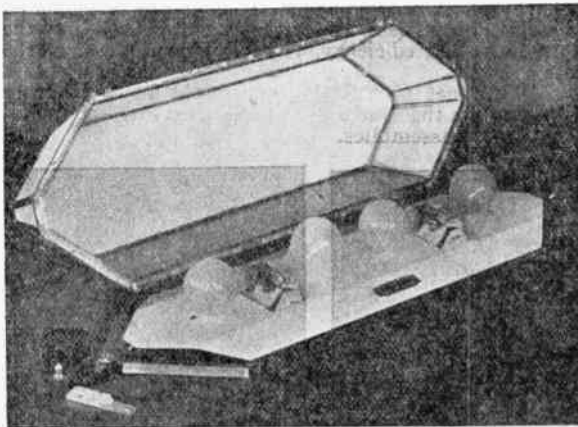
No. 11R16



No. 11R17  
No. 11RM18

Cat. No.	Hanger		Length In.	Reflector	
	Each			Diam. In.	Lamp Watts
11R	\$3.30		26	..	...
11R16	9.40		33	16	200
11R116	7.00		33	16	200
11R17	10.60		31	16	200
11RM18	11.10		31	16	300

## Graybar Domino System of Decorative Lighting



The Domino unit consists of a pointed oblong box composed of nine pieces of flashed opal glass held in a satin chromium frame, die-cast from the same metal alloy that is used in automobile hardware. A simple modernistic design.

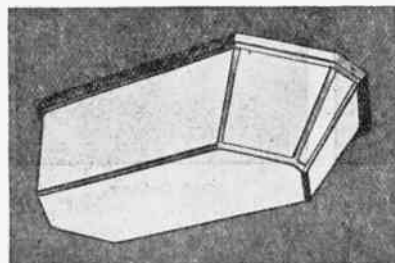
Two special twin sockets accommodate lamps of from 25 to 100-watt sizes, the light being directed downward and sideways by a baffle plate of porcelain enamel.

The individual units are interconnectible at ends and sides. The diagram shows four simple patterns which suggest the decorative possibilities of the Domino System.

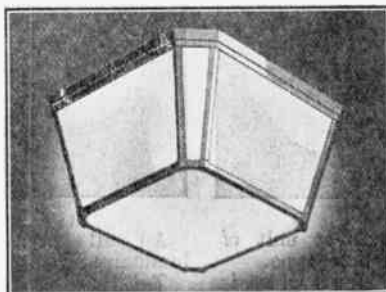
Length, 31 inches; width, 11 inches; depth,  $6\frac{1}{4}$  inches. Connector,  $2\frac{3}{8}$ -inch diameter, is listed separately.

Complete instructions are included with each unit.

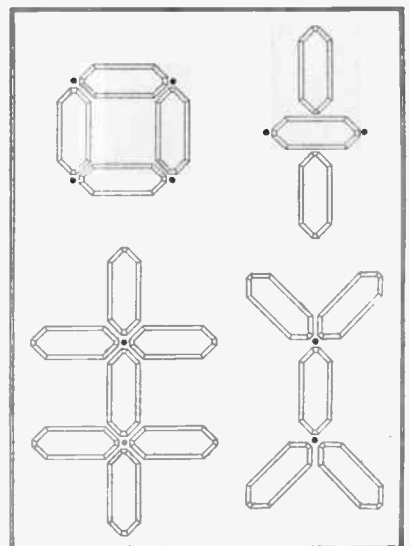
Domino units can also be furnished square as illustrated below.



Oblong Domino Lighting Unit



Square Domino Lighting Unit



Graybar Silvray Fixtures  
Commercial Units



**Puritan**

An attractive metal and glass indirect unit. The luminous louvre and the softly lighted glass disc combine to provide an unusually pleasing effect.

Self-aligning swivel joint concealed in canopy.

Finish, 2-tone aluminum and cadmium pewter.

Silvray Indirect Fixtures are ruggedly constructed of suitable heavy gauge metals of selected quality. They provide many additional advantages over ordinary indirect fixtures.

The Silvray Process marks a radically different method in the design and application of indirect lighting, eliminating the need of auxiliary reflectors. The inherent high efficiency of the Silvray Processed Lamp makes possible indirect illumination on a wattage basis no higher than is required for direct or semi-indirect lighting. Unusually excellent results as to distribution, intensity, and maintained high efficiency, are obtained with cleaning practically eliminated.



**Plymouth**

A totally indirect luminaire of massive proportions

Designed principally for use in large areas with relatively high ceilings, such as large retail establishments.



**Metalux**

A good appearing all-metal unit with modernistic lines. Totally indirect of the opaque bowl type.

Constructed of heavy gauge metals.

Reeded stem suspension. Self-aligning swivel joint.

Finish, cadmium pewter with black relief.



**National**

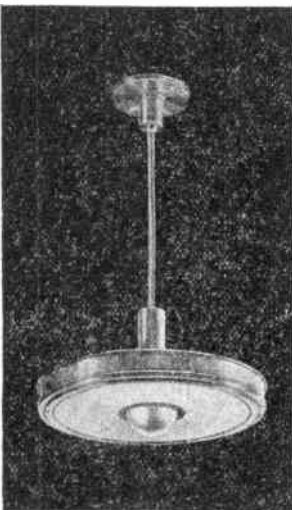
An indirect unit of unusual design, yet conventional.

Similar in construction and finish to the Puritan Unit.

These Silvray Fixtures actually take no part in the delivery of illumination, as they are equipped with the light-directing Silvray Processed Lamp. The sole function of the fixture is to provide the decorative note which the particular need may require.

Relamping is done from below. It should be remembered that after each processed lamp is replaced it restores the unit to its initial efficiency, regardless of the age of the fixture.

A safe bayonet type fitting makes the bowl instantly removable from the suspension by a simple twist—no screws or complicated assemblies.



**Standish**

A new departure in indirect luminaires, possessing a very small cross section.

Similar in construction and finish to the Puritan Unit.



**Bilite**

Totally indirect unit of the luminous bowl type.

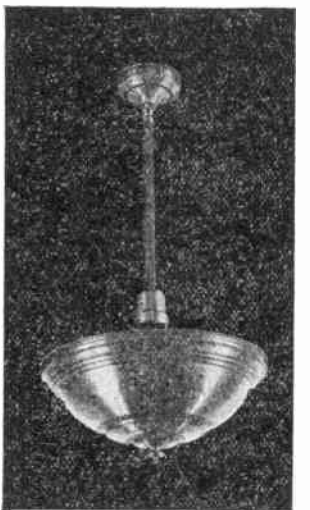
The bowl of art glass is softly and evenly illuminated suggesting a light source.



**Moderne**

An all metal indirect luminaire of simple design.

Totally indirect of the opaque bowl type, possessing many attractive features.

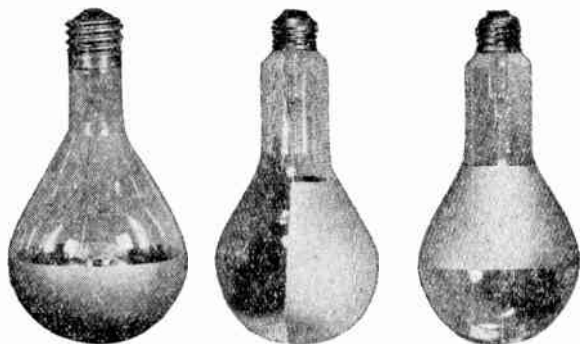


**Old Colony**

A widely accepted all metal unit of good design.

Totally indirect of the opaque bowl type, possessing many attractive features.

## Graybar Silvray Processed Incandescent Lamps



**Indirect**

**Covelite**

**Spraylite**

The Indirect (bowl-silvered) Process is used with Silvray Commercial Fixtures and in Silvray Industrial Reflectors. The output of this type is uniformly 97 per cent clear lamp output.

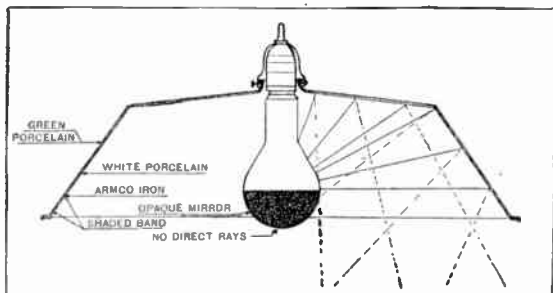
The Covelite Process may frequently be used in place of auxiliary reflectors. It has the advantage of requiring extremely little space in cove, wall niche, and similar installations. It is used to advantage in indirect fixtures containing lamps in a horizontal position. Covelites for local lighting of lathes, etc. provides high intensity on the work, and completely shields the workers' eyes.

The Spraylite Process is for use in indirect floor lamps, for candelabra fixtures of ornamental indirect design, for foundries and other dirty industrials where exposed reflecting surfaces are practically useless, and for window lighting in existing reflectors.

Watts	Process Charge Each	Watts	Process Charge Each	Watts	Process Charge Each
40	\$.54	100	\$.59	400	\$1.31
50	.54	150	.62	500	1.80
60	.54	200	.90	750	2.80
75	.57	300	1.31	1000	3.75

Prices quoted cover cost of the process only. Lamps are not included. If lamps are not furnished and are desired complete, the list price of the clear lamp must be added to the above charges.

## Graybar Silvray Reflectors Industrial Units



The standard Industrial Reflector is furnished in green porcelain enamel outside and white matte porcelain inside, with detachable husk.

Complete eye-shielding is provided by the silver skin applied to the lamp itself. The design of the special reflector assures evenly distributed and diffused light of proper intensity.

The large area of the reflector creates in effect a modified form of indirect illumination for industrial plants and for locations where ceiling conditions do not permit the use of indirect luminaires.

Cat. No.	*Each	Wattage	Diameter Inches	Std. Pkg.	Pkg. Wt. Lbs.
9	\$2.20	50-75	10	10	17 1/2
10	3.60	100-150	17	10	35
11	4.50	200	20	10	40
12	8.75	300-400-500	26	5	45
12A	9.50	750-1000	26	5	47

\*Prices do not include sockets.

## Graybar Silvray Commercial Fixtures Standish

Standard package, 1.

Cat. No.	Each	Wattage	Diam. In.	*Suspension	Wt. Lbs.
101-2	\$17.50	200	16	24	11
102-3	19.50	300	18	31	13
102-5	19.50	500	18	31	13

### Pilgrim

Standard package, 1.

110-2	\$17.50	200	16	24	10
111-3	19.50	300	18	31	12
111-5	19.50	500	18	31	12

### Bilite

Standard package, 1.

200-1	\$16.00	100	14	24	9
200-1 1/2	16.00	150	14	24	9
201-2	17.50	200	16	24	11
202-3	19.50	300	18	31	12
202-5	19.50	500	18	31	12
203-7 1/2	32.50	750	24	38	16
203-10	32.50	1000	24	38	16
203-15	32.50	1500	24	38	16

### Old Colony

Standard package, 1.

210-1 1/2	\$15.00	150	14	24	6
211-2	16.00	200	16	24	7 1/2
212-3	17.50	300	18	31	9
212-5	17.50	500	18	31	9
213-7 1/2	26.00	750	24	38	16
213-10	26.00	1000	24	38	16
213-15	26.00	1500	24	38	16

### Puritan

Standard package, 1.

301-2	\$19.00	200	18 1/2	24	11
302-3	21.00	300	20 1/2	31	13
302-5	21.00	500	20 1/2	31	13
303-7 1/2	37.50	750	29	38	18
303-10	37.50	1000	29	38	18
303-15	37.50	1500	29	38	18

### Moderne

Standard package, 1.

510-1 1/2	\$11.50	150	14	24	6
511-2	13.00	200	16	24	7 1/2
512-3	14.50	300	18	31	9
512-5	14.50	500	18	31	9
513-7 1/2	19.00	750	24	38	16
513-10	19.00	1000	24	38	16
513-15	19.00	1500	24	38	16

### Metalux

Standard package, 1.

611-2	\$16.00	200	16	24	7 1/2
612-3	17.50	300	18	31	9
612-5	17.50	500	18	31	9
613-7 1/2	26.00	750	24	38	16
613-10	26.00	1000	24	38	16
613-15	26.00	1500	24	38	16

### National

Standard package, 1.

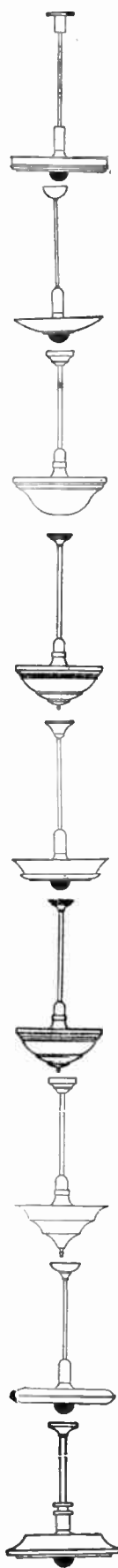
800-1	\$17.50	100	16 1/2	24	9
801-2	19.00	200	18 1/2	24	11
802-3	21.00	300	20 1/2	31	13
802-5	21.00	500	20 1/2	31	13

### Plymouth

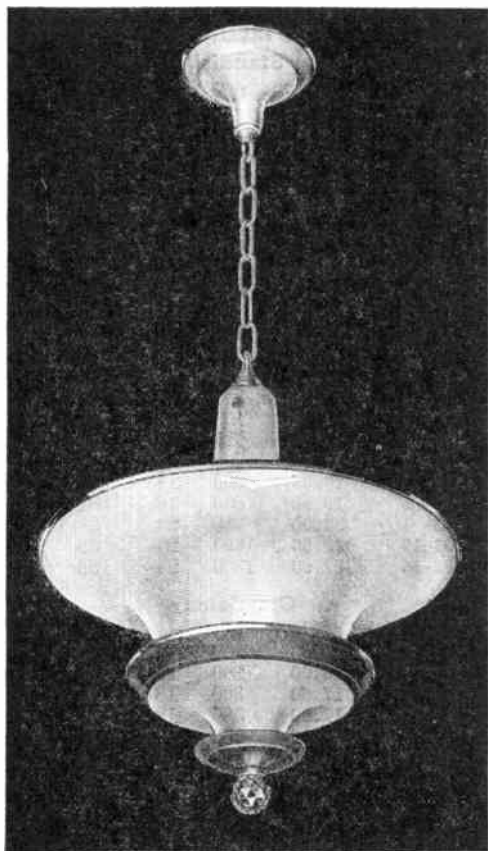
Standard package, 1.

902-3	\$32.50	300	24	31	21
902-5	32.50	500	24	31	21
903-7 1/2	47.50	750	30	38	28
903-10	47.50	1000	30	38	28
903-15	47.50	1500	30	38	28

\*Stem suspensions are standard; chain suspensions optional.







**Graybar Muralier Fixtures**

Muralier Fixtures provide decorative painting composed specially for an architectural setting. Muralier presents a fixture which, in its luxurious blending of design and color effects marks a new epoch in this lighting age.

A refreshing change in the color scheme may be wrought by the alternate use of red, green, blue, or amber. These colors bring interior illumination in harmony with studied decorative effects.

Standard finish, oxidized aluminum.

Fixtures are completely wired and individually packed.

**Chain Pendant Type**

Cat. No.	Each	Diameter Deflector Inches	Recommended Size Lamp Watts	Type Socket	Length Over All Inches
8012	\$12.60	12	100-150-200	Medium	36
8015	15.00	15	300	Mogul	42
8018	16.80	18	300-500	Mogul	42
8024	31.50	24	750-1000	Mogul	42

**Ball Swivel Stem Pendant Type**

8022	\$14.10	12	100-150-200	Medium	36
8025	16.50	15	300	Mogul	42
8028	18.30	18	300-500	Mogul	42
8034	33.00	24	750-1000	Mogul	42

**Close Ceiling Type**

8212	\$10.95	12	100-150-200	Medium	18
8215	13.95	15	300	Mogul	21½
8218	15.75	18	300-500	Mogul	24½
8224	30.45	24	750-1000	Mogul	29

**Muralier Glass Color Filters**

The following listing covers primary colors only. With the additional intermediate tints available it is possible to create any shade desired. Combination color filters are also offered to produce distinct color effects on each deflector, or combinations of colors and tints in limitless arrangement.

Muralier Diameter	12 inches	15 inches	18 inches	24 inches
Each	\$1.26	1.59	1.59	2.64
Cat. No. Red Filter	8508	8500	8500	8504
Cat. No. Amber Filter	8509	8501	8501	8505
Cat. No. Green Filter	8510	8502	8502	8506
Cat. No. Blue Filter	8511	8503	8503	8507

**Graybar Amolier Fixtures**

Amolier is an all-purpose unit with the meritable features of direct, indirect, and semi-indirect lighting.

The Galax dual-density enclosing globe of homogeneous structure affords maximum upward reflection of diffused light over a wide area and supports the etched aluminum deflector which screens the light source.

The low intensity direct light through the bowl section also lights the face of the deflector with a soft luminous effect. The combination is both pleasing and efficient.

Finish, oxidized aluminum.

**Ceiling Suspension**

Plain		Decorative		Recommended Size Lamp Watts	Maximum Diameter Deflector Inches	Type Socket	Glass Diam. Inches	Length Over All Inches
Cat. No.	*Each	Cat. No.	*Each					
6156	\$15.12	6157	\$19.92	150	15	Medium	9x4	15
6206	19.02	6207	25.02	200	18	Medium	12x5	18
6306	27.24	6307	34.44	300-500	22½	Mogul	14x6	24

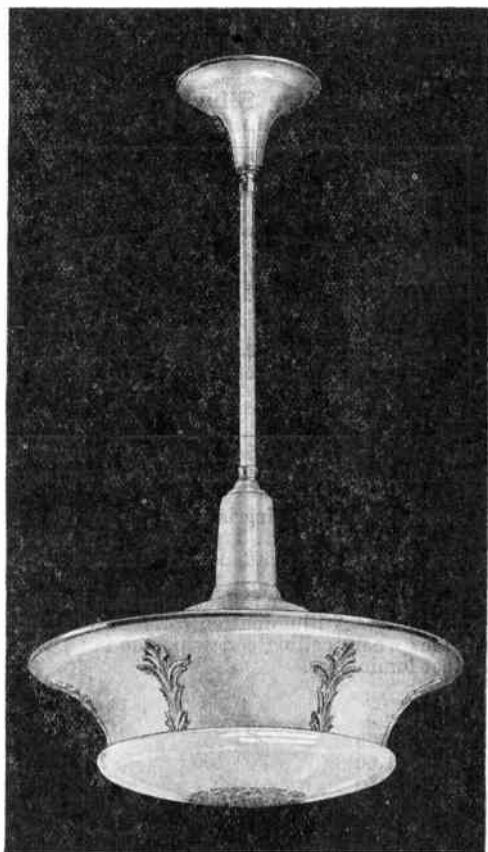
**Chain Pendant Suspension**

6150	\$15.60	6155	\$22.20	150	15	Medium	9x4	36
6200	19.50	6205	27.30	200	18	Medium	12x5	36
6300	27.72	6305	36.72	300-500	22½	Mogul	14x6	48

**Swivel Stem Pendant Suspension**

6151	\$17.40	6154	\$22.20	150	15	Medium	9x4	36
6201	21.30	6204	21.30	200	18	Medium	12x5	36
6301	29.52	6304	36.72	300-500	22½	Mogul	14x6	48

\*Prices are for plain glass only. For decorative glass, add J-317 to Cat. Nos. plus the following list: \$3.36 for 150-watt lamps, \$4.50 for 200-watt lamps, and \$5.85 for 300-500-watt lamps.



## Graybar Miller Ultra-Violet Fixtures



The Adjustable Angle Unit and Wide Spread Unit are for use in hospital solariums, gymnasiums, basketball and squash courts, swimming pools, and other places where periodic ultra-violet exposures are desired.

### Adjustable Angle Unit Transformer and Holder

Cat. No.	Each	Type Lamp	Diam. In.	Depth In.	Fitter In.
1760	\$34.00	7	6 3/4	1 1/2	Tap
1764	\$11.75	S-1	16 1/4	11	3 1/4
1766	\$10.40	S-1	14	9 3/4	3 1/4

Specify transformer and select one reflector for light distribution desired.



### Wide Spread Unit Wide Spread Reflector, Plain Transformer and Holder

1762	\$4.50	S-1	16 1/4	8 1/4	3 1/4
1760	\$34.00	7	10 1/4	3 1/4	



No. 2121

This fixture operates on two circuits. One is for direct lighting ultra-violet radiation and uses one Type S-2 Mazda Sunlight Lamp. The other circuit is for the semi-indirect lighting component and uses three 50 to 150-watt Mazda lamps.

Length, 29 1/2 inches. Diameter, 19 1/2 inches. Reflector for S-2 lamp, 12-inch distributing type.

Finished in dull or green and polished aluminum, or in bronze.

No. 2121..... each \$41.35



No. 11-A

This fixture has ball-joint so that rays can be directed to any angle. Louvres surround the lamp.

Length, 12 1/2 inches. Diameter of concentrating type reflector, 11 1/2 in.

Finished in ivory or bronze.  
No. 11-A.....each \$24.75



No. 1742

This unit will find application in factories, basketball and squash courts, gymnasiums, swimming pools, bowling alleys, and similar locations.

Length, 11 1/2 inches. Diameter of wide spread type reflector, 12 inches.

Finished in aluminum.  
No. 1742.....each \$25.00

## Graybar Miller Ultra-Violet Lamps

Lamps operate on 108-118-volt, 60-cycle a.c. (lamps for other voltages and cycles can be supplied). The Udezine tubes make the necessary electrical contact as they go together—no tools or wiring required.

No. 9

Designed with the Udezine principle providing three lamps in one. Has outlet under base for inserting automatic time switch.

Furnished complete with column, one 18 1/2-inch Udezine tube and one 15 1/2-inch tube.

Diameter of reflector, 12 inches.

Finished in ivory with black stripes or in bronze with gold.  
No. 9.....each \$33.50

No. 8

Designed with the Udezine principle providing five lamps in one. Includes outlet under base for inserting automatic time switch.

Furnished complete with two 25 1/2-inch Udezine tubes and one 12 1/2-inch tube.

Diameter of reflector, 12 inches.

Finished in ivory or in bronze.  
No. 8.....each \$31.50

No. 19

Similar in design to Sunlite No. 9. This lamp uses the Type S-1 Sunlight Lamp. It is more powerful in its ultra-violet application. Comes complete with a table model automatic time switch which operates the lamp up to a 30-minute period.

It is constructed with the Udezine principle providing several lamps in one. Casters are on the base for ease in moving from room to room.

Diameter of reflector, 16 inches.

Finished in bronze.  
No. 19.....each \$74.50

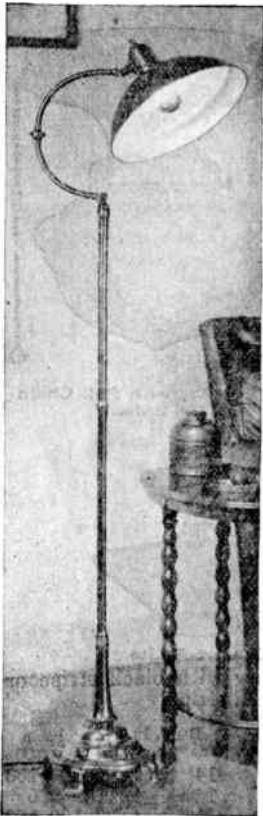
No. 29

This Sunlite is designed especially for hospital use for therapeutic purposes. It uses the Type S-1 Mazda Sunlight Lamp which is controlled by an automatic time switch which is part of each lamp. The lamp is of aluminum with rubber tired casters for ease in moving.

Height, 6 1/2 feet extended, 5 feet closed.

Diameter of reflector, 16 inches.

Finished in polished aluminum.  
No. 29.....each \$149.50



No. 9



No. 8

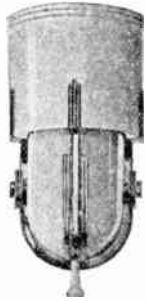


Graybar Miller Nu-Mode Fixtures

Nu-Mode Lighting Fixtures are different in both design and lighting effect, yet they are adaptable to all types of lighting requirements.

The lustre, delicacy, and refinement of these fixtures is due to the application of porcelain on metal. The unusual durability is also due to the same factor.

The units are finished in green, ivory, citrus yellow, blue, or black with trim in choice of real gold plate or chromium.



**No. 1853 Bracket**  
 Length, 5 1/4 inches. Diameter, 3 7/8 inches. Projection, 2 7/8 inches.  
 Chain pull switch. No. 6337 glass shade.  
 Bracket packed 1 to an individual container; 6 to a standard package, weight 11 pounds.  
 Shade packed 6 to a standard package, weight, 5 pounds.

No. 1853 ..... each \$4.50  
 No. 6337 ..... each 1.25

**No. 1852 Bracket**

Length, 4 3/4 inches. Diameter, 3 3/8 inches. Projection, 2 3/8 inches.  
 Chain pull switch.  
 Packed 1 to an individual container; 6 to a standard package, weight 8 pounds.  
 No. 1852 ..... each \$3.75



**No. 1851 Bracket**



Length, 4 inches. Diameter, 3 3/8 inches. Projection, 3 inches.  
 Chain pull switch.  
 Bracket packed 1 to an individual container; 6 to a package, weight 12 pounds.

No. 6189 silk shade in gold, rosewood, cream, or sand. Packed 6 to a standard package, weight 1 1/2 pounds.  
 No. 1851 ..... each \$5.50  
 No. 6189 ..... each 1.90



**No. 1811 Fixture**

Length, 3 1/4 inches. Diameter, 4 3/4 inches. Keyless or chain pull switch.  
 Fixture packed in an individual container; 6 to a package, weight 9 pounds.  
 No. 5910 glass shade. Diameter, 5 1/2 inches; 2 1/4-inch fitter. May be used on any fixture. Packed 6 to a standard package, weight 6 pounds.

	Keyless	Pull
No. 1811, with Stars (as Illustrated).....	each \$4.00	\$4.50
No. 1812, with Bars in Place of Stars.....	each 4.50	5.00
No. 1810, without Bars or Stars.....	each 3.00	3.50
No. 5910, Glass Shade.....	each 1.00	1.00

**No. 1822 Fixture**

Length, 3 1/4 inches. Diameter, 4 3/4 inches. Keyless or chain pull switch.  
 Packed 1 to an individual container; 6 to standard package, weight 10 pounds.

	Keyless	Pull
No. 1822, with Bars.....	each \$4.50	\$5.00
No. 1821, with Stars.....	each 4.00	4.50
No. 1820, Plain.....	each 3.00	3.50



**No. 1832 Fixture**

Length, 3 1/4 inches. Diameter, 4 3/4 inches. Keyless or chain pull switch.  
 Packed 1 to an individual container; 6 to standard package, weight 10 pounds.

	Keyless	Pull
No. 1832, with Bars.....	each \$4.50	\$5.00
No. 1831, with Stars.....	each 4.00	4.50
No. 1830, Plain.....	each 3.00	3.50



Graybar Special Luminaires



No. K10 Service Receptacle and Switch

The Graybar K-Type Luminaire is constructed of 5-ply, white porcelain enamel fused into a heavy armco iron base. The porcelain will neither crack, blister, nor peel off. It can be wiped with a damp cloth to restore its original whiteness and lustre.

The shells are made in one piece and are seamless, thus eliminating crevices as possible dirt collectors.

The diffusing globe (Cat. No. 2519) is made of fine opal homogeneous glass, shaped to give a pleasing appearance when used with the K-Type Holder.

The unit is made in three types—K10 for use where service receptacle and switch are desired; K20, where switch only is required; and K30 for locations where neither switch nor receptacle is necessary.

Fixture Only—No Glass  
 K10..... each \$5.00  
 K20..... each 3.20  
 K30..... each 2.60



No. K20 with Pull Chain Switch



No. X-6610



Ivoryglow

Finish, ivory.



Convert-A-Lite

Finish, ivory with black stripe or green with gold stripe.

Cat. No.	Each	Size Glass In.	Size Lamp Watts
XC-6675	\$1.50	9x4	60-75
XC-6680	2.10	10x4	100
XC-6610	3.20	12x4	150

Cat. No.	Each	Std. Pkg.	Size Lamp Watts
IG-2	\$2.80	24	75 to 150

Cat. No.	Each	DIAM., IN.		Size Lamp Watts
		Top	Bottom	
498	\$3.50	14	4	100-150
499	3.50	14	4	200
500	2.80	11	4	100-150



## Graybar Lighting Accessories



**Beam Light**

Cat. No.	White Enamel Each	Ivory Each	Pol. Chrom. Each	Socket
1088	\$1.00	\$1.00	\$1.30	Keyless
1089	1.10	1.10	1.50	Pull



**Closet Light**

Size, 4 1/2 x 2 inches.

Cat. No.	White Enamel Each	Pol. Chrom. Each	Socket
1116	\$ .80	\$1.00	Pull
1133	.60	.80	Keyless



**MC Shelcrest Beam Light**

Shelcrest Beam Light made of bakelite. Finish, Japanese bronze. Cat. No. MC.....each \$2.50



**Fixture Only, Wired With 4-Inch Fitter**

Cat. No.	White Enamel Each	Stat. Bronze Each	Pol. Chrom. Each	Socket
1111	\$ .80	\$1.00	\$1.30	Keyless
1110	1.10	1.30	1.50	Pull
<b>With 6-Inch Fitter</b>				
1084	....	\$1.30	\$1.90	Keyless
1083	....	1.50	2.10	Pull



**Fixture Only**

Fitter, 2 1/4 inches.

Chain pendant, 33 inches long.

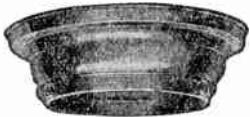
Finishes, white enamel, statuary bronze, and ivory.

Cat. No. 1055, Wired with Key Socket.....	each \$1.90
Cat. No. 1154, Wired with Pull Chain Socket.....	each 2.10



**Fixture Only With 2 1/4-Inch Fitter**

Cat. No.	White Enamel Each	Stat. Bronze Each	Pol. Chrom. Each	Socket
1126	\$ .70	\$ .70	\$ .90	Keyless
1127	1.00	1.00	1.20	Pull
<b>With 3 1/4-Inch Fitter</b>				
1128	\$ .80	\$ .90	\$ .90	Keyless
11003	1.00	1.10	1.30	Pull



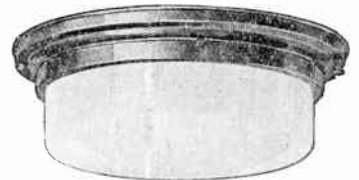
**Ceiling Band Screw Type Holder**

Wired with two sockets for emergency lighting.

Has 6-inch fitter.

Finish, statuary bronze and English bronze.

Cat. No. X-1054.....each \$3.00



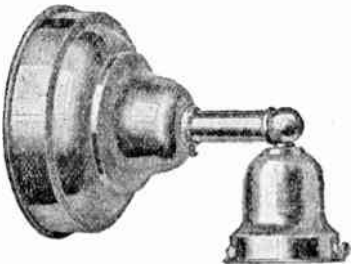
**Fixture, Less Glass**

Wired with two sockets, reflector plate and cross bar.

Cat. No. A310, 10-In. Fitter ea. \$6.50

Cat. No. A312, 12-In. Fitter ea. 7.80

Cat. No. A314, 14-In. Fitter ea. 10.10



**No. A-92 Wall Bracket**

With screw type holder and 5 1/4-inch diameter canopy. Of 22-gauge brass.

Finish, statuary bronze.

Cat. No. A-92.....each \$2.60

**Fixture Complete with White Glass**  
Wired with two sockets, reflector plate and cross bar. Standard finishes, statuary bronze and pewter.

Cat. No.	Each	Canopy In.	Fitter In.	Depth, In. Over All	Brass Gauge
A216	\$13.70	14	12	5	22
A217	11.50	12	10	4 1/4	22
A218	16.60	16	14	6 1/2	20

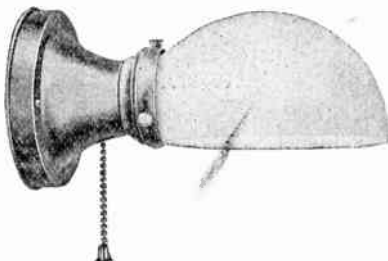
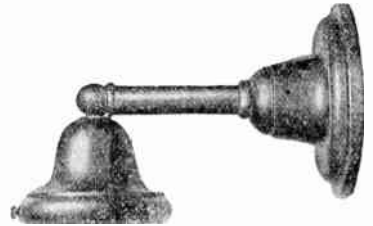
**No. X-1053 Wall Bracket, Wired**

With screw type holder. Of 22-gauge brass.

Finish, statuary bronze and English bronze.

Cat. No. X-1053, with 2 1/4 or 3 1/4-Inch Socket Cover ea. \$2.50

Cat. No. X-1053, with 4-Inch Socket Cover.....each \$2.90



**No. 1125 Bathroom Bracket**

**Fixture Only**

Wired with pull socket.

Fitter, 4 1/2 x 3 x 2 1/4 inches.

Cat. No.	White Enamel Each	Stat. Bronze Each	Pol. Chrom. Each
1125	\$1.00	\$1.00	\$1.10

**Bathroom Bracket**

Furnished with porcelain socket. Finish, polished chromium.

**Without Convenience Outlet**

Cat. No. 1075, Turn Knob Socket... \$2.70

Cat. No. 1049, Keyless Socket..... 2.50

**With Convenience Outlet**

Cat. No. 1098, Turn Knob Socket... \$3.40

Cat. No. 1048, Keyless Socket..... 3.20



**No. 1048**

Graybar Miscellaneous Glassware

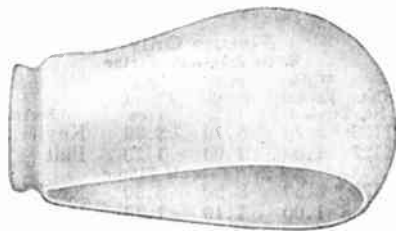


Nos. G-340 to G-342



Nos. G-346 to G-348

Cat. No.	Each	Diam Inches	Depth Inches	Fitter Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.
G-340	\$ .80	6	4 1/2	2 1/4	24	27
G-341	1.00	7	5 1/8	2 1/4	16	28
G-342	1.50	8	5 7/8	2 1/4	12	25
G-346	.80	7	2 3/4	2 1/4	36	32
G-347	1.10	7 1/2	3 5/8	2 1/4	36	40
G-348	1.20	9	3 7/8	2 1/4	24	34



No. G-446



No. I-5022

G-446	\$ .70	4	6 1/4	2 1/4	36	32
I-5022	.70	4	5 3/4	2 1/4	12	10



No. G-975 or 747



No. I-6015



No. I-5068

G-747	\$ .50	4 3/4	4 5/8	2 1/4	24	32
G-975	.80	6 1/8	5	2 1/4	27	37
I-6015	.50	4 3/8	...	2 1/4	12	10
I-5068	.80	1	...	2 1/4	48	42
I-5069	1.00	6	...	2 1/4	30	31
I-5070	1.50	7	...	2 1/4	24	38



No. C-2519



No. G-640

C-2519	\$ .90	8	6 1/2	4	12	20
G-640	1.00	7	5 1/4	2 1/4	24	35
G-641	1.50	8	5 3/4	2 1/4	16	28
G-642	1.70	9	6 3/4	3 1/4	12	25

Graybar Inland Small Ball Globes



Opal



Ruby Exit

Cat. No.	Each	Description	Size Inches	Std. Pkg.	Wt. Lbs.
2412	\$ .60	Snow White	3 1/4 x 6	27	45
2412	.60	Crystal, Roughed Inside	3 1/4 x 6	27	45
2412	1.60	Ruby	3 1/4 x 6	8	20
2416	.80	Snow White	3 1/4 x 7	12	38
2416	.80	Crystal, Roughed Inside	3 1/4 x 7	12	38
2416	2.00	Ruby	3 1/4 x 7	12	20
2420	.90	Snow White	3 1/4 x 8	8	27
2420	.90	Crystal, Roughed Inside	3 1/4 x 8	8	27
2420	2.50	Ruby	3 1/4 x 8	8	27
2422	.90	Snow White	4 x 8	8	27
2422	.90	Crystal, Roughed Inside	4 x 8	8	27
2422	2.50	Ruby	4 x 8	8	27

Ruby Exit Ball Globes

Cat. No.	Each	Description	Dia. In.	Dph. In.	Fitter In.
608/2057	\$ 2.80	6-Inch Ruby Ball, Exit	1 Side 6	6	3 1/4
608/2058	3.10	6-Inch Ruby Ball, Exit	2 Sides 6	6	3 1/4
608/2057	3.40	7-Inch Ruby Ball, Exit	1 Side 7	7	3 1/4
608/2068	3.90	7-Inch Ruby Ball, Exit	2 Sides 7	7	3 1/4
608/2057	4.10	8-Inch Ruby Ball, Exit	1 Side 8	8	4
608/2058	4.60	8-Inch Ruby Ball, Exit	2 Sides 8	8	4



No. K-841 R-1 Exit For Side Bracket 3-Inch Letters, Red



No. K-842 R-1 3-Inch Letters, Red

Cat. No.	Exit	Depreciation No.	Each	Description	Dia. In.	Depth In.	Fitter In.
K841	Exit	R-1	\$ 2.10	Royal Copper, Roughed Inside	5 1/4	4 1/2	3 1/4
K841	Exit	G-2	1.90	Green, Roughed Inside	5 1/4	4 1/2	3 1/4
K841	Exit	C-3	1.90	Crystal, Roughed Inside	5 1/4	4 1/2	3 1/4
K841	Stairs	R-1	2.10	Royal Copper, Roughed Inside	5 1/4	4 1/2	3 1/4
K841	Men	N-4	1.90	Nico	5 1/4	4 1/2	3 1/4
K841	Women	N-5	1.90	Nico	5 1/4	4 1/2	3 1/4
K842	Exit	R-1	2.90	Royal Copper, Roughed Inside	6	6	3 1/4
K842	Exit	G-2	2.65	Green, Roughed Inside	6	6	3 1/4

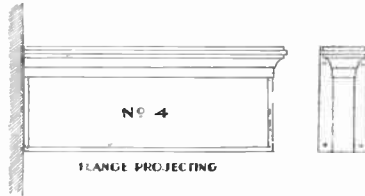
## Perlite Drawn Bronze Directional Signs



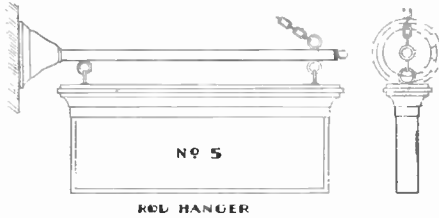
Frame Sign



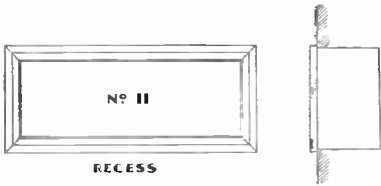
FLAT WALL



FLANGE PROJECTING



ROD HANGER



RECESS

### Basic Styles for All Combinations

Designate by number in connection with inquiry or order for basic styles.

Almost any size can be furnished in this type of sign, to which a wide variety of drawn bronze moulding may be applied.

A variety of glass faces can also be furnished, the most popular being black flashed glass with white incised letters or white opal glass with embossed white letters and sprayed background. All types of colored glasses can be furnished. Also made with plate glass faces, edge-light type.

Can be lettered with any inscription desired.

### Single Face

Height Inches	LENGTH OF GLASS, INCHES					
	14 Each	16 Each	18 Each	20 Each	22 Each	24 Each
4	\$31.20	\$34.20	\$37.20	\$38.70	\$40.20	\$41.70
6	33.60	36.70	40.20	41.85	43.50	45.15
8	34.80	39.00	43.20	45.30	47.40	49.50

### Double Face

4	\$34.80	\$37.70	\$41.40	\$43.05	\$44.70	\$46.35
6	37.20	41.40	45.60	47.70	49.80	51.90
8	40.80	45.40	50.40	52.80	55.20	57.60

If rods or chains are required for hanging add to above as follows:

Bronze Chain.....	per foot	\$ .45
Bronze Ceiling Canopies.....	each	1.50
Bronze Rod, Complete, for 14, 18 or 26-Inch Signs.....		8.75

For hanging type sign from ceiling, chains and ceiling canopies will be furnished in place of rod hanger for No. 5.

## Perlite Exit Signs

Constructed of galvanized steel in oxidized bronze lacquer finish.

Faces are of opal glass with white letters on a red or green stenciled background or red or green stenciled letters on a white background.

All signs are equipped with socket holders. Additional charge for sockets, 50 cents each.

### Style E-2

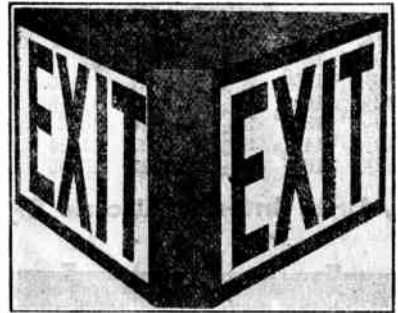
Flat Wall Type—Open Back



Size Letters.....	inches	5	6	8
Size Glass.....	inches	6x12	7 $\frac{3}{4}$ x12	9 $\frac{1}{2}$ x13
Steel.....	each	\$3.00	\$3.50	\$4.25
Copper.....	each	4.00	4.75	5.75

### Style E-T

Double Face Triangular Type—Open Back



Size Letters.....	inches	5	6	8
Size Glass.....	inches	6x12	7 $\frac{3}{4}$ x12	9 $\frac{1}{2}$ x13
Steel.....	each	\$7.50	\$8.50	\$10.50
Copper.....	each	10.00	12.00	14.50

### Style E-R

Flush Wall Type—Open Back



Size Letters.....	inches	5	6	8
Size Glass.....	inches	6x12	7 $\frac{3}{4}$ x12	9 $\frac{1}{2}$ x13
Steel.....	each	\$4.00	\$4.50	\$5.25
Copper.....	each	6.25	7.00	8.00

### Flashed Glass Faces

Ruby or green in standard sizes at extra charge as follows:

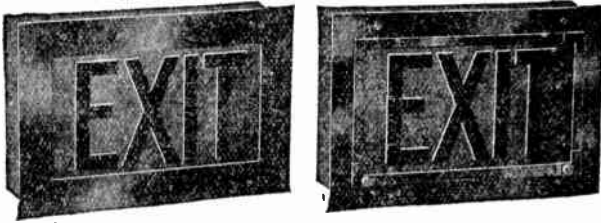
5-Inch Letters.....	each face	\$3.50
6-Inch Letters.....	each face	4.00
8-Inch Letters.....	each face	5.00

### Special Inscriptions

Words as men, women, check room, etc. will be supplied to fit these signs at an extra charge of \$5.00 per face.



Day-Brite Exit Signs



No. 2800 Series with Rigid Frames Holding Glass

No. 2900 Series with Hinged Frames for Glass

Boxes on flush type signs, 14-gauge steel; knockouts for 1/2-inch conduit on all 4 sides. Boxes on surface type, 20-gauge steel or bronze; outlet for connection in back.

Covers, 16-gauge metal; hinged frames on 2900 Series of 18-gauge rolled moulding. Each sign is complete with 2 porcelain sockets to attach to collapsible wiring trough.

Ruby glass with white lettered effect is standard; other glass combinations, extra. Finish: steel, any standard spray; bronze, any standard plate.

Size Letters Inches	OVERALL TRIM INCHES			FLUSH TYPE BOX SIZE INCHES			Steel		Bronze	
	Ht.	Wdth.	Dpth.	Ht.	Wdth.	Dpth.	Cat. No.	Each	Cat. No.	Each
3, 4 or 5	9 1/4	13 1/4	3 1/2	8	12	3 1/2	2800	\$10.00	2810	\$12.50
6	10 1/4	14 1/4	3 1/2	8 3/4	13	3 1/2	2801	11.00	2811	13.50
8	12 1/4	16 1/4	3 1/2	10 3/4	15	3 1/2	2802	13.00	2812	16.00
3, 4 or 5	9 1/4	13 1/4	3 1/2	8	12	3 1/2	2900	12.00	2910	15.25
6	10 1/4	14 1/4	3 1/2	8 3/4	13	3 1/2	2901	13.00	2911	16.00
8	12 1/4	16 1/4	3 1/2	10 3/4	15	3 1/2	2902	15.25	2912	19.00

Size Letters Inches	OVERALL SIZE INCHES			Steel		Bronze	
	Ht.	Wdth.	Dpth.	Cat. No.	Each	Cat. No.	Each
3, 4 or 5	9 1/4	13 1/4	3 1/2	2820	\$8.75	2830	\$13.00
6	10 1/4	14 1/4	3 1/2	2821	9.25	2831	14.00
8	12 1/4	16 1/4	3 1/2	2822	11.00	2832	16.25
3, 4 or 5	9 1/4	13 1/4	3 1/2	2920	10.50	2930	15.75
6	10 1/4	14 1/4	3 1/2	2921	11.25	2931	16.75
8	12 1/4	16 1/4	3 1/2	2922	13.00	2932	19.00

Day-Brite Interior Electric Signs



Thin model sign takes clear glass only; letters are sand blasted on reverse side; light is diffused through top edge of glass to give green letter effect. Wide model is for opaque glass with raised letters; background matches color of frame; when lighted, letters are illuminated. Various style mountings in single and double face.

Prices and further information upon application.

Day-Brite Pedestal Signs



Bases on pedestal supports drilled for screwing direct to counter. Equipped with toggle switch.

Wire leads through base, unless otherwise specified.

Height of standard, exclusive of sign, 13 1/2 inches.

Type FR, illustrated, has cast bronze base and standard. (Diam. of base, 6 in.)

Type FS has square standard and base; 4, 5 or 6-in. bases can be furnished.

Prices and further information upon application.

Day-Brite Show Case Reflectors Unwired

For T-10 Tubular Lamps

For One Lamp



Drawn brass with porcelain socket. Length, 9 in. Standard package, 12. Height 1 1/8 inches; width 2 3/8 inches.

Price, No. 90, Statuary Bronze Plated.....each \$2.50  
Price, No. 91, Aluminum Spray Finish.....each 2.00

For Two Lamps



No. 190 is made of brass, No. 191 of steel. Furnished with twin porcelain socket. Length, 18 in. Standard package, 6. Price, No. 190, Statuary Bronze Plated.....each \$5.25  
Price, No. 191, Aluminum Spray Finish.....each 4.20

NOTE.—With Nos. 90 and 190, use 3/8-in. brass tubing. With Nos. 91 and 191, use 5/16-in. flexible steel conduit or 1/2-in. brass tubing.

For Intermediate Base Lamps

For One T-6 1/2 Tubular Lamp

Drawn brass with porcelain socket. Length, 8 1/2 in.; width, 1 3/4 in.; height, 1 3/8 in. Standard package, 12. Price, No. 80, Statuary Bronze Plated.....each \$2.50  
Price, No. 81, Aluminum Spray Finish.....each 2.00

For Two T-6 1/2 Tubular Lamps

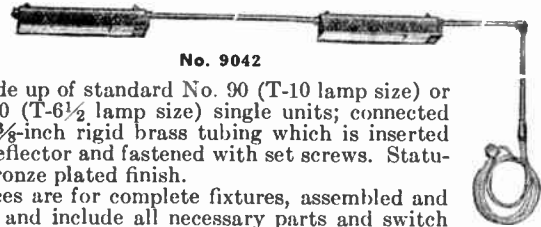
No. 180 is made of brass, No. 181 of steel. Furnished with 2 single porcelain sockets. Length, 18 in.; width, 1 3/4 in.; height, 1 3/8 in. Standard package, 6. Price, No. 180, Statuary Bronze Plated.....each \$5.10  
Price, No. 181, Aluminum Spray Finish.....each 4.20

NOTE.—With Nos. 80 and 180, use 3/8-in. brass tubing. With Nos. 81 and 181, use 5/16-in. flexible steel conduit or 1/2-in. brass tubing.

Hanging clips and screws are included in above prices. SPECIAL FINISHES.—For plated finishes other than standard, 20 per cent additional; spray finishes, 10 per cent.

Day-Brite Assembled Show Case Fixtures With Rigid Sockets

For T-10 Standard Base Tubular Lamp  
For T-6 1/2 Intermediate Base Tubular Lamp



No. 9042

Made up of standard No. 90 (T-10 lamp size) or No. 80 (T-6 1/2 lamp size) single units; connected with 3/8-inch rigid brass tubing which is inserted into reflector and fastened with set screws. Statuary bronze plated finish.

Prices are for complete fixtures, assembled and wired and include all necessary parts and switch but no lamps. Reflectors are spaced evenly to give best results. Prices figured to nearest foot of case.

When ordering, give dimensions; inside length, inside width and inside height; specify whether all glass, wood or metal case. If case has oval ends, send template. To specify end to have connection, face back of case.

For cases longer than listed, add 50 cents for each foot of case; each extra reflector, \$2.75. Finish other than standard, 20 per cent extra. Vertical tubing over 42 inches, 30 cents per foot. Standard package, 1 set.

Unit for T-6 1/2: height, 1 1/2 inches; width, 1 3/4 inches; length, 8 1/2 inches. Unit for T-10: height, 2 1/8 inches; width, 2 3/8 inches; length, 9 inches.

Case Size Feet	No. of Lights	For T-6 1/2 Lamp		For T-10 Lamp	
		Cat. No.	Each	Cat. No.	Each
4	2	8042	\$11.00	9042	\$11.00
5	2	8052	11.50	9052	11.50
5	3	8053	14.25	9053	14.25
6	2	8062	12.00	9062	12.00
6	3	8063	14.75	9063	14.75
6	4	8064	17.50	9064	17.50
8	3	8083	15.75	9083	15.75
8	4	8084	18.50	9084	18.50
10	3	8003	16.75	9003	16.75
10	4	8004	19.50	9004	19.50
10	5	8005	22.25	9005	22.25

## Day-Brite Assembled Wall Case Fixtures With Rigid Sockets

For T-10 Tubular Lamp—Standard Base  
For T-6½ Tubular Lamp—Intermediate Base



No. 9142

Especially designed for small wall display cases where reflector can be concealed. The assembly consists of the standard No. 91 unit (T-10 lamp size) or No. 81 (T-6½ lamp size) connected with ¾-inch steel flexible conduit.

Standard finish, aluminum spray; other finishes, extra. Prices are for complete fixtures, wired and assembled, ready to install with all fittings except switch and lamps.

Three-foot lead furnished with each fixture for electrical connection; longer lengths, 25 cents per foot extra.

To specify end to have electrical connection, face front of case. Reflectors are spaced evenly.

For assemblies larger than listed, add 25 cents per foot for each additional foot of case; for each additional reflector, \$2.25. Standard package, 1 set.

Unit for T-6½ lamp: height, 1½ inches; width, 1¾ inches; length, 8½ inches. Unit for T-10 lamp: height, 2½ inches; width, 2¾ inches; length, 9 inches.

Size Case	No. of Lights	For T-6½ Lamp		For T-10 Lamp	
		Cat. No.	Each	Cat. No.	Each
4	2	8142	\$6.50	9142	\$6.50
5	2	8152	6.75	9152	6.75
5	3	8153	9.00	9153	9.00
6	2	8162	7.00	9162	7.00
6	3	8163	9.25	9163	9.25
6	4	8164	11.50	9164	11.50
8	3	8183	9.75	9183	9.75
8	4	8184	12.00	9184	12.00
10	3	8103	10.25	9103	10.25
10	4	8104	12.50	9104	12.50
10	5	8105	14.75	9105	14.75

## Day-Brite Continuous Show Case Fixtures



No. 1912

Can be used in any standard floor case. With porcelain enameled steel reflecting surface and porcelain sockets. Furnished with elbow connector at one end and 8-foot lead wire. Specify end to have connection facing back of case. Prices do not include tubing, fittings to electrical connections or lamps.

### For T-10 Standard Base Tubular Lamps

Twin sockets on approximate 24-inch centers. Single sockets on approximate 18-inch centers. Height, 1¾ inches; width opening, 2¾ inches; length, continuous.

Cat. No.	Description	Per Foot
1912	Drawn Steel, Any Spray Finish.....	\$3.00
1900	Drawn Steel, Statuary Bronze, Gun Metal or Nickel-Plated Finish.....	3.30
1911	Drawn Brass, Natural, Bank or Statuary Bronze, Gun Metal or Nickel-Plated Finish...	3.80

### For T-6½ Intermediate Base Tubular Lamps

Wired with single porcelain sockets on approximate 18-inch centers. Height, 1½ inches; width, 1¾ inches; length, continuous.

Cat. No.	Description	Per Foot
1802	Drawn Steel, Any Standard Spray Finish.....	\$2.50
1800	Drawn Steel, Statuary Bronze, Gun Metal or Nickel-Plated Finish.....	3.00
1801	Drawn Brass, Natural, Bank or Statuary Bronze, Gun Metal or Nickel-Plated Finish...	3.50

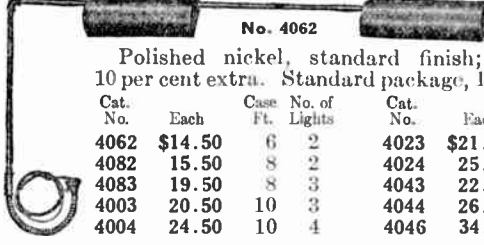
### End Fittings

Complete Set for Front Feed.....each \$2.25  
Complete Set for Back Feed.....each 2.90  
Specify type of case so that proper mounting clip will be provided.

## Day-Brite Assembled Refrigerator Fixtures For 6-Inch T-10 Tubular Lamps

For exterior lighting of refrigerator cases. Consists of No. 40 reflectors, assembled and wired; with switch, no lamps. Face back of case to state end to have connection.

Assemblies listed are for fixtures to be mounted on wood or metal frame cases; for glass case assemblies add 50 cents to each reflector in complete set.



No. 4062

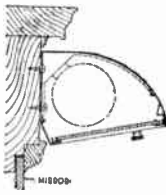
Polished nickel, standard finish; chromium, 10 per cent extra. Standard package, 1 set.

Cat. No.	Each	Case Ft.	No. of Lights	Cat. No.	Each	Case Ft.	No. of Lights
4062	\$14.50	6	2	4023	\$21.50	12	3
4082	15.50	8	2	4024	25.50	12	4
4083	19.50	8	3	4043	22.50	14	3
4003	20.50	10	3	4044	26.50	14	4
4004	24.50	10	4	4046	34.50	14	6

## Day-Brite Fitting Room Reflectors Standard 18-Inch Units



This fixture is made in standard 18-inch sections. Has removable frame with diffusing glass and levioier pull chain switch at right hand end facing fixture.



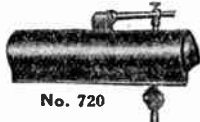
For two standard lamps to 50 watts each. Wired complete, ready for installation.

No. 2970 is steel, any standard spray finish; No. 2971 is brass, any standard plate finish.

Height, 4 inches; width, 5½ inches. Standard package, 6.

No. 2970.....each \$13.50  
No. 2971.....each 18.50

## Day-Brite Picture Reflectors



No. 720

These reflectors are adjustable in horizontal and vertical positions, and also at the fitting.

Furnished with 9 feet of silk cord and plug. Standard package, 12 assorted.

### For T-10 Tubular Lamps

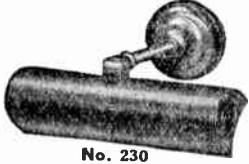
Length Reflector Inches	No. of Lights	No. of Brackets	STEEL GOLD SPRAY FINISH		BRASS BRUSH BRASS FINISH	
			Cat. No.	Each	Cat. No.	Each
9	1	1	720	\$7.00	730	\$9.00
15	2	1	721	9.00	731	11.25
24	3	1	722	12.50	732	15.75
30	4	2	723	16.25	733	21.50

### For 15-50-Watt Type A Lamps

10	1	1	724	10.25	734	\$12.50
15	2	1	725	11.75	735	15.00

## Day-Brite Bracket Reflectors

### For 25-Watt T-10 Tubular Lamps



No. 230

The Day-Brite line of bracket lighting embodies many styles and designs. The units listed are practical for most ordinary requirements. Equipped with porcelain enameled reflecting surface, porcelain keyless sockets, and wired complete.

Standard package, 3.

FINISHES.—Steel, any standard spray; brass—bank, statuary bronze or brush brass.

Length Reflector Inches	Length Arm Inches	Style Socket	STEEL		BRASS	
			Cat. No.	Price Each	Cat. No.	Price Each
9	10	Single	245	\$8.25	230	\$10.00
15	10	Twin	244	9.00	229	12.00



**Day-Brite Cashier Cage Reflectors**  
Standard 18-Inch Units

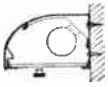


No. 1012

Equipped with removable frame and Silverite diffusing glass. Reflecting surface of steel is porcelain enameled.

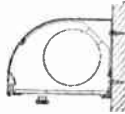
Twin porcelain socket and levolver switch on right bottom end; outlet in back center. Wired; ready to install. Finishes: steel, any standard spray; brass—brush brass, natural, bank or statuary bronze.

Standard package, 6 assorted.  
For 25-Watt T-10 Tubular Lamps For 15-25-Watt Type A Lamps



No. 1014

Height, 2 1/4 inches; width, 3 1/2 inches; length, 18 inches.  
No. 1014, Steel, each \$12.00  
No. 1024, Brass, each 15.50

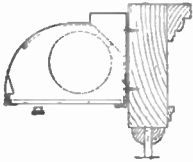


No. 1012

Height, 3 1/4 inches; width, 4 1/4 inches; length, 18 inches.  
No. 1012, Steel, each \$12.50  
No. 1022, Brass, each 17.00

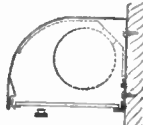
**For 15-60-Watt Type A Lamps**

Height, 4 inches; width, 5 inches; length, 18 inches.



No. 1011

No. 1011, Steel, each \$13.25  
No. 1021, Brass, each 18.25

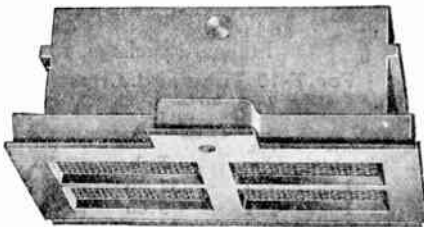


No. 1010

No. 1010, Steel, each \$13.00  
No. 1020, Brass, each 18.00

Also in continuous lengths; prices on application.

**No. S-5100 Day-Brite Pedestrian Tunnel Lights**



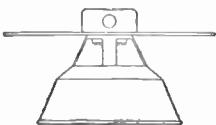
Consists of cast aluminum body and frame; steel porcelain enameled reflector, twin porcelain sockets for 2 lamps to 60 watts. Cover is hinged and equipped with either 16-gauge 1/4-inch galvanized iron wire screen or 1/2-inch wire diffusing glass.

Overall size: length, 16 1/4 inches; width, 9 11/16 inches; depth, 7 inches.

Standard package, 1.

No. S-5100, with Flush Yale Lock, each \$36.00  
No. S-5100, with Screw Fastening Instead of Yale Lock, each 33.00

**No. 5025 Day-Brite Library Stack Light And Stock Bin Reflectors**



White porcelain enameled steel with 1 3/8-inch porcelain top shade. For standard 60-watt lamp.

Height without outlet box, 6 inches; diameter of bowl, 9 1/4 inches.

No. 5025, each \$4.00

**Plain Cone Glass Shades**

Depth, 5 inches.

Cat. No.	Diam. In.	Fitter In.	Price per Doz.
170	10	2 1/4	\$12.00
64	7	2 1/4	7.50



**No. 0697 Plain Emeralite Half Shades**



Pure white opal glass, plated outside with a rich emerald green. For 16 c. p. lamps. Twelve dozen in a case. Weight, 165 pounds.

No.	Fitter In.	Lgth. In.	Width In.	Price per Doz.
0697	2 1/4	6	4 1/2	\$14.40

**Emeralite Ribbed Glass Half Shades**

No. 0713 is 5 1/2 inches long, 4 inches wide, 2 1/4 inches fitter.

Packed 12 dozen in a case.

Weight, 150 pounds.



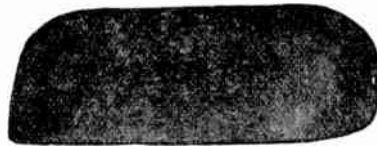
Price, No. 0713, dozen \$14.40

**No. ES 400 Esrobert Greenalite Shades**



Price, No. ES 400, each \$3.00

**No. 4378 Emeralite Shades**



For use only with old type Emeralite desk lights.

Length, 8 1/2 inches.

Price, No. 4378, each \$3.00

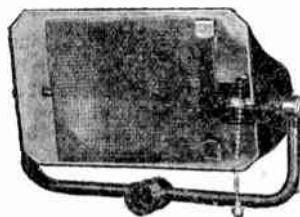
**No. 8734 Emeralite Shades**



For new type Emeralites.

Price, No. 8734, each \$3.00

**No. MG-303 Esrobert Day-Light Screens for Greenalite Lamps**



The day-light screen is an added feature of Greenalite. A day-light screen of special quality and special design is furnished to provide a natural daylight effect. Screen provides even distribution of light.

All Greenalite lamps are furnished with day-light screen without extra charge.

For best results, a standard 50-watt inside frosted bulb should be used.

Price, No. MG-303 (Screen Only), each \$1.50  
Price, No. ES 399 (Screen with Holder), each 2.50



## Hubbell Metal Reflectors

For brass reflectors in polished nickel or in statuary bronze finish, add 50 per cent to price. All other special finishes, prices upon application.

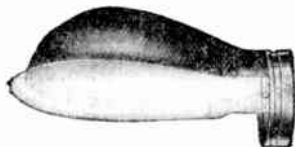
White interior furnished without extra charge. Aluminum or steel reflectors cannot be furnished in a plated finish.

Regularly fitted with holders for brass shell sockets.

If desired for weatherproof sockets, place the letter P after the catalogue number and add \$12.00 per 100 to list price.

The Nos. 6151 and 6152 Half Reflectors cannot be supplied with P holder.

### Half Reflectors With Adjustable Holder



Carton, 10. Standard package, 50.

Cat. No.	Per 100	Metal	Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
6151	\$30.66	Steel	Green and White.....	15	10
6152	67.68	Brass	Brush Brass and Frosted.....	15	11
5429	38.00	Steel	Green and White.....	25-40-60	13
5532	60.00	Brass	Brush Brass and Frosted.....	25-40-60	12
6789	43.22	Steel	Lacco Brass and Frosted.....	25-40-60	14

### Parabola Reflectors With Holder at Top—Size 6½ Inches



These reflectors are furnished with direct threading neck rather than contractile collars (No. D1675) for fastening the reflector to brass shell sockets. This is done to permit the use of these particular reflectors on brass shell sockets equipped with a combination thread and bead shade holder fastening. The reflectors furnished with contractile collars cannot be used with combination thread and bead sockets.

Carton, 6. Standard package, 30.

Cat. No.	Per 100	Metal	Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
6094	\$65.14	Steel	Green and Frosted..	25-40-60	20
6548	111.10	Brass	Brush Brass and Frosted.....	25-40-60	20
6549	76.56	Alum.	Green and Frosted..	25-40-60	18

### Parabola Reflectors With Adjustable Holder—Size 6½ Inches



Carton, 10. Standard package, 50.

Cat. No.	Per 100	Metal	Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
5564	\$64.64	Steel	Green and Frosted...	25-40-60	30
5571	110.10	Brass	Brush Brass and Frosted.....	25-40-60	30
5461	77.26	Alum.	Green and Frosted...	25-40-60	25
6788	71.00	Steel	Lacco Brass and Frosted.....	25-40-60	30

## Hubbell Metal Reflectors

### Parabola Reflectors

With Holder at 30° Angle—Size 6½ Inches



Carton, 6. Standard package, 30.

Cat. No.	Per 100	Metal	Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
*6550	\$67.02	Steel	Green and Frosted...	25-40-60	15
*6551	111.10	Brass	Brush Brass and Frosted.....	25-40-60	15
*6552	76.76	Alum.	Green and Frosted...	25-40-60	12

### Flat Reflectors

For Brass Shell Sockets



Carton, 10. Standard package, 100.

Cat. No.	Per 100	Reflector In.	Metal	†Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
*5431	\$31.00	8	Tin	Green, White...	15-25-40	35
*5432	40.80	10	Tin	Green, White...	25-40-60	45
*5433	48.08	12	Tin	Green, White...	25-40-60-100	55

For Weatherproof Sockets



Carton, 10. Standard package, 100.

Cat. No.	Per 100	Reflector In.	Metal	†Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
6751	\$42.02	8	Tin	Green, White...	15-25-40	35
6752	50.40	10	Tin	Green, White...	25-40-60	45
6753	57.78	12	Tin	Green, White...	25-40-60-100	55

### Cone Reflectors

For Brass Shell Sockets



Carton, 10. Standard package, 100.

Cat. No.	Per 100	Reflector In.	Metal	†Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
*5440	\$32.42	8	Tin	Green, White...	15-25-40	42
*5441	44.60	10	Tin	Green, White...	25-40-60	60
*5442	60.00	12	Tin	Green, White...	40-60-100	80

For Weatherproof Sockets



Carton, 10. Standard package, 100.

Cat. No.	Per 100	Reflector In.	Metal	†Finish	Size Lamp Watts	Wt., Lbs. Std. Pkg.
6760	\$45.92	8	Tin	Green, White...	15-25-40	60
6761	64.60	10	Tin	Green, White...	25-40-60	90
6762	77.16	12	Tin	Green, White...	40-60-100	110

\*Furnished with direct threading neck rather than contractile collars for fastening the reflector to brass shell sockets. This is done to permit the use of these particular reflectors on brass shell sockets equipped with a combination thread and bead shade holder fastening. The reflectors furnished with contractile collars cannot be used with combination thread and bead sockets.

†Can be furnished frosted aluminum finish inside, instead of white, at same price.

**No. 8734<sup>1</sup>/<sub>2</sub> Emeralite Portable Lamps**



This is a popular pattern for flat top desks. It saves space by having inkwell in the base.

Height to top of shade, 18 inches.

Size of base, 7x7<sup>1</sup>/<sub>2</sub> inches.

**No. 8734<sup>1</sup>/<sub>2</sub>E**

With inkwell in base.

Brushed Brass.....each \$15.00  
Statuary Bronze.....each 16.00

**No. 8734<sup>1</sup>/<sub>2</sub>ES**

With Sengbusch inkwell.

Brushed Brass.....each \$18.50  
Statuary Bronze.....each 19.50

**No. 8734K Emeralite Portable Lamps**



For flat top desks.

Base is 8 inches in diameter. Height to top of shade, 18 inches; shade is adjustable.

Finish, brush brass with black relief or statuary bronze.

Price, No. 8734K, Brush Brass Finish.....each \$12.00  
Price, No. 8734K, Bronze Finish.....each 13.00

**No. 8734B Emeralite Portable Lamps**

Square pattern, 7-inch base, for flat top desk or table.

Height to top of shade, 18 inches. Illumination area 48 inches wide by 30 inches in front of base.

With white porcelain lined green glass shade and fitted with Daylight screen.

Furnished complete with shade, pull socket, plug and six-foot cord.

Finish is brushed brass, black relief.

Price, No. 8734B....each \$12.00



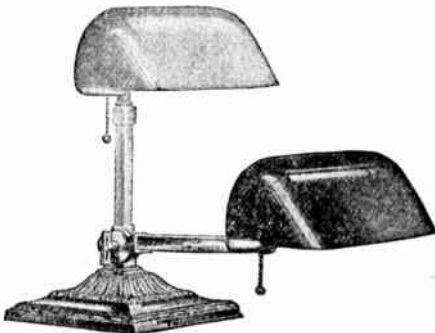
**No. 8734G Emeralite Portable Lamps**

With adjustable arm. Size of base, 7 inches square.

The Emeralite shade is made of rich emerald green glass, white porcelain lined. Fitted with Daylight screen.

Furnished complete with shade, pull socket, plug and 6 feet of cord.

Price, No. 8734G, Brushed Brass with Black Relief. ea. \$12.00



**No. 0763/740 Emeralite Lamps**



The practical base is made with pencil groove and equipped with Wahl pen.

Furnished complete with the double-duty shade and screen, and with base switch.

Standard finish, statuary bronze.

**With Emeralite Brocade Shade**

No. 0763/740/9612 \$29.00

**With Brown Brocade Shade**

No. 0763/740/9617 \$31.50

**No. 0764/740 Emeralite Lamps**



This is an ideal pen-set fixture. The large heavy base holds two pen sets and contains special groove for holding pencil.

Furnished in statuary bronze complete with shade and two Wahl pen-sets.

**With Green Brocade Shade**

No. 0764/740/1435.....each \$33.50

**With Brown Brocade Shade**

No. 0764/740/1465.....each \$34.50

**With Brown Classic Border Shade**

No. 0764/740/1547.....each \$35.50

**With Albinor Opaque Shade**

No. 0764/740/1609.....each \$33.50

**With Rhodolite Opaque Shade**

No. 0764/740/1563.....each \$36.00

**No. 9612B Emeralite Lamps**



Equipped with the standard double-duty Emeralite shade, which has two lights and gives twice the reflection. Has round cornered screen, giving twice the Daylite area without any glare.

Furnished with base switch.

Length of shade, 12 inches.

No. 9612B, Statuary Bronze, Green Brocade Shade.....each \$19.00

No. 9612B, Brass and Black, Green Brocade Shade.....each 18.00

No. 9613B, Statuary Bronze, Plain Green Shade. each 17.50

No. 9613B, Brass and Black, Plain Green Shade. each 16.50

No. 9617B, Statuary Bronze, Brown Brocade Shade.....each 21.50

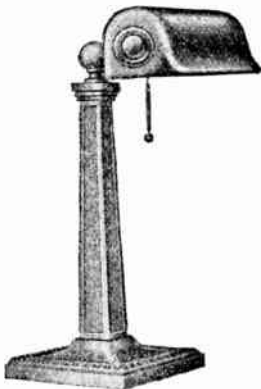
No. 9703B, Statuary Bronze, Albinor Opaque Shade.....each 19.00



## No. 3230 Faries Verdelite Portables

With Adjustable and Detachable Green Glass Shade

Fancy solid brass portable. For flat top desk or table. Height, 15 inches to center of shade. For 25 to 60-watt lamp. Wired with nine feet of silk cord, pull chain socket and plug. Standard package, 6.



Cat. No.	Description	Price Each
3230	Brushed Brass with Black Relief . . .	\$12.00
3230	Statuary Bronze, Green Relief . . .	13.00

## No. 8734AM Emeraldite Machine Lamps



For adding, posting and calculating machines supported by bracket which clamps leg of 1-inch tubular or U section stands.

The light can be adjusted in such a manner as to eliminate the glare reflected from keyboard and will also illuminate keys, platen, and shelf of any machine of the type illustrated.

Equipped with rich, emerald green glass shade, white porcelain-lined.

Daylight attachment is recommended for all machine lighting.

This lamp has vertical and horizontal adjustments.

Finish: Black enamel.

The No. 8734AM is furnished complete with bracket and 9-foot cord.

Price, No. 8734AM, Complete as Described . . . each \$13.00

## No. ES 467 Greenalite Portable Lamps

With Daylight Screen

A useful lamp for flat-top desks or tables. Equipped with one Sengbusch inkwell.

Has a Greenalite glass shade, 10-foot cord, approved socket, and 2-piece plug.

Base is 8x7 1/8 inches and is felted.

Maximum height, 17 1/4 inches.

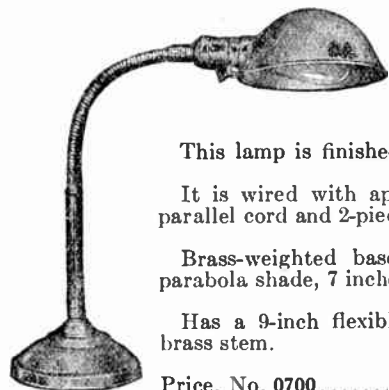
Finish, antique bronze.

Shipping weight, 15 pounds.

No. ES 467. . . . . each \$16.00



## No. 0700 Mefcolite Portable Lamps



This lamp is finished in old brass.

It is wired with approved push socket, parallel cord and 2-piece plug.

Brass-weighted base, 5 1/2 inches; brass parabola shade, 7 inches.

Has a 9-inch flexible arm and a 6-inch brass stem.

Price, No. 0700 . . . . . each \$4.50

## No. 493 Esrobert Greenalite Portable Lamps

BASE.—Special clamp for adding machine stands.

SHADE.—Green glass. 8 5/8 x 5 1/4 x 3 1/4 inches.

WIRING.—Pull-chain socket, 10 feet new code parallel mercerized cord, 2-piece plug.

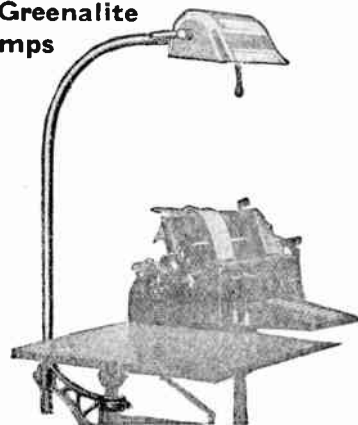
MAXIMUM HEIGHT.—35 1/2 inches.

MAXIMUM EXTENSION.—17 1/2 inches.

FINISH.—Statuary bronze.

WEIGHT.—Packed, 6 lbs.

Price, No. 493 Each. . \$12.00



## No. 0714 Mefcolite Portable Lamps



This lamp has a carefully casted base of iron; full felted.

Has a selected flexible arm and a 7-inch parabola shade.

Wired with approved push socket, parallel cord and 2-piece plug.

Flexible arm, 12 inches.

Finished in statuary bronze.

Price, No. 0714. . . . . each \$2.50

## No. 8734TW Emeraldite Portable Lamps



A most efficient and practical fixture for stenographer's and flat-top desks. The base is covered with felt and held securely in place by means of special adjustable clamp at rear, clamping against underside of desk top. The arm and shade can be adjusted to any angle; and arm has extension adjustment to accommodate various widths of desks. Base, 4 inches square. Arm does not interfere with opening and closing of desk.

Price, No. 8734TW . . . . . each \$14.00



**Thermolite Heat and Light Applicators**



**No. T0750 Hand Applicator**

In the Thermolite, light and heat are generated in a reflector so constructed that these soothing agents when applied to the aching parts penetrate the actual tissue, relaxing the congestion and relieving the pain.

The Thermolite is superior to hot water bags, poultices, and other surface heating appliances on account of its penetrative power and because it is many times more convenient.

**No. T0750 Hand Applicator**

The inside hand polished reflector, 9½ inches in diameter, is separated from outer shell by dead air space serving to insulate metal parts against heat.

Furnished complete with 120-volt 200-watt bulb, 9 feet of cord and plug.

Finish, crystalized black and nickel.  
No. T0750.....each \$7.50

**No. T0850 Table Model**

This table model comprises the No. 0750 Thermolite complete with full nickel finished flexible arm and stand. Outside reflector crystallized black.

Made with heavy felted base, permitting applicator to be adjusted to any angle.

No. T0850.....each \$10.00

**No. T0645 Folding Stand**

This stand is for use with No. 0750 applicator. It folds into a small package 20 inches long weighing 34 ounces, making it convenient for travel.

The hinged arm and ball jointed clamp permit adjustment of reflector in any position. Telescoping stem is adjustable from 28 to 68 inches.

Finish, polished nickel.  
No. T0645, Stand Only with  
Clamp for Handle.....each \$5.00

**No. T0696 Floor Stand**

This outfit is for home or office use where portability is not essential. Has heavy base and telescoping stem adjustable in height from 62 to 30 inches. Applicator is permanently attached to flexible arm.

Finished in white enamel and nickel.  
No. T0696, Stand with No. 0750  
Applicator.....each \$15.00  
No. T0696, Stand Only with  
Clamp on End of Arm.....each 7.50

**Extra Bulbs**

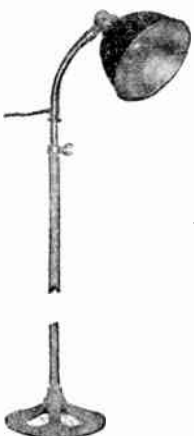
110-120-Volt, 200 Watts.....each \$1.25  
32-Volt, 128 Watts.....each 2.00  
250-Volt, 200 Watts.....each 2.40



**No. T0850 Table Model**



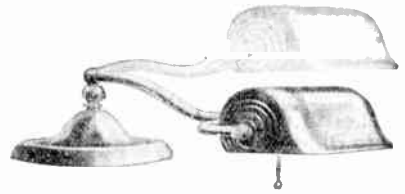
**No. T0645 Folding Stand**



**No. T0696 Floor Stand**

**No. 3182 Faries Adjustable Portables**

With Adjustable One-Piece Metal Hood



For roll top desk or piano. Base, 7 inches. Extends 10 inches.

Swing portable with vertical adjustment and adjustable metal hood, frosted inside.

Wired with 9 feet of silk cord, pull chain socket and plug. Standard package 6.

Price, No. 3182, Brushed Brass.....each \$7.60  
Price, No. 3182, Statuary Bronze.....each 7.60

**No. 3144 Faries Flexible Portables**



This portable has a heavy cast fancy base with a flexible arm.

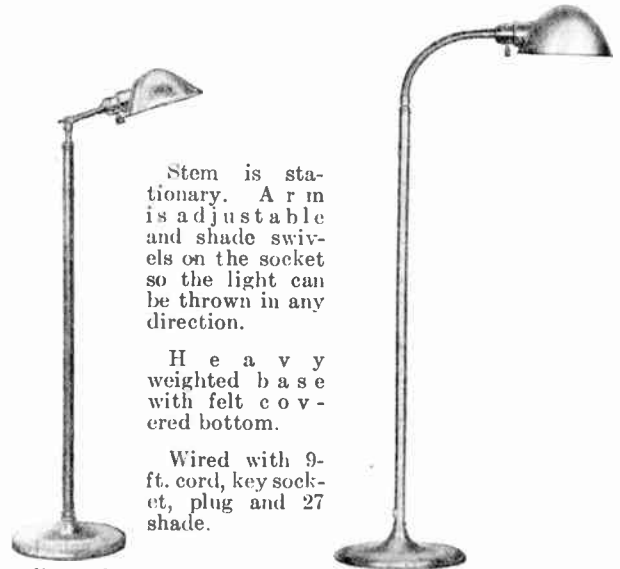
Wired with 9 feet of cord, push through socket, plug and No. 27 shade finished to match portable.

Maximum height is 23 inches. Extends 17 inches.

Standard package, 12.

Finish	Price, Each
Statuary Bronze.....	\$2.20
Early English.....	2.20
Pompeian Polychrome.....	2.70
Etruscan Polychrome.....	2.70

**Faries Adjustable Floor Portables**



**No. 3642**

**No. 3266**

Stem is stationary. Arm is adjustable and shade swivels on the socket so the light can be thrown in any direction.

Heavy weighted base with felt covered bottom.

Wired with 9-ft. cord, key socket, plug and 27 shade.

**No. 3642**

Height, 48 inches. Arm, 11 inches over all. Standard package, 6.

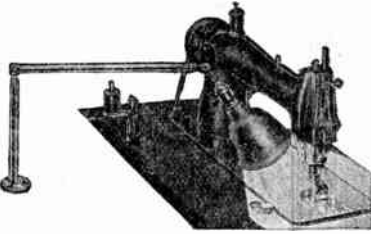
Price, No. 3642, Statuary Bronze.....each \$6.20  
Price, No. 3642, Brushed Brass.....each 5.80

**No. 3266**

Height, 48 inches. Flexible arm 9 inches. Standard package, 6.

Price, No. 3266, Statuary Bronze.....each \$6.45  
Price, No. 3266, Brushed Brass.....each 6.00

## No. 250 Tafco Adjustable Lighting Brackets



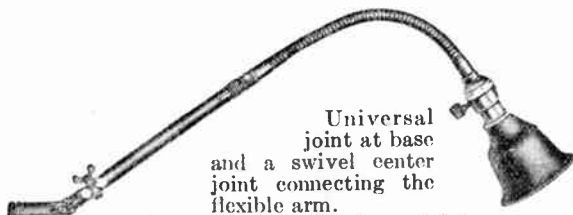
Two sets universal joints for adjustment.

Flange base attaches to table. Base nipple extends through table into outlet box below, (furnished only when ordered).

Price . . . . . each \$2.00  
Standard pkg., 12.

When ordering state height of standard and length of arm.  
Length . . . . . inches 9 12 15 18 21 24  
Standard . . . . . each \$1.20 1.30 1.40 1.50 1.60 1.70  
Arm . . . . . each 1.30 1.40 1.50 1.60 1.70 1.80  
No. 250 add prices of standard and arm in sizes ordered.  
No. 16 Steel Shade . . . \$ .70 3/8 Factory Socket . . . \$ .60  
No. 18 Porcelain Shade . 1.00 Approved Wiring . . . . . .40

## No. 244 Tafco Adjustable Lighting Brackets Black Finish



Universal joint at base and a swivel center joint connecting the flexible arm.

Has 1/2-inch I.P. male connection to conduit.  
Standard package, 12; assorted, if desired.

Price, No. 244E, 18-Inch Bracket Only . . . . . each \$2.70  
Price, No. 244F, 21-Inch Bracket Only . . . . . each 2.80  
Price, No. 244G, 24-Inch Bracket Only . . . . . each 2.90  
Price, No. 244H, 30-Inch Bracket Only . . . . . each 3.10  
No. 16 Steel Shade . . . \$ .70 3/8 Factory Socket . . . . . .60  
No. 18 Porcelain Shade . 1.00 Approved Wiring . . . . . .40

## Tafco Adjustable Lighting Brackets



Three sets of universal joints for adjustment.  
Standard package, 12. Can be assorted if desired.

No.	Description	Lgth. to Socket Inches	Price, Each			
			Black Finish	Brush Brass	Nickel-Plated	Statuary Bronze
262	Bracket Only . . . . .	24	\$4.00	\$6.00	\$6.00	\$6.60
263	Bracket Only . . . . .	36	4.40	6.60	6.60	7.20
264	Bracket Only . . . . .	48	4.80	7.20	7.20	7.80
	For Socket Shade and Wiring. add		1.60	1.80	2.00	2.00
	With Clamp Instead of Flange. add		.60	1.00	1.00	1.00

Special sizes to order. Prices in proportion.

## Tafco Adjustable Ceiling Fixtures

Universal joint at top allows free action in any direction. Telescopic slide arm enables adjustment in length as required. Universal joint next to socket permits angulation of reflector. Complete with socket, shade and wiring.

Size indicated is the length from ceiling to the joint just above the socket.

Standard package, 12. Can be assorted.

No.	Extended Length Feet	Minimum Length Inches	Price, Each
			Black Finish
105	5	45	\$8.00
106	6	54	8.00
107	7	64	8.00
108	8	76	8.50
109	9	88	9.00
110	10	100	9.50

For Brass or nickel finish add \$2.50 each.

## Buss Lights With Metal Shades

Buss Lights provide useful light to read, sew, study, or work by, because the lights have a neck that bends and a shade that tilts, to throw the light just where it is wanted. Can be quickly clamped anywhere by a screw clamp that holds securely on anything square or round up to 2 1/2 inches thick. In addition, they can be hung by a slot in the base on a hook or screw. The light hugs the wall like a permanent fixture. Each Buss Light is equipped with a 9-foot cord.

### Decorated All Metal Models



The tall, slender base and deep shade make this a useful and handsome desk lamp with all the regular Buss clamping, hanging and adjusting features.

Height, 14 inches.

Furnished in two finishes, statuary bronze or pastel green, with gold banding on base and shade.

No. 4262 Statuary Bronze. each \$3.25  
No. 4363 Pastel Green. . . . . each 3.25

### Plain All Metal Models



A utility model for workbench or garage, or for use as a bed lamp or just a handy lamp to carry around.

Height, 12 inches.

Furnished in two finishes, bronze lacquer or pastel green lacquer.

No. 2412 Bronze . . . . . each \$2.35  
No. 2514 Pastel Green . . . . . each 2.35

## Buss Light Demonstrating Stand



Holds three lights as illustrated, showing the clamping, hanging and adjusting features of the Buss light. Made of solid walnut. Takes only 6x9 inches of counter space. Given free on request with a dozen light order to dealers who do not already have a stand.

**P & S Alabax Porcelain Lighting Fixtures**



A modern and attractive bracket. Complete with fittings to mount on switch boxes, or larger outlet boxes, where plaster ring with small opening is used.

Length of back, 5 $\frac{5}{16}$  inches.  
Width of back, 2 $\frac{7}{8}$  inches.

**With Convenience Outlet**

Cat. No.	Per 100	Description	Std. Pkg.
AL-3104	\$232.50	Pull.....	12
AL-3106	202.50	Keyless.....	12

**Without Convenience Outlet**

AL-3105	\$202.50	Pull.....	12
AL-3107	172.50	Keyless.....	12

Add \$60.00 per 100 for black, light green, ivory, orchid or sea green glazes. Prices do not include lamps.

**P & S Alabax Porcelain Lighting Fixtures**



A bracket to cover almost any box used on side walls. Completely wired unless otherwise specified.

Length of back, 5 $\frac{1}{4}$  inches.  
Width of back, 4 $\frac{3}{8}$  inches.

**With Convenience Outlet**

Cat. No.	Per 100	Desc.	Std. Pkg.	Wt. Lbs.
AL-2230	\$232.50	Pull..	12	150
AL-2232	202.50	Keyless	12	140

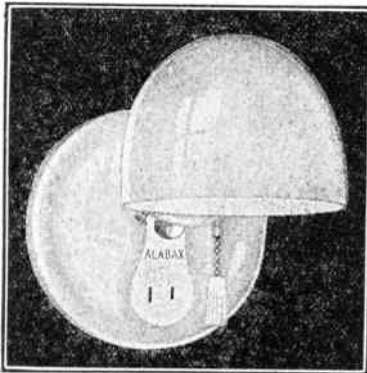
**Without Convenience Outlet**

AL-2231	\$202.50	Pull..	12	140
AL-2233	172.50	Keyless	12	130

Add \$60.00 per 100 for black, ivory, sea green, light green, or orchid glazes.

Prices do not include lamps.

**P & S Alabax Porcelain Lighting Fixtures**



This is a general purpose bracket to fit over any box conditions. It is dignified and sturdy in appearance and service. Complete with fittings to attach to studs.

Diameter base, 5 $\frac{3}{8}$  inches.

**With 2 $\frac{1}{4}$ -Inch Shadeholder**

Cat. No.	Per 100	Description	Std. Pkg.
AL-980	\$210.00	Keyless, with Convenience Outlet....	12
AL-984	180.00	Keyless, without Convenience Outlet....	12
AL-990	240.00	Pull, with Convenience Outlet.....	12
AL-982	210.00	Pull, without Convenience Outlet....	12

**With Plain Porcelain Ring**

AL-983	\$200.00	Pull, without Convenience Outlet....	12
AL-989	230.00	Pull, with Convenience Outlet.....	12

Add \$60.00 per 100 for black, ivory, sea green, light green, or orchid glazes.

Prices do not include glass.

**P & S Alabax Porcelain Lighting Fixtures**



For office buildings, hotels, homes, etc. Generally used in closets, toilets, halls, etc.

Diameter base, 4 $\frac{1}{2}$  in. With shadeholder groove ring.

Add \$60.00 per 100 for black, ivory, light green, or orchid glazes.

Prices do not include lamps.

Cat. No.	Per 100	Description	Std. Pkg.
AL-848	\$212.10	Pull, with Short Insulated Chain....	24
AL-849	240.00	Pull, with Short Chain and Cord....	12
AL-698	118.17	Keyless.....	24

**P & S Alabax Porcelain Lighting Fixtures**



The smooth glossy surface of this beam light is easily cleaned.

Complete with fittings to attach to all boxes.

Diameter base, 4 $\frac{3}{4}$  inches.

Cat. No.	Per 100	Desc.	Std. Pkg.
AL-2007ND	\$166.65	Pull..	12
AL-2011ND	136.35	Keyless..	24

Add \$60.00 per 100 for black, ivory, light green, or orchid glazes.

Prices do not include lamps.

**P & S Alabax Porcelain Kitchen Units**



This is a 4-inch fitter or kitchen unit of graceful design, complete with fittings to attach to any box.

Pull			
Cat. No.	Per 100	Std. Pkg.	Wt. Lbs.
AL-2019	\$180.00	24	55

Keyless With Chain Hole			
Cat. No.	Per 100	Std. Pkg.	Wt. Lbs.
AL-2020	\$150.00	24	55

Without Chain Hole			
Cat. No.	Per 100	Std. Pkg.	Wt. Lbs.
AL-2022	\$150.00	24	55

Add \$60.00 per 100 for black, ivory, light green sea green, or orchid glazes.

Prices do not include glass.

**P & S Alabax Porcelain Lighting Fixtures**



Furnished in regular Alabax colors.

Prices include white opal glass.

Add \$60.00 per 100 for black, ivory, sea green, light green or orchid glazes.

Takes lamps up to 150 watt.

Has 4-inch fitter.

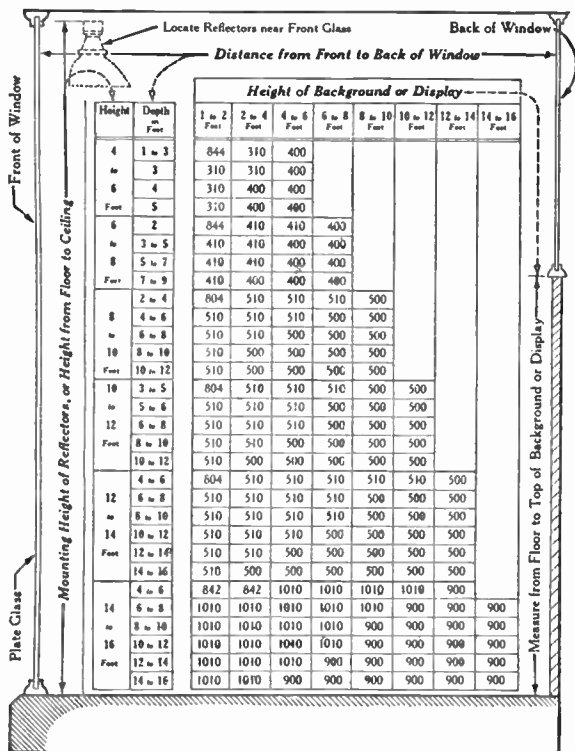
Pull			
Cat. No.	Per 100	Std. Pkg.	Wt. Lbs.
2240	\$525.00	12	55

Keyless			
Cat. No.	Per 100	Std. Pkg.	Wt. Lbs.
2241	465.00	12	55



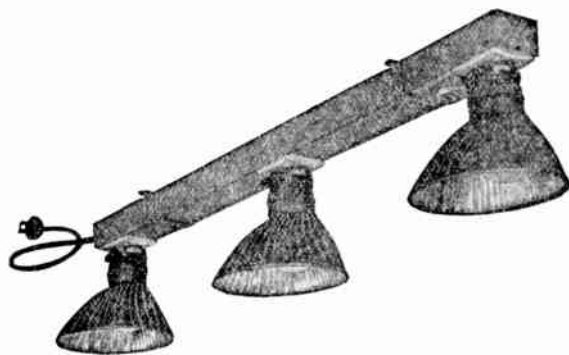
**X-Ray Show Window Reflectors**

Easy to Select the Correct X-Ray Reflector



**No. 53 Thrifty-Three Window Lighting Appliances**

For Three 100-Watt Lamps



A lighting appliance that makes practical, effective show window lighting at low cost available for the small store.

Furnished with 3 No. 310 Favorite Reflectors, CurtiStrip wire channel with 3 lamp sockets and holders, a plug-in outlet to provide current for a floodlight or another Thrifty-Three, and 2 universal hangers. Complete with wire (either wired or unwired as required) and all parts needed, except lamps, ready for immediate use.

Length over all 39 1/2 inches; length of CurtiStrip 36 inches; height from bottom of reflector to top of CurtiStrip channel 8 3/8 inches.

Maximum suspension with 2 universal hangers is adjustable from 12 to 42 inches over all.

Packed one in carton; weight 16 pounds.  
 No. 53 Complete Unit, Wired.....each \$17.50  
 No. 53-UW Complete Unit, Unwired.....each 16.75  
 Wire is included in the unwired fixture.

Reflector No.	Size Lamp Watts	Reflector No.	Size Lamp Watts
310	100	804	200
400	150	842	500-300
410	150	844	150-100
500	200	900	500-300
510	200	1010	500-300

**No. 310 Favorite X-Ray Show Window Reflectors**

For 100-Watt Lamps



Designed for windows of the average small store.

Holder required is Form O 2 1/4 inches.

Diameter 7 inches; height of reflector only 5 5/8 inches.

Standard package, 20 reflectors.

Weight, standard package, 26 pounds.  
 No. 310.....each \$3.00

**No. 844 Comet X-Ray Show Window Reflectors**

For 100 or \*150-Watt Lamps



Designed for very shallow windows.

Holder required is Form A, 3 1/4 inches; No. 10300 for X-Ray or CurtiStrip Sockets; No. 10400 for brass shell sockets; No. 10500 for porcelain sockets.

\*No. 10012 holder extension required for 150-watt lamp. Can be used only with No. 10300 holder on X-Ray or CurtiStrip sockets. Lamp should be inside frosted.

Diameter 8 5/8 inches; height of reflector only 4 3/8 inches.

Standard package, 12 reflectors.

Weight of standard package, 19 pounds.

No. 844.....each \$3.50

**Spacing of Reflectors**

The number of reflectors to use is influenced by the brightness of neighboring windows, the intensity of the street illumination, goods displayed, and color of the background, as well as the merchant's realization of the advertising and selling value of bright, well lighted windows. The closer reflectors are spaced, the brighter becomes the light in the window and vice-versa. In average installations spacing from center to center of reflectors is from 12 to 24 inches. In general, the following spacing is suggested:

- Large cities, business district.....12 inches
- Large cities, suburban district.....12 inches to 18 inches
- Small cities.....12 inches to 18 inches
- Towns.....15 inches to 24 inches

**X-Ray Show Window Reflectors**

No. 400 Jack—\*For 150-Watt Lamps

No. 500 King—For 200-Watt Lamps

Designed for average size deep windows.

Holder included is Form X.

**Dimensions**

No. 400 Width 8½ in.; depth front to back 8 in.; height including holder 8⅝ in.

No. 500 Width 10 in.; depth front to back 10½ in.; height including holder 10 in.

**Prices**

No. ....	400	500
Each.....	\$3.75	4.75
Std. Pkg....	10	10
Wt. Std. Pkg. ....	21	30
.....pounds		



\*If 100-watt lamp is used, ⅞-in. socket extension is required.

**X-Ray Show Window Reflectors**

No. 410 Jill—\*For 150-Watt Lamps

No. 510 Queen—For 200-Watt Lamps

No. 410 is designed for average size shallow windows; No. 510 for average size narrow windows. Form X holder included.

**Dimensions**

No. 410—Width 9⅝ in.; depth front to back 9½ in.; height including holder 8½ in.

No. 510—Width 10½ in.; depth front to back 10¾ in.; height including holder 10¼ in.

No. ....	410	510
Each.....	\$3.75	4.75
Std., Pkg.....	10	10
Wt. Std. Pkg. ....	25	38
.....lbs.		



\*For 100-watt lamp, use ⅞-in. socket extension.

**No. 910 Leviathan X-Ray Show Window Reflectors**

For 300 or 500-Watt Lamps

For large size narrow windows or high intensity Super-Lighting.

Holder and ½-inch socket with bushing for ⅜-in. pipe are included.

Width 13 in.; depth front to back 13 in.; height over all including holder and socket 14⅞ in.

Std. pkg., 4; weight std. pkg., 29 pounds.

No. 910.....each \$9.75



**No. 900 Giant X-Ray Show Window Reflectors**

For 300 or 500-Watt Lamps

Designed for large, deep windows or high intensity Super-Lighting.

Holder and ½-in. socket with bushing for ⅜-in. pipe are included.

Width 13 in.; depth front to back 13 in.; height over all including holder and socket 13¾ in.

Standard package, 4.

Weight standard package of 4 reflectors, holders and sockets, 26 pounds.

No. 900.....each \$9.75



**No. 7 Scoop Jr. X-Ray Show Window Reflectors**

For 75, 60, 40 or 25-Watt Lamps

For small size deep windows and average deep display cases.

Holders required for various size lamps: 75 or 60-watt, Form H 2¼ inches; 40 or 25-watt, Form O 2¼ inches.

Width 5 inches; depth front to back 4⅞ inches; height of reflector only 3⅞ inches.

Standard package, 20 reflectors.

Weight, standard package, 11 pounds.

No. 7.....each \$2.25



**No. 11 Hood Jr. X-Ray Show Window Reflectors**

For 75, 60, 40 or 25-Watt Lamps

For small shallow windows and average wall display cases.

Holders required for various size lamps: 75 or 60-watt, Form H 2¼ inches; 40 or 25-watt, Form O 2¼ inches.

Width 5 inches; depth front to back 5⅞ inches;

height of reflector only 3⅞ inches.

Standard package, 20 reflectors.

Weight, standard package, 15 pounds.

No. 11.....each \$2.25



**No. 778 Scoop X-Ray Show Window Reflectors**

For 100-Watt Lamps

Designed for small deep windows and large display cases.

Holder required is Form O 2¼ inches.

Width 7½ inches; depth front to back 7⅞ inches; height of reflector only 6⅞ inches.

Standard package, 24 reflectors.

Weight, standard package, 37 pounds.

No. 778.....each \$3.25



**No. 731 Hood X-Ray Show Window Reflectors**

For 100-Watt Lamps

For small shallow windows and large display cases.

Holder required is Form H 2¼ inches.

Width 8⅞ inches; depth front to back 9 inches; height of reflector only 6½ inches.

Standard package, 16 reflectors.

Weight, standard package, 30 pounds.

No. 731.....each \$4.00





## X-Ray Beehive Reflectors

This distributing type reflector gives a wide spread of light and hides the lamp. Adapted for illuminating factories, gymnasiums, etc. Clearest quality crystal glass with pure silver reflecting surface.

Nos. 585 and 54 are furnished with mogul socket and special holder.



Cat. No.	Each	Diam. In.	Height In.	Holder In.	Lamp Watts	Wt. Lbs.	
						Std. Pkg.	Std. Pkg.
3	\$1.75	4 1/2	3 3/8	2 1/4 H or O	75-25	20	12
535	2.50	5 7/8	5	2 1/4 H or O	100-60	24	22
570	3.50	8	7	3 1/4 A	150	16	33
575	4.25	9 3/8	8	3 1/4 A	200	8	24
585	9.25	11 1/8	13 1/2	Special	500-300	4	24
54	27.50	16 1/2	21 3/4	Special	1500-750	2	50

## X-Ray Direct Lighting Reflectors

This semi-concentrating reflector gives an intense concentration of light. The smaller sizes, Nos. 696 and 700 are used for bench lighting in factories; No. 710, where a higher intensity of light is required; No. 590 for gymnasiums, factories,

armories and other high interiors.

No. 590 is furnished with mogul socket and special holder. All reflectors are made of clear quality crystal glass with pure silver-reflecting surface.

Cat. No.	Each	Diam. In.	Height In.	Holder In.	Lamp Watts	Wt. Lbs.	
						Std. Pkg.	Std. Pkg.
696	\$3.00	8 3/8	5	2 1/4 H or O	100-60	24	30
700	4.40	10	5 1/8	2 1/4 H	150	18	32
710	5.50	11 1/2	6 7/8	3 1/4 A	200	6	19
590	27.50	20	20	Special	1500-750	2	42

## No. 515 Midget X-Ray Show Window Reflectors

For 25-Watt (T-10) Lamps

(Standard Medium Screw Base Tubular Lamp)



For use where space for mounting or concealing equipment is limited. Special holder is included.

This fits standard brass-shell socket.

Reflector only—width 2 7/8 inches; height 1 3/4 inches, including lip 2 1/8 inches; length 6 1/4 inches.

When installed with Scoopette miniature conduit fittings and standard electrolier angle sockets, maximum height or depth is 3 3/8 inches; length of reflector and socket 8 3/4 inches.

Standard package 36 reflectors and holders; weight, standard package, 16 pounds.

No. 515.....each \$2.25

## No. 750 Poke Bonnet X-Ray Show Window Reflectors

For Two 60, 40 or 25-Watt Lamps



For low deep windows and display cases.

Special holder and twin socket with 18 inches of wire and plug is included.

Width 14 inches; depth front to back, including holder, 7 inches over all; maximum height from top of bracket to bottom of reflector 6 1/8 inches over all.

Standard package 8 reflectors, holders and twin sockets with cord and plug; weight, standard package, 26 pounds.

No. 750.....each \$13.00

## X-Ray Finishing Flanges and Plaster Rings

For Recessing X-Ray Reflectors above Ceiling of Window Finishing Flanges



Recessing the reflectors and wiring above the ceiling gives the window a neat appearance. Light-weight cast flanges finish off the opening, support the reflector in correct position and reinforce plywood ceilings that would otherwise be weakened after openings are cut. Louvers and color-ray can be used the same as when equipment is supported from transom bar or ceiling. On newly plastered ceilings, use plaster rings described below. Flanges are supplied unfinished; may be painted to match window ceiling.

Standard package, 10.

Flange No.	For Reflector	Std. Pkg. Wt. Lbs.	Each
10594	No. 11 Hood Jr. with Louver	12	2.50
14310	No. 310 Favorite	3	.55
11400	No. 400 Jack	15	.65
11410*	No. 410 Jill	16	.65
11500	No. 500 King	22	.85
11510*	No. 510 Queen	24	.85
10329	Nos. 600 and 610	..	1.20
10349	No. 731 Hood	..	1.00
10417	Nos. 804 and 810	24	1.60
14004*	Nos. 842 and 848	26	1.50
10517	No. 844 Comet	16	.80
10432*	Nos. 900 and 910	26	1.00
14110*	No. 1010 Blimp	26	1.25

\*Plaster ring available for use with this flange shown below.

## Plaster Rings



Plaster rings, made of light-weight cast iron, are used where reflectors are to be recessed above plaster ceilings. They serve as a ground to plaster to, as a base for securely mounting ceiling finishing flanges, and make the ceiling rigid by reinforcing the lathing around the opening.

Plaster rings are installed by the lathing contractor. Plastering contractor places final coat of

plaster flush with the bottom of the Plaster Ring. Finishing flanges support the reflector in the proper position and finish off the opening in the ceiling. Lugs on sides are placed off-center to allow for close spacing between reflectors.

Plaster rings are also available for hinged rims and general lighting reflectors.

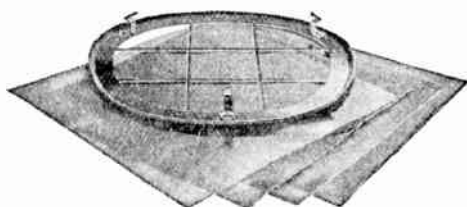
Plaster rings should be ordered early, even before reflector equipment, so that they will be on the job ready for use when lathing is being done.

Standard package, 10.

No.	For Reflector	Finishing Flange No.	Std. Pkg. Wt. Lbs.	Each
14007	No. 510 Queen	11510	24	1.50
14008	No. 900 (Giant or No. 910 Leviathan)	10432	26	1.80
14111	Nos. 842, 848 and 1010	{14004 14110}	26	2.00



**X-Ray Color-Rays**



Color-Ray is an accessory for producing color lighting effects with standard X-Ray Window Reflectors. It consists of a simple metal frame with 4 sheets of colored gelatin (red, blue, green and amber); clips securely on the reflector; very easy to install or to change colors.

Standard package, 10.

Cat. No.	For Use with Reflector	Wt. Lbs. Std. Pkg.	Each
440	No. 400 Jack.....	7	\$1.75
441	No. 410 Jill.....	7	1.75
55	Nos. 500 and 510.....	7	2.35
99	Nos. 900 and 910.....	7	2.75
10870	No. 1010 Blimp.....	7	3.50

**Color Gelatin Sheets**

**Size 11½x11½ Inches**  
For Nos. 440 and 441, also 33-A, 303-A and 338.

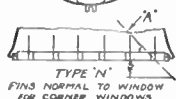
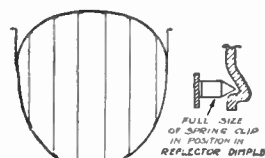
**Size 15x15 Inches**  
For Nos. 55, 99 and 10870, also Nos. 88, 808 and 888.

Cat. No.	Color	Each	Cat. No.	Color	Each
10372	Red	\$.15	10472	Red	\$.20
10373	Amber	.15	10473	Amber	.20
10374	Green	.15	10474	Green	.20
10375	Blue	.15	10475	Blue	.20

Standard package; 10 sheets one color or assorted.  
Weight, standard package, approximately, one pound.

**X-Ray Louvers**

For Concealing Light Source from View



Corner or island type windows often require a means of concealing the lamps and light from reflectors along the adjacent side. Louvers can be installed at any time in dimpled X-Ray Reflectors.

Hinged sections of continuous louvers available on order.  
Each louver is a complete unit; finish, gray.  
Standard package, 1.

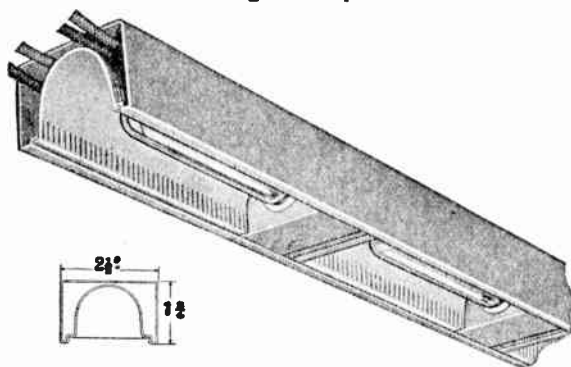
**Type N Louvers, Fins at Right Angles to Glass**

Cat. No.	For Use with Reflector	Wt. Lbs. Each	Each
12400-N	No. 400 Jack.....	1	\$3.00
12410-N	No. 410 Jill.....	1	3.00
12500-N	No. 500 King.....	1	3.00
12510-N	No. 510 Queen.....	1	3.00
12900-N	No. 900 Giant.....	2	3.75
12910-N	No. 910 Leviathan.....	2	3.75
12110-N	No. 1010 Blimp.....	2	4.00

**Type P Louvers, Fins Parallel to Glass**

12410-P	No. 410 Jill.....	1	\$3.00
12510-P	No. 510 Queen.....	1	3.00
12910-P	No. 910 Leviathan.....	2	3.75
12110-P	No. 1010 Blimp.....	2	4.00

**LightStrip**



LightStrip is a standardized lighting channel and can be made to any length with outlets spaced as required on the job. It is made with CurtiStrip and LightStrip unit assemblies in 3 sizes from 25 to 150 watts capacity.

Each section of LightStrip requires the same total length of No. 1 CurtiStrip also 2 No. 6 end caps and No. 16 couplings to connect short pieces of CurtiStrip or pieces over 10 feet long. It may be a short 1-light section or a longer section with many lights. It is wired on the bench, is easily installed and quickly connected to the lighting circuit like a fixture. It has ample capacity for carrying wires. The same methods of support used for CurtiStrip are used for mounting LightStrip. All CurtiStrip fittings and plug-in receptacles are standard for LightStrip.

Reflectors are bright aluminum finish; other metal parts are cadmium-plated.

**For 25-Watt T-6½ Intermediate Base Tubular Lamps**

**No. 26 Unit Assembly**

No. 26 assembly includes bright aluminum reflector and intermediate base socket unit. Minimum spacing between units 8 inches on centers. Cover spacers are cut 8 inches less than actual center to center spacing between units.

Standard package of 10 sets weighs 4½ pounds.  
No. 26 Assembly.....per set \$1.35

**For 25 to 150-Watt Medium Screw Base Tubular Lamps**

These assemblies include bright aluminum reflector with spring clip to hold lamp and medium screw base tilting socket. Socket tilts out for inserting or removing lamp.

**No. 27 Unit Assembly**

For 25-watt T-10 medium screw base lamps. Minimum spacing between units 9 inches on centers. Cover spacers are 8⅝ inches less than actual center to center spacing.

Standard package of 10 sets weighs 5¾ pounds.  
No. 27 Assembly.....per set \$1.55

**No. 28 Unit Assembly**

For 40-watt T-8, 75 or 150-watt T-10 medium screw base tubular lamps. Minimum spacing between units 15 inches on centers. Cover spacers are cut 14⅜ inches less than actual center to center spacing.

Standard package of 10 sets weighs 7 pounds.  
No. 28 Assembly.....per set \$1.75

**Wattage Required with LightStrip**

The same total wattage will generally be used with LightStrip as would normally be employed.

**PANEL LIGHTING:** For even lighting on flashed opal glass panels, the light source must be kept at proper distance from glass.

For narrow panels distance from front of LightStrip to glass must not be less than panel width.

For wide panels where several rows of LightStrip are used, distance between rows must not exceed distance from front of LightStrip to glass.

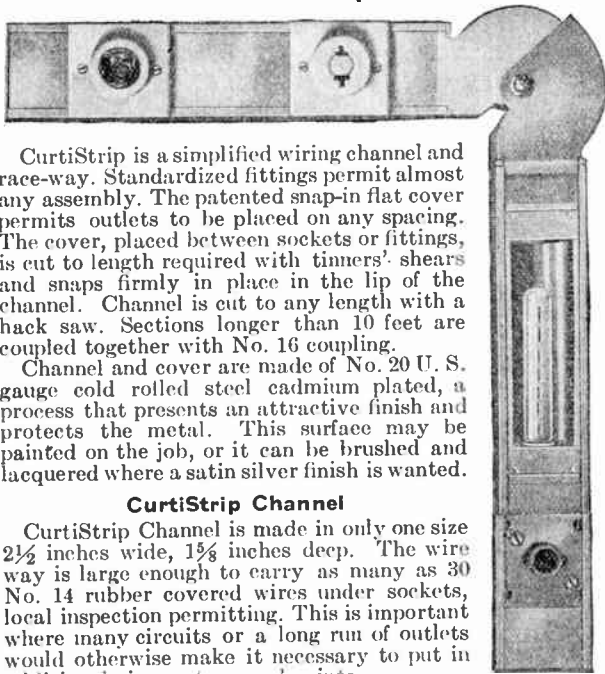
Where No. 27 or 28 are used behind glass panels, allow ½ inch of space between top of CurtiStrip and underside of glass.

For room illumination from panels 4 watts per square foot of floor area will generally give approximately 6 to 8 foot candles.

**COLOR LIGHTING EFFECTS:** Wattage and spacing should be the same as for white lighting.

## CurtiStrip

## CurtiStrip Sockets and Receptacles



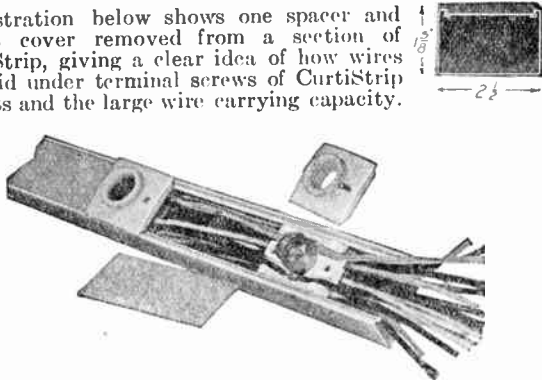
CurtiStrip is a simplified wiring channel and race-way. Standardized fittings permit almost any assembly. The patented snap-in flat cover permits outlets to be placed on any spacing. The cover, placed between sockets or fittings, is cut to length required with tinners' shears and snaps firmly in place in the lip of the channel. Channel is cut to any length with a hack saw. Sections longer than 10 feet are coupled together with No. 16 coupling.

Channel and cover are made of No. 20 U. S. gauge cold rolled steel cadmium plated, a process that presents an attractive finish and protects the metal. This surface may be painted on the job, or it can be brushed and lacquered where a satin silver finish is wanted.

### CurtiStrip Channel

CurtiStrip Channel is made in only one size  $2\frac{1}{2}$  inches wide,  $1\frac{5}{8}$  inches deep. The wire way is large enough to carry as many as 30 No. 14 rubber covered wires under sockets, local inspection permitting. This is important where many circuits or a long run of outlets would otherwise make it necessary to put in additional risers at several points.

Illustration below shows one spacer and socket cover removed from a section of CurtiStrip, giving a clear idea of how wires are laid under terminal screws of CurtiStrip sockets and the large wire carrying capacity.



- Standard package is 100 feet of ten 10-foot lengths.
- No. 1 Channel with Cover.....per foot \$ .50  
Weight, standard package, 130 pounds.
  - No. 1-A Channel without Cover.....per foot .45  
Weight, standard package, 103 pounds.
  - No. 1-B Cover Only for No. 1-A Channel.....per foot .10  
Weight, standard package, 40 pounds.

Sockets and receptacles can be spaced as close as  $2\frac{3}{4}$  inches on centers. Their 2-piece construction saves time and simplifies wiring.

Cover spacers are cut  $2\frac{1}{4}$  inches shorter than the center to center measurements between outlets.

Example: Outlets on 18-inch centers have  $15\frac{3}{4}$ -inch spacers.



Wires are not cut but stripped and laid under terminal screws along groove. Porcelain top completely covers bare wire. Not necessary to compound terminals.

### No. 4 Plug-In Porcelain Receptacles

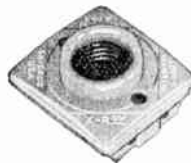


Polarized receptacle—15 amperes 125 volts, 10 amperes 250 volts dead front. Height over all in CurtiStrip  $2\frac{1}{4}$  inches.

Standard package of 10 weighs 7 pounds.

No. 4.....each \$ .65

### No. 5 Standard Porcelain Sockets



Standard porcelain socket with shade holder groove for use with X-Ray holders and for all other standard shade holders used on porcelain sockets.

Height over all in CurtiStrip  $2\frac{1}{6}$  inches.

Standard package of 50 weighs 27 pounds.

No. 5.....each \$ .55

### No. 5-A Special Porcelain Sockets

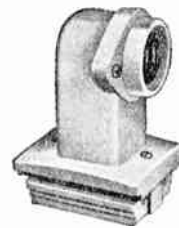
Special porcelain socket, no shade holder groove, for use with X-Ray holders and cove lighting reflectors.

Height over all in CurtiStrip  $2\frac{1}{6}$  inches.

Standard package of 50 weighs 27 pounds.

No. 5-A.....each \$ .55

### No. 8 Porcelain Angle Sockets



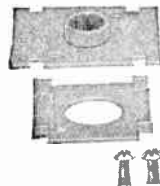
Porcelain angle socket for X-Ray cove lighting reflectors.

Height over all in CurtiStrip  $5\frac{1}{4}$  inches. Top of CurtiStrip to center of socket  $2\frac{3}{4}$  inches.

Standard package of 50 weighs 47 pounds.

No. 8.....each \$1.30

### No. 19 Nipple Attachments

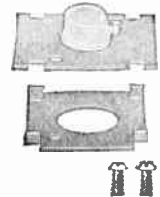


Nipple attachment,  $\frac{3}{8}$ -inch female thread, for supporting reflectors on nipple or for use with X-Ray cove lighting reflectors.

Standard package of 10 weighs 3 pounds.

No. 19.....each \$ .45

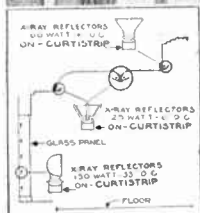
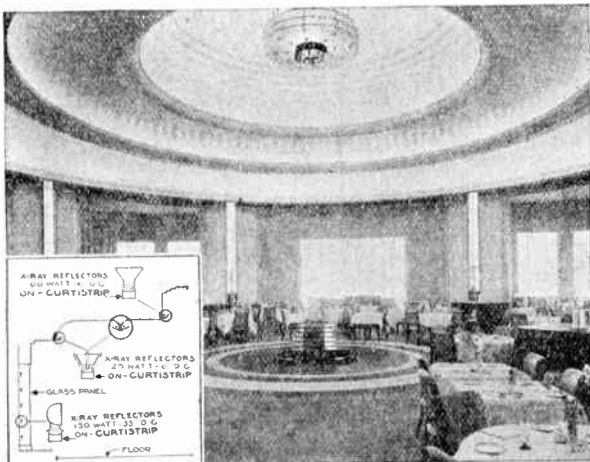
### No. 19-BX Attachments



Attachment designed to connect  $\frac{1}{2}$ -inch BX to CurtiStrip or for attaching  $\frac{1}{2}$ -inch socket to CurtiStrip by using chase nipple.

Standard package of 10 weighs 3 pounds.

No. 19-BX.....each \$ .35

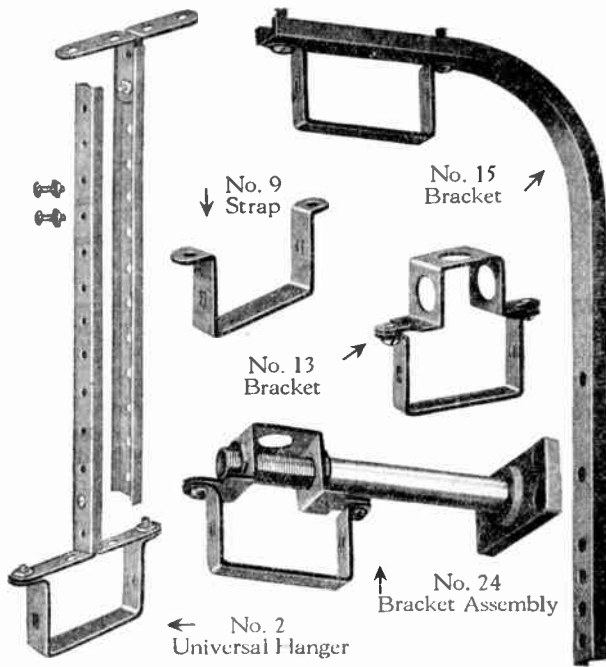


Recessed and Cove Lighting



**CurtiStrip Supports**

Standard Finish, Cadmium Plated



Five standard X-Raylets (CurtiStrip fittings) offer complete flexibility for mounting CurtiStrip. To bolt against any flat surface use No. 9 strap. To hang down from beam or ceiling use No. 2 hanger. This is adjustable from 4 to 34 inches over all, where a chain or rigid rod hanger is to be used, the No. 13 bracket should be substituted.

**No. 2 Universal Hangers**

This hanger can be made any length from 4 to 34 inches. Includes 2-piece perforated hanger, one No. 9 strap, 4 angle brackets and 6 bolts.

Standard package of 10 weighs 16 pounds.  
No. 2.....each \$1.05

**No. 9 Straps**

For holding CurtiStrip against any flat surface. Spread over all  $3\frac{5}{16}$  inches. Holes on  $3\frac{3}{16}$ -inch centers. Standard package of 10 weighs 2 pounds.

No. 9.....each \$0.10

**No. 13 Brackets**

Designed to hang CurtiStrip on pipe or chain hanger, pipe or chain not included.

Height top to bottom 3 inches. Standard package of 10 weighs 4 pounds.  
No. 13.....each \$0.30

**No. 15 Hangers**

For mounting CurtiStrip on wall or transom bar. May be used as shown or reversed.

With long leg of bracket at wall the distance from wall to center of CurtiStrip is 5 inches. Height of bracket may be varied from  $12\frac{1}{8}$  to  $8\frac{1}{4}$  inches or less by drilling new holes. With short leg of bracket at wall, distance from wall to center of CurtiStrip may be varied from  $8\frac{1}{4}$  to  $10\frac{1}{8}$  inches, height varying from 5 to 7 inches.

Standard package of 10 weighs 11 pounds.  
No. 15, Includes No. 9 Strap.....each \$0.65

**No. 24 Bracket Assembly**

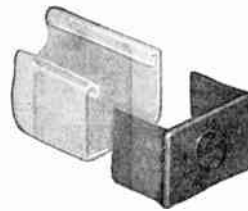
For mounting CurtiStrip out from transom bar or for suspending from ceiling. Includes  $1\frac{1}{2}$ x3-inch rectangular flange,  $\frac{3}{8}$ -inch nipple  $6\frac{1}{4}$  inches long with 2 locknuts and No. 13 brackets.

Standard package of 10 weighs 9 pounds.  
No. 24.....each \$0.80

**CurtiStrip Fittings**

Standard Finish, Cadmium Plated

**No. 6 End Caps**

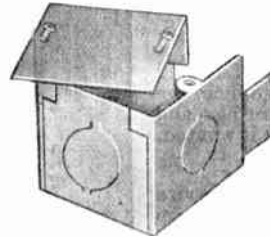


Designed to close and finish end of CurtiStrip. Provided with  $\frac{1}{2}$ -inch knockout (can be reamed to  $\frac{3}{4}$  inch) for lead-in circuits.

Standard package of 10 weighs 3 pounds.

No. 6.....each \$0.35

**No. 12 Service Boxes**



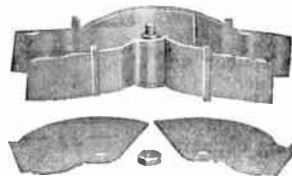
Designed for use where conduit larger than  $\frac{3}{4}$  inch is necessary.

Has four  $\frac{3}{4}$ -inch knockouts bottom, end and 2 sides, that may be reamed up to  $1\frac{1}{2}$  inches. Size extending outside of CurtiStrip  $2\frac{3}{4}$ x $2\frac{3}{4}$ x $2\frac{3}{4}$  inches.

Standard package of 10 weighs 12 pounds.

No. 12.....each \$1.70

**No. 14 Elbows**



Elbow is adjustable from 70 to 180 degrees. Cover is removable and eliminates fishing of wires. Separable body permits using elbow as splice box.

Standard package of one weighs 3 pounds.

No. 14.....each \$1.90

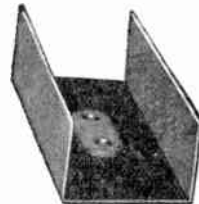
**No. 16 Couplings**

This coupling is used for connecting 2 pieces of CurtiStrip.

Does not reduce size of wireway or interfere with use of other CurtiStrip sockets and receptacles.

Standard package of 10 weighs 5 pounds.

No. 16.....each \$0.45

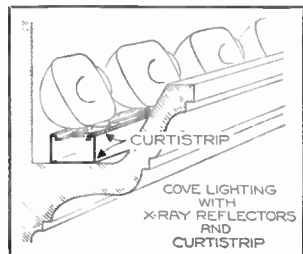
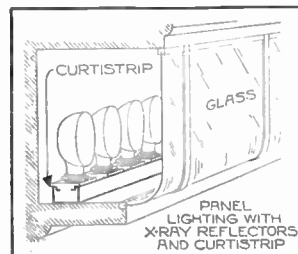


**No. 18 Box Adapters**

For connecting CurtiStrip to 4-inch standard octagonal outlet box. 1, 2, 3 or 4 adapters may be used so that CurtiStrip may be run in as many different ways from one outlet box.

Standard package of 10 weighs 6 pounds.

No. 18.....each \$0.65



X-Ray cove lighting reflectors may be mounted on No. 5-A Socket and entire length of CurtiStrip tilted to secure correct distribution of light.

Reflectors mounted on No. 8 Socket or No. 19 Nipple Attachments are adjusted individually.

CurtiStrip is generally fastened with No. 9 Strap.



## X-Ray Interior Floodlights Three Types of Light-Control

Three general types of light-control are provided with X-ray interior floodlights. The illustrations below give an idea of the distribution from each unit. These three types are briefly described as follows:

### Center Spot Beam



Distribution of Light from Nos. 44, 33-A or 88 Showing Flood of Light and Center Spot Beam

This combination of a flood and spotlight has a wide range of uses because of its intense concentration and wide general illumination. Small shop windows can be completely lighted with one or two of this type of unit so that the principal portions of the display are highlighted. At the same time there is sufficient light provided for the rest of the display.

### On Short Swivel Base

Cat. No.	Std. Lamp Watts
44	150-100
*33-A	200
33-B	200
*88	500-300
88-B	500-300

### On Portable Stand 54" High

Cat. No.	Std. Lamp Watts
*303-A	200
303-B	200
*808	500-300
808-B	500-300

### Spot Beam



Nos. 33-A or 88 with Control Ring to Conceal Lamp Produces Powerful Spot Beam

Where the general flood of light is not wanted but instead more of a spotlight effect is needed the Spot Beam should be used. A control-ring is used with the regular Type 33-A or 88 to confine all of the light into one powerful spot beam. This combination is generally used in store interiors for spotlight sales and wherever the light source should be concealed.

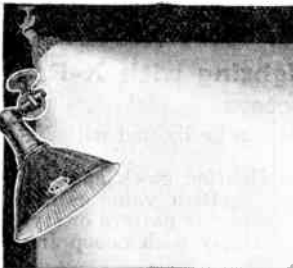
### On Short Swivel Base

Cat. No.	Control Ring No.	Std. Lamp Watts
*33-A	13351	200
33-B	13351	200
*88	18860	500-300
88-B	18860	500-300

### On 54" Portable Stand

Cat. No.	Control Ring No.	Std. Lamp Watts
*303-A	13351	200
303-B	13351	200
*808	18860	500
808-B	18860	500-300

### Flood of Light



Nos. 338 and 888 Type Floodlights provide a Wide Flood of Light

This distribution is readily understood. In X-Ray interior floodlights the overall spread is approximately 100° with the greatest concentration of light in the 40° zone.

The two sizes of this type of unit have a wide variety of uses.

### On Short Swivel Base

Cat. No.	Std. Lamp Watts
*338	200
338-B	200
*888	500-300
888-B	500-300

### On Portable Stand 54" High

Nos. 338, 338-B, 888 and 888-B can be supplied on portable stand 54 inches high so specifying.

\*Regularly supplied with Color-Frame and red, blue, green and amber gelatin for color highlighting. All others have no color equipment and are for white lighting only.

## No. 44 X-Ray Interior Floodlights

For 150 or 100-Watt Lamps



Concentrating type for white lighting only; no color equipment available. This is a combination of spot and floodlight. Base has universal adjustment.

Diameter of reflector 8 3/8 inches. Depth from back of socket to front of reflector 7 inches with 100-watt lamp, 7 1/2 inches with 150-watt lamp using holder extension (included).

Diameter of base 3 1/4 inches.

Standard package containing one unit weighs 5 pounds.

No. 44 ..... each \$7.00

## No. 33-A X-Ray Interior Floodlights

For 200-Watt Lamps



Concentrating type for white or colored lighting. For smooth soft edge beam use inside frosted lamps. Base has universal adjustment. Color equipment consists of 4 pieces of gelatin (red, blue, green and amber) frame and clips.

Diameter of reflector 10 1/2 inches. Depth back of socket to front of reflector 10 3/4 inches. Diameter of base 3 1/4 inches.

No. 33-A with Color Equipment, wt., 7 lbs. .... each \$9.50

No. 33-B without Color Equipment. .... each 7.75

No. 303-A Portable with Colors, wt., 31 lbs. .... each 21.00

No. 303-B Portable without Colors. .... each 19.25

Portables have 54-in. stand and 10-ft. cord with plug.

## No. 88 X-Ray Interior Floodlights

For 500 or 300-Watt Lamps



Concentrating type for white or colored lighting. Base has universal adjustment. Diameter of reflector 13 1/4 in. Depth from back of socket to front of reflector 11 1/8 in. Diameter of base 3 1/4 in. Color equipment consists of 4 pieces of gelatin (red, blue, green and amber) frame and clips.

No. 88 with Color Equipment. .... each \$16.50

No. 88-B without Color Equipment. .... each 13.75

No. 808 Portable with Colors. .... each 28.00

No. 808-B Portable without Colors. .... each 25.25

Weight, No. 88, 12 lbs., No. 808, 30 lbs.

Portables have 54-in. stand and 10-ft. cord with plug.

## X-Ray Control-Rings

For Interior Floodlights



A louver for converting regular interior floodlights into commercial spotlights. Consists of a circular spill shield for eliminating the spill of light common to all floodlights and confining all the light to one straight controlled beam.

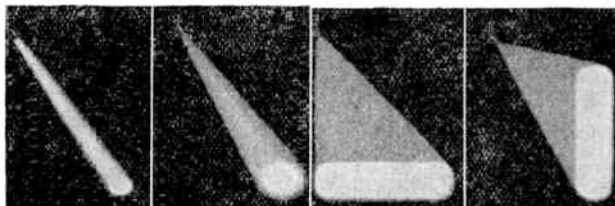
Control-ring is used only with concentrating types and is available only for 200 and 500-300 watt sizes listed below. Attached by snapping spring-clips over the lip of the floodlight reflector. Does not interfere with the use of color-ray and can be used with reflectors when recessed.

Standard package, 1; shipping weight, 1 pound.

No. 13351 for Nos. 33-A, B and 303-A, B. .... each \$3.50

No. 18860 for Nos. 88, 88-B, 808 and 808-B. .... each 4.50

**No. 315 X-Ray Spotlights**  
For 250-Watt G-30 Lamp



Soft Spot Beam  
8" to 30"

Both Horizontal and Vertical Beam  
Adjustable from 6° by 30° up to 24° to 50°



Designed for spotlighting where adjustment in the size of spot or a sharply defined beam of light is needed.

Length over all 15<sup>3</sup>/<sub>8</sub> inches; yoke 7<sup>3</sup>/<sub>8</sub> inches; diameter barrel 5<sup>3</sup>/<sub>4</sub> inches; lens 4<sup>1</sup>/<sub>2</sub> inches.

Black enamel finish. Wired with 6 feet of No. 16 wire and separable plug. Slides provide color lighting and special effects shown above.

Each spotlight has 4 color frames, red, blue, green and amber, one metal and 2 glass slides for producing smaller sharp spot beam, soft spot and rectangular vertical or horizontal beam of light. At 10 feet this is adjustable 16 to 60 in.

Standard package containing one unit weighs 8 pounds.  
No. 315 Spotlight.....each \$22.50  
Lens Only for No. 315.....each 4.50

**X-Ray Portable Footlights**

150-100\*-Watt Lamps on 12-Inch Centers



Designed for show windows, small stages and wherever a standardized or portable footlight is needed.

Footlights used alone or in combination with regular reflector equipment light the display brightly from below, eliminating shadows so often objectionable in overhead lighting.

This type of footlight is also widely used in schools, lodge rooms, clubs, style shows, conventions and expositions, police show-up rooms, museums, art galleries, etc.

Sturdily constructed of heavy gauge steel with inside finished aluminum bronze. X-Ray reflectors on 12-inch centers. Height over all 5<sup>5</sup>/<sub>8</sub> inches. Depth from front to back 5<sup>1</sup>/<sub>2</sub> inches. Provided in 2 standard lengths, 4 and 8 feet, but can be made to any length. Furnished unwired (without wire) and unassembled. Removable wireway cover makes wiring easy.

Standard finish, statuary bronze lacquer enamel.

Standard package is one section. Average shipping weight per foot on sections 4 feet long or more is 4<sup>1</sup>/<sub>2</sub> pounds.

No. 10584 Section 4 Feet Long for 4 Lamps.....each \$38.00  
No. 10588 Section 8 Feet Long for 8 Lamps.....each 75.00  
No. 10589 (Use this number for other lengths)

On Orders up to 8 Feet.....per foot 11.25

On Orders for More than 8 Feet.....per foot 10.75

Specify length required.

\*With 100-watt lamps use short (7/8-inch) socket extension.

**X-Ray Scoopette and Hoodette Reflectors**

For 50-Watt (A-19 or P-19), 25-Watt (A-19) or 15-Watt (A-17) Lamps

Scoopettes and Hoodettes are miniature show window reflectors and are recommended for lighting display cases. Lamps burn in the natural position, base up. Provide a bright light without glare and of uniform intensity. Supplied in complete showcase lighting outfits or as separate reflector units, medium screw base sockets, for mounting on standard 3/8-inch brass pipe, 1/2-inch iron pipe size with standard thread.

**No. S-200 Scoopettes**

Designed for lighting show cases with inside height and depth approximately equal.

Width 4 inches. Depth from front to back 3<sup>5</sup>/<sub>8</sub> inches. Height over all 4<sup>1</sup>/<sub>2</sub> inches.

Standard package, 10.

Weight, standard package, 7 pounds.

No. S-200 Unit.....each \$5.00



**No. H-199 Hoodettes**

Designed for lighting wall cases with height approximately 2 to 3 times depth.

Width 3<sup>3</sup>/<sub>4</sub> inches. Depth from front to back 5<sup>3</sup>/<sub>8</sub> inches. Height over all 4<sup>1</sup>/<sub>2</sub> inches.

Standard package 10.

Weight, standard package, 9 pounds.

No. H-199 Unit.....each \$5.00



**Complete Outfits**

Scoopette or Hoodette Outfits are supplied complete with all fittings necessary to install in either wood frame or all-glass display cases. No switch box, switch, switch plate or lamps. Prices given in table below are for show cases with square ends. Add \$2.50 for case with one round end, \$3.25 for two round ends. Material regularly supplied unwired and unassembled. Add 20% for wiring and assembling.

Standard package, 1 complete outfit.

Length Case Outside	No. SCOOPETTES OR HOODETTES PER CASE						
	2	3	4	5	6	7	
4' to 6'	\$20.75	\$26.75	\$33.25				
6'1" to 8'		28.00	34.00	\$40.50	\$46.75		
8'1" to 10'				41.00	47.75	\$54.25	

Prices on complete lighting equipment for cases longer than 10 feet supplied on request.

When ordering complete outfits, specify all-glass or wood frame and give the following dimensions:

Inside length from glass to glass or wood frame to wood frame.

Distance from under side of top glass to under side of floor of case.

If cases are not of regular square end type, send a rough sketch giving dimensions and radius of the end curve.

**Display Case Lighting with X-Ray Reflectors**

Many types of display cases can be lighted with X-Ray Reflector equipment.

Light Strip can be used for lighting stock and display racks in clothing stores increasing their value as display cases and making easier the selection of pattern or style.

Cabinets can be lighted effectively with Scoop Jr. and Hood Jr. reflectors.

Corridors, passages and lobbies correspond in value to street frontage for window displays. Their effectiveness is increased by lighting with the smaller sizes of X-Ray window reflectors.

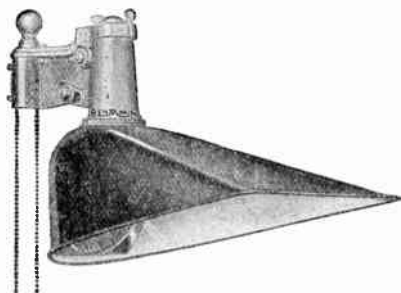
Display cases of silver and polished metals are attractively lighted with Hood Jr. reflector and recesses. Clear or daylight lamps or a combination of both, may be used.

Footlighting with X-Ray Portable Footlights or Light Strip or X-Ray reflector mounted below panels of diffusing glass is used in display case lighting. This arrangement permits having cases with lower head room and raising the platform to a more interesting height.



## Benjamin Duo-Service Floodlights

N. E. C. Standard  
For 750, 1000 and 1500-Watt Lamps



For lighting gasoline service stations, used car lots, etc.

Combines a wide coverage diffusing reflector with an intensive beam floodlighting projector. Provides uniform illumination of a surrounding area with simultaneous high intensity floodlighting of an upright or flat surface within, close to, or at some distance from area of general illumination. This high intensity floodlighting beam can be concentrated or spread by a simple screw adjustment.

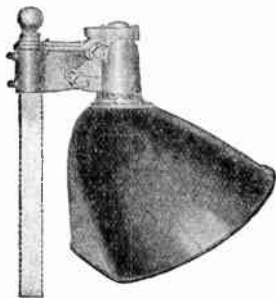
Installed by slipping bracket arm over 1½-inch pipe.

Porcelain enameled steel reflector, green outside, white inside. Chromium or aluminum oxide metal projector and heavy cast aluminum hood includes a porcelain mogul base socket. All metal fittings not cast aluminum are cadmium-plated.

No. 5763, with Chromium Concentrating Beam Inner Projector...	each	\$34.00
No. 5763A, Same as No. 5763, but Fits 2" I.P. . . . .	each	34.00
No. 5764, with Ox. Alum. Spread Beam Inner Projector...	each	31.00
No. 5764A, Same as No. 5764, but Fits 2" I.P. . . . .	each	31.00
No. 5765, without Projector . . . . .	each	28.00
No. 5765A, Same as No. 5765, but Fits 2" I.P. . . . .	each	28.00
No. 5766, with Oxidized Aluminum (Wide Spread Beam) Inner Projector (Larger Than No. 5764) . . . . .	each	32.50
No. 5766A, Same as No. 5766, but Fits 2" I.P. . . . .	each	32.50

## Benjamin Play-Area Floodlights

For 750, 1000 and 1500-Watt Lamps



An open type, wide angle, diffusing floodlight designed for lighting outdoor recreational areas such as football and athletic fields, race tracks, etc. Provides uniform, strong illumination on the ground area to the front and sides and improves upper area illumination.

A wide range of adjustment, both horizontally and vertically, is provided by the rugged mounting bracket. A positive clamping mechanism locks the fixture at any desired position through this range.

Porcelain enameled reflector, green outside, white inside; inner reflector is non-corrosive aluminum oxide; all metal parts are cast aluminum or cadmium-plated.

No. 5752, Fits Over 1½-Inch I.P. . . . .	each	\$31.00
No. 5752A, Fits Over 2-Inch I.P. . . . .	each	31.00
No. 5753 (Less Inner Reflector), Fits Over 1½-Inch I.P. . . . .	each	28.00
No. 5753A (Less Inner Reflector), Fits Over 2-Inch I.P. . . . .	each	28.00
No. 5754, with Universal Mounting Bracket and Pipe Clamp . . . . .	each	29.00
No. 5755, with Universal Mounting Bracket, Less Inner Projector . . . . .	each	26.00

## Benjamin Open-Type Floodlights



A wide angle, open type diffusing floodlight. For floodlighting the smaller type of recreation area, playground, parking lot, gasoline station, etc.

Hoods are made in 3 types: pendent for attaching directly to a threaded pipe, or with universal mounting bracket for fastening to flat surfaces or, by means of the pipe clamp supplied with the bracket, to 1 and 1½-inch pipe or with bracket arm to

slip over 1½-inch pipe.

A wide range of adjustment vertically is provided by the universal mounting bracket hood, while both hoods provide complete adjustability of the reflector horizontally. Floodlight is durably constructed for outdoor service and is entirely weatherproof throughout.

The porcelain enameled steel reflector is finished green outside, white inside. Inner auxiliary reflector has special oxidized aluminum finish.

Pendent hood is malleable iron, tapped ¾-inch standard, supplied tapped 1-inch, when specified. Universal mounting bracket hood is cast aluminum. All metal fittings not aluminum castings are cadmium-plated to resist corrosion.

Packed one in a standard package.

For 300 and 500-Watt Lamps

No. 5770, with Pendent Hood . . . . .	each	\$17.00
No. 5771, with Universal Mounting Bracket . . . . .	each	19.00
No. 5772, (No. 5770, Less Inner Reflector) . . . . .	each	14.00
No. 5773, (No. 5771, Less Inner Reflector) . . . . .	each	16.00
No. 5774, (No. 5771 with Concealed Wiring, Mounting Bracket for 1½-Inch I.P.) . . . . .	each	21.00
No. 5775, Same as No. 5774, but Less Inner Reflector . . . . .	each	18.00

For 750, 1000 and 1500-Watt Lamps

No. 5970, with Pendent Hood . . . . .	each	\$18.00
No. 5971, with Universal Mounting Bracket . . . . .	each	20.00
No. 5973, (No. 5970, Less Inner Reflector) . . . . .	each	15.00
No. 5974, (No. 5971, Less Inner Reflector) . . . . .	each	17.00
No. 5975, (No. 5971, with Concealed Wiring Mounting Bracket for 1½-Inch I.P.) . . . . .	each	22.00
No. 5976, (No. 5975, Less Inner Reflector) . . . . .	each	19.00

## Benjamin Big-Ben Floodlights

For 750, 1000, 1500 and 2000-Watt Lamps



A long range, diffusing floodlight for lighting outdoor sport and recreational areas where greater distances are encountered.

Fixture hood is fitted with removable cast aluminum cap which carries socket as a unit. Cap has two porcelain knobs at sides and is fitted with one-piece porcelain insulated wire entrance bushing at bottom.

Mogul base porcelain socket is attached to hood cap.

Inner reflector of oxidized aluminum is positioned deep back in fixture and is closely fitted to lamp neck so as to intercept and utilize the greatest quantity of light.

Porcelain enameled steel reflector, green outside, white inside. All metal parts are aluminum or cadmium-plated.

No. 5776, with Slip-Fitter Base . . . . .	each	\$65.00
No. 5778, with Cross Arm Base . . . . .	each	67.50
No. 5780, with Wall Bracket Support . . . . .	each	72.50



**Benjamin Utility Portable Floodlights**



Has ample beam strength and sufficient beam control to meet the needs of smaller type flood-lighting jobs where it is necessary to project light to a considerable distance from place where floodlights are mounted.

With polished aluminum alloy reflecting surfaces sealed by heat-resisting stippled glass covers and special gaskets. Two wing nuts control adjustment so fixtures can be tilted up or down and turned in a complete circle.

Furnished completely wired.

**For 150-200-Watt Lamps—Reflector Diameter, 10<sup>7</sup>/<sub>8</sub>"**

Stip. Cover Glass	*With Pedestal Base and Removable Spike			†With Pipe Bracket Fitting			Cover Glasses Only		
	Cat. No.	Each	Ship. Wt. Lbs.	Cat. No.	Each	Ship. Wt. Lbs.	Cat. No.	Each	Ship. Wt. Lbs.
Clear	5815	\$12.00	10	5915	\$12.00	8 <sup>1</sup> / <sub>2</sub>	5802CL	\$3.50	2 <sup>1</sup> / <sub>2</sub>
Red	5816	14.00	10	5916	14.00	8 <sup>1</sup> / <sub>2</sub>	5802R	5.50	2 <sup>1</sup> / <sub>2</sub>
Green	5817	14.00	10	5917	14.00	8 <sup>1</sup> / <sub>2</sub>	5802G	5.50	2 <sup>1</sup> / <sub>2</sub>
Amber	5818	14.00	10	5918	14.00	8 <sup>1</sup> / <sub>2</sub>	5802A	5.50	2 <sup>1</sup> / <sub>2</sub>
Blue	5819	14.00	10	5919	14.00	8 <sup>1</sup> / <sub>2</sub>	5802B	5.50	2 <sup>1</sup> / <sub>2</sub>

**For 300-500-Watt Lamps—Reflector Diameter, 13<sup>1</sup>/<sub>2</sub>"**

Clear	5805	\$22.00	11	5905	\$22.00	10	5803CL	\$5.00	5
Red	5806	26.00	11	5906	26.00	10	5803R	9.00	5
Green	5807	26.00	11	5907	26.00	10	5803G	9.00	5
Amber	5808	26.00	11	5908	26.00	10	5803A	9.00	5
Blue	5809	26.00	11	5909	26.00	10	5803B	9.00	5

\*For mounting in turf; with heavy duty attachment cord and plug. †To attach to pipe standards. Tapped for 1/2-inch i.p. With pig-tail for lead-in to fitting.

**Benjamin Junior Portable Floodlights**



A wide-spread, diffusing floodlight for use where light can be mounted relatively close to object or area to be floodlighted.

Porcelain enameled steel reflector is green outside, white inside. Reflecting surfaces are sealed against weather and dust by plain cover glasses and gaskets held by metal retaining bands. Can be tilted up or down and turned in a complete circle by loosening wing nuts.

Furnished completely wired.

**For 75-100-Watt Lamps—Reflector Diameter, 8<sup>1</sup>/<sub>2</sub>"**

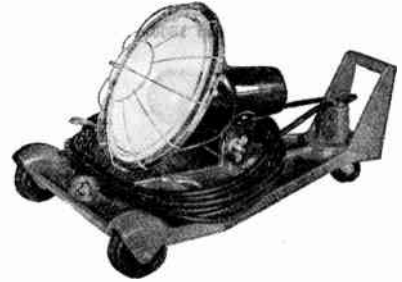
Cover Glass	*With Pedestal Base and Removable Spike			†With Pipe Bracket Fitting			Cover Glasses Only		
	Cat. No.	Each	Ship. Wt. Lbs.	Cat. No.	Each	Ship. Wt. Lbs.	Cat. No.	Each	Ship. Wt. Lbs.
Clear	5810	\$7.25	7	5910	\$7.25	5 <sup>1</sup> / <sub>2</sub>	5801CL	\$1.70	1 <sup>1</sup> / <sub>2</sub>
Red	5811	8.25	7	5911	8.25	5 <sup>1</sup> / <sub>2</sub>	5801R	2.70	1 <sup>1</sup> / <sub>2</sub>
Green	5812	8.25	7	5912	8.25	5 <sup>1</sup> / <sub>2</sub>	5801G	2.70	1 <sup>1</sup> / <sub>2</sub>
Amber	5813	8.25	7	5913	8.25	5 <sup>1</sup> / <sub>2</sub>	5801A	2.70	1 <sup>1</sup> / <sub>2</sub>
Blue	5814	8.25	7	5914	8.25	5 <sup>1</sup> / <sub>2</sub>	5801B	2.70	1 <sup>1</sup> / <sub>2</sub>

**For 150-200-Watt Lamps—Reflector Diameter, 10<sup>7</sup>/<sub>8</sub>"**

Clear	5820	\$12.00	10	5920	\$12.00	9 <sup>1</sup> / <sub>2</sub>	5802CL	\$3.50	2 <sup>1</sup> / <sub>2</sub>
Red	5821	14.00	10	5921	14.00	9 <sup>1</sup> / <sub>2</sub>	5802R	5.50	2 <sup>1</sup> / <sub>2</sub>
Green	5822	14.00	10	5922	14.00	9 <sup>1</sup> / <sub>2</sub>	5802G	5.50	2 <sup>1</sup> / <sub>2</sub>
Amber	5823	14.00	10	5923	14.00	9 <sup>1</sup> / <sub>2</sub>	5802A	5.50	2 <sup>1</sup> / <sub>2</sub>
Blue	5824	14.00	10	5924	14.00	9 <sup>1</sup> / <sub>2</sub>	5802B	5.50	2 <sup>1</sup> / <sub>2</sub>

\*For mounting in turf; with rubber-covered attachment cord and plug. †To attach to pipe standards. Tapped for 1/2-inch i.p. With pig-tail for lead-in to fitting.

**Benjamin Mobilites**



For automobile repair work the Mobilite can be used like a mechanic's creeper and rolled under car to light any portion being worked on. Clearance of Mobilite is so low that the 100-watt fixture will roll under running board of a car, bus or truck. In unlighted pits and under hydraulic lifts Mobilite makes greasing and service easier.

The Mobilite can be easily pushed or rolled anywhere—yet once set leaves both hands free for work. Cast iron truck has three fibre rollers, two at front and one at rear which is pivoted. Truck is enameled a brilliant red. A handle is provided for carrying the fixture about.

Porcelain enameled steel reflector is green outside, white inside. Can be tilted upward by loosening wing nut.

Reflector interior is sealed against dust and dirt by the cover glass, which is held in place by a removable metal band and retaining gasket. A rust-resisting guard welded to cover band, protects glass. Clear covers: plain on 100-watt units and stippled on 200-watt units.

Fixture is wired; with 25 feet of rubber-covered cable and rubber plug. A strain relief is provided at back of truck. Medium base socket—N.E.C. standard.

Size Lamp Watts	With 2-Wire Cable			With 3-Wire Cable		
	Cat. No.	Each	Ship. Wt., Lbs.	Cat. No.	Each	Ship. Wt., Lbs.
75, 100	5791	\$15.00	24	5793	\$15.75	24
150, 200	5792	19.00	25	5794	19.75	26

**Benjamin Pit and Tunnel Lighting Fixtures**

**For Correct Lighting in All Types of Pits National Electrical Code Standard**

The proper lighting of pit interiors and the vehicles over the pits, lessens the danger of accidents to workers and increases their speed and effectiveness. The Benjamin Pit Lighting Fixture with refracting glass cover offers a most satisfactory means of obtaining this correct illumination.



The efficient trough-shaped porcelain enameled steel reflector assures maximum light output, while the refracting glass cover concentrates the major portion of the light on the underside of the object over the pit.

Suitable for built-in or surface installation in locations like automobile service and greasing pits, railway and traction line repair pits, viaducts, tunnels and similar locations. In some types of locations, such as viaducts, tunnels and subways, where lighting requirements are of a general nature, the pit light with a plain glass cover will be found more satisfactory than the refracting.

Fixture consists of a cover and a cast iron box which are held together by four bolts. Cover includes a cast iron frame, a heat-resisting glass cover, a double rubber gasket, which seals cover frame to box and glass to cover frame, and a brass wire guard.

The cast iron box includes a porcelain enameled steel trough-shaped reflector and a keyless socket. Box is tapped at both ends for either 1/2, 3/4 or 1 1/2-inch conduit.

Packed one in a standard package.

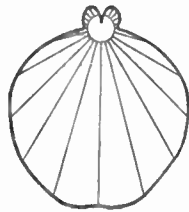
Size Lamp Watts	DIMEN., IN.			Wt. - Lbs. - Std. Pkg.	With Refracting Glass Cover		With Plain Glass Cover	
	Depth	Length	Width		Cat. No.	Each	Cat. No.	Each
100, 150	6 <sup>1</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>2</sub>	8 <sup>3</sup> / <sub>8</sub>	23	5715	\$18.00	5710	\$18.00
*200	7 <sup>3</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	8 <sup>3</sup> / <sub>8</sub>	26 <sup>1</sup> / <sub>2</sub>	5720	20.00	5717	20.00

\*With wire clamp for feed wires.

**Type 79 Benjamin Glassteel Diffusers**

Complete with Hood, Reflector and Globe

National Electrical Code Standard



Provides soft, even light over a wide range of intensities. Direct and reflected glare is eliminated. Openings at the top of the reflector give ample light on the ceiling to relieve contrasts between the fixture and its background.

Composed of two separable elements—a hood with a wiring terminal base and a complete assembly of reflector globe and lamp, which can be taken down as one piece for easy cleaning. A slight upward pressure against the reflector rim, less than a quarter turn to the left and reflector assembly is released from hood; to put up—simply turn right and reflector is secured.

The terminal base in the hood is extremely simple to wire. Both wiring leads are brought in through the single center hole in the hood and terminal base.

A single lever on the side of the reflector controls the clamping or release of the globe in the fixture.

Reflector is porcelain enameled steel, with Benjamin Type 79 bayonet-lock coupling. Reflectors have built-in lamp holders and hayonet plate. Standard reflector has apertures at top for passage of light to ceiling.

Terminal base, N.E.C. standard, simple-to-wire. One type of terminal base is standard in both outlet box and pendant type hoods and accommodates reflectors with medium or mogul base lamp holders.

Three types of hoods are provided, outlet box, angle and pendant. Outlet type has one hole slotted for easy attachment.

Angle and pendant hoods are tapped for 1/2 inch conduit, can be supplied in 3/4 inch, when specified.

Reflectors are white porcelain enameled inside and out, with blue-black bead. Spring clamp globe holder, hood and bayonet plate are cadmium-plated.

**Pendant Hood Type with Keyless Lamp Holder**

Cast iron; tapped 1/2 inch standard; 3/4 inch when specified.

Size Lamp Watts	DIMEN. IN.		Std. Pkg. No.	With Opal Glass Globe		Wt. Lbs. Std. Pkg.	With Daylight Glass Globe		
	Diam.	Ht.		Cat. No.	Each		Cat. No.	Each	
*150, 200	18	13	4	7201	\$9.30	52	7226	\$9.80	52
300, 500	20	15 5/16	4	7202	12.90	68	7227	13.65	68
750, 1000	24	18 1/4	2	7203	18.90	70	7228	20.65	70

**Ceiling Hood Type with Keyless Lamp Holder**

Ceiling type hoods are cast iron, and fit 4-inch standard round or octagonal outlet boxes.

Size Lamp Watts	Diam.	Ht.	Std. Pkg. No.	Each	Cat. No.	Each	Std. Pkg.
*150, 200	18	12 1/2	4	\$9.30	9201	\$9.80	54
300, 500	20	14 13/16	4	12.90	9202	13.65	70
750, 1000	24	17 1/8	2	18.90	9203	20.65	70

**Angle Type Hood with Keyless Lamp Holder**

Cast iron. Tapped 1/2 inch standard; 3/4 inch when specified.

Size Lamp Watts	Diam.	Ht.	Std. Pkg. No.	Each	Cat. No.	Each	Std. Pkg.
*150, 200	18	14 1/8	4	\$9.30	3201	\$9.80	44
300, 500	20	16 1/8	4	12.90	3202	13.65	50
750, 1000	24	19 3/4	2	18.90	3203	20.65	50

**Extra Reflectors for Easy Maintenance of System**

Consists of Reflector, Lamp Holder and Globe

Size Lamp Watts	Diam.	Ht.	Std. Pkg. No.	Each	Cat. No.	Each	Std. Pkg.
*150, 200	18	11 1/8	4	\$8.50	1201	\$9.00	54
300, 500	20	13 3/8	4	12.10	1202	12.85	67
750, 1000	24	16 1/2	2	18.10	1203	19.85	68

\*When using 150-watt lamp, socket extension No. 91 must be used to correctly position lamp in reflector.

**Lamp Holders**

Shock-absorbing lamp holders furnished in place of regular rigid lamp holder at an advance of 10 cents in price. When ordering, suffix regular reflector number with "SHB."

**Type 79 Benjamin RLM Dome Reflectors**

Porcelain Enameled Steel

National Electrical Code Standard



Constructed on a unique principle which permits the reflector, together with the lamp, to be taken down with one simple movement for easy cleaning.

Unit consists of two separable elements—hood with wiring terminal base, and reflector to which is assembled the lamp holding element. A slight upward pressure against reflector rim, less than a quarter turn to left, and reflector with lamp comes down as a unit.

The 3-point bayonet plate on top of the reflector is slipped into bottom of hood and both locked together by a quarter turn to right.

Contact is made at any point where reflector heel may be entered in hood. Polarization is automatically provided for by the circular design of the contacts.

Reflector is seamless porcelain enameled steel with bayonet-lock coupling. With porcelain lamp holder. Angle of cut off, 17 1/2°.

Terminal base is N.E.C. standard. One type of terminal base is standard in both ceiling and pendant type hoods and accommodates reflectors with medium or mogul base lamp holders. Three types of hoods are provided, ceiling type outlet box, pendant and angle, side entrance type; outlet type has holes slotted for attachment.

Reflectors are porcelain enameled steel, green outside, white inside. Hood and bayonet plate are cadmium-plated.

Prices do not include wires or lamps.



Bayonet Type Coupling Permits Taking Down Reflector and Lamp as a Complete Unit

**Pendant Hood and Reflector with Keyless Lamp Holder**

Pendant hoods are cast iron, tapped 1/2 inch standard; 3/4 inch if specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES	Std. Pkg.	Wt., Lbs.
			Diam. Height		
7641	\$3.60	60, 100	12 9 7/8	10	42
7642	3.80	150	14 11	10	49
7643	4.40	200	16 12 1/8	10	56
7644	5.70	300, 500	18 13 11/16	5	43
7645	7.60	750, 1000	20 16 5/8	5	54

**Ceiling Type Hood and Reflector with Keyless Lamp Holder**

Ceiling type hoods are cast iron and fit 4-inch standard outlet boxes of 1 1/2 inches or more depth.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES	Std. Pkg.	Wt., Lbs.
			Diam. Height		
9641	\$3.60	60, 100	12 9 3/4	10	45
9642	3.80	150	14 10 7/8	10	52
9643	4.40	200	16 12 10	10	59
9644	5.70	300, 500	18 13 11/16	5	46
9645	7.60	750, 1000	20 16 3/8	5	57

**Angle Type Hood and Reflector with Keyless Lamp Holder**

Angle type hoods are cast iron. Tapped 1/2 inch standard; 3/4 inch when specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES	Std. Pkg.	Wt., Lbs.
			Diam. Height		
3641	\$3.60	60, 100	12 11 1/16	10	52
3642	3.80	150	14 12 3/16	10	59
3643	4.40	200	16 13 5/16	10	66
3644	5.70	300, 500	18 15	5	48
3645	7.60	750, 1000	20 17 1/16	5	59

Rigid keyless lamp holders are regularly supplied but when specified the following lamp holders can be furnished: Pull chain, medium base only, 80 cents advance list; self-locking, medium base only, 50 cents advance list; shock absorbing, medium or mogul base, 10 cents advance list.

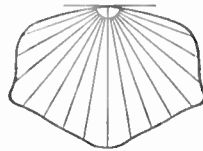
**Extra Reflectors**

Fixtures, complete except for hoods, are available for easy maintenance of the system. When ordering, specify catalogue number of complete fixture with the explanation "Less Hood," and deduct 80 cents from list price.

**Type 79 Benjamin Shallow Bowl Reflectors**

Porcelain Enameled Steel

National Electrical Code Standard



Characteristic Distribution Curve

The reflector is seamless porcelain enameled steel with Benjamin Type 79 bayonet-lock coupling. The reflector includes a N. E. C. standard porcelain lamp holder and a 3-point bayonet plate.

One type of terminal base is standard in both ceiling and pendent type hoods and accommodates reflectors with medium or mogul base lamp holders.

Three types of hoods are provided, ceiling type outlet box, pendent, and angle side entrance. Outlet type hood has one hole slotted for easy attachment.

Reflectors are porcelain enameled steel; green outside, white inside. Hood and bayonet plate are cadmium-plated to prevent corrosion.

**Pendent Hood and Reflector with Keyless Lamp Holder**

Pendent hoods are cast iron, tapped 1/2 inch standard; 3/4 inch if specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
7437	\$3.50	50, 60	12	8 3/8	10	40
7421	3.60	75, 100	12	9 1/4	10	40
7423	3.80	150	14	10 3/8	10	43
7425	4.40	200	16	11 1/4	10	55
7509	5.70	300, 500	18	13	5	49

**Ceiling Type Hood and Reflector with Keyless Lamp Holder**

Ceiling type hoods are of cast iron and fit 4-inch standard outlet boxes of 1 1/2 inches or more depth.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
9437	\$3.50	50, 60	12	7 7/8	10	43
9421	3.60	75, 100	12	8 3/4	10	43
9423	3.80	150	14	9 7/8	10	46
9425	4.40	200	16	10 3/4	10	58
9509	5.70	300, 500	18	12 1/2	5	52

**Angle Type Hood and Reflector with Keyless Lamp Holder**

Angle type hoods are cast iron. Tapped 1/2 inch standard; 3/4 inch when specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
3437	\$3.50	50, 60	12	9 3/16	10	50
3421	3.60	75, 100	12	10 1/16	10	50
3423	3.80	150	14	11 3/16	10	53
3425	4.40	200	16	12 1/16	10	65
3509	5.70	300, 500	18	13 3/4	5	54

Prices do not include wires or lamps.

**Extra Reflectors**

Fixtures, complete, except for hoods, are available for easy maintenance of the system. When ordering, specify catalogue number of complete fixture with the explanation "Less Hood," and deduct 80 cents from list price.

**Lamp Holders**

Pull chain lamp holders with straight inner pull for medium base only, 80 cents advance list. When ordering suffix regular reflector number with "PUL."

Self-locking lamp holder prevents unauthorized lamp removal, medium base only, 50 cents advance list. When ordering, suffix regular reflector number with "LOK."

Shock-absorbing lamp holders lengthen life, medium or mogul base. 10 cents advance list. When ordering suffix regular reflector number with "SHB."

**Type 79 Benjamin Flat Cone Reflectors**

Porcelain Enameled Steel



No. 7402  
150-Watt



Characteristic Distribution Curve

The reflector is seamless porcelain enameled steel with Benjamin Type 79 bayonet-lock coupling. The reflector includes an N. E. C. standard porcelain lamp holder and a 3-point bayonet plate.

One type of terminal base is standard in both ceiling and pendent type hoods and accommodates reflectors with medium or mogul base lamp holders.

Three types of hoods are provided, ceiling type outlet box, pendent and angle side entrance. Outlet type hood has one hole slotted for easy attachment.

Reflectors are porcelain enameled steel; green outside, white inside. Hood and bayonet plate are cadmium-plated to prevent corrosion.

**Pendent Hood and Reflector with Keyless Lamp Holder**

Pendent hoods are cast iron, tapped 1/2 inch standard; 3/4 inch if specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
7411	\$3.60	75, 100	14	8 1/16	10	45
7402	3.80	150	16	9 1/2	10	53
7403	4.40	200	18	10 3/8	10	59

**Ceiling Type Hood and Reflector with Keyless Lamp Holder**

Ceiling type hoods are of cast iron and fit 4-inch standard outlet boxes.

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
9411	\$3.60	75, 100	14	8 1/16	10	45
9402	3.80	150	16	9	10	53
9403	4.40	200	18	9 7/8	10	59

**Angle Type Hood and Reflector with Keyless Lamp Holder**

Angle type hoods are cast iron, 2-piece construction, and allow reflector to be rotated and locked at any desired position by a set screw. Tapped 1/2 inch standard; 3/4 inch when specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Wt., Lbs.	
			Diam.	Height	Pkg.	Std. Pkg.
3411	\$3.60	75, 100	14	9 3/8	10	55
3402	3.80	150	16	10 5/16	10	63
3403	4.40	200	18	11 3/16	10	69

Prices do not include wires or lamps.

**Extra Reflectors**

Fixtures, complete, except for hoods, are available for easy maintenance of the system. When ordering, specify catalogue number of complete fixture with the explanation "Less Hood," and deduct 80 cents from list price.

**Lamp Holders**

Pull chain lamp holders with straight inner pull for medium base only, 80 cents advance list. When ordering suffix regular reflector number with "PUL."

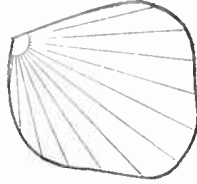
Self-locking lamp holder prevents unauthorized lamp removal, medium base only, 50 cents advance list. When ordering, suffix regular reflector number with "LOK."

Shock-absorbing lamp holders lengthen lamp life, medium or mogul base. 10 cents advance list. When ordering suffix regular reflector number with "SHB."



## Type 79 Benjamin Symmetrical Angle Reflectors

Porcelain Enameled Steel



Characteristic Distribution Curve

The reflector is seamless porcelain enameled steel with Benjamin Type 79 bayonet-lock coupling. The reflector includes a N.E.C. standard porcelain lamp holder and a 3-point bayonet plate.

One type of terminal base is standard in both ceiling and pendant type hoods and accommodates reflectors with medium or mogul base lamp holders.

Three types of hoods are provided, ceiling type outlet box, pendant and angle side entrance. Outlet type hood has one hole slotted for easy attachment.

Reflectors are porcelain enameled steel; green outside, white inside. Hood and bayonet plate are cadmium-plated to prevent corrosion.

### Pendant Hood and Reflector with Keyless Lamp Holder

Pendant hoods are cast iron, tapped 1/2 inch standard; 3/4 inch if specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES Diam. Height	Std. Pkg.	Wt., Lbs. Std. Pkg.
7541	\$3.25	50, 100	8 10 3/4	10	28
7542	3.75	150, 200	10 13 7/16	10	35
7543	5.35	300, 500	12 16 13/16	5	27

### Ceiling Type Hood and Reflector with Keyless Lamp Holder

Ceiling type hoods are of cast iron and fit 4-inch standard outlet boxes.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES Diam. Height	Std. Pkg.	Wt., Lbs. Std. Pkg.
9541	\$3.25	50, 100	8 10 3/4	10	29
9542	3.75	150, 200	10 12 3/16	10	36
9543	5.35	300, 500	12 16 3/16	5	28

### Angle Type Hood and Reflector with Keyless Lamp Holder

Angle type hoods are cast iron. Tapped 1/2 inch standard; 3/4 inch when specified.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES Diam. Height	Std. Pkg.	Wt., Lbs. Std. Pkg.
3541	\$3.25	50, 100	8 11 1/16	10	39
3542	3.75	150, 200	10 14 1/4	10	46
3543	5.35	300, 500	12 17 3/8	5	33

Prices do not include wires or lamps.

### Extra Reflectors

Fixtures, complete, except for hoods, are available for easy maintenance of the system. When ordering, specify catalogue number of complete fixture with the explanation "Less Hood," and deduct 80 cents from list price.

### Lamp Holders

Pull chain lamp holders with straight inner pull for medium base only, 80 cents advance list. When ordering suffix regular reflector number with "PUL."

Self-locking lamp holder prevents unauthorized lamp removal, medium base only, 50 cents advance list. When ordering, suffix regular reflector number with "LOK."

Shock-absorbing lamp holders lengthen lamp life, medium or mogul base, 10 cents advance list. When ordering suffix regular reflector number with "SHB."

## Type 79 Benjamin Elliptical Angle Reflectors

Porcelain Enameled Steel

National Electrical Code Standard



Exclusive Benjamin principle permits reflector together with lamp, to be taken down with one simple movement, for easy cleaning.

Each unit consists of two separable assemblies—a hood with a wiring terminal base and a reflector with a lamp holder and attaching plate.

Automatic polarization is provided by the circular contact design and contact may be made at any point where bayonet plate can be inserted in hood.

Reflector is porcelain enameled steel, green outside, white inside; with Type 79 bayonet-lock coupling. Reflector includes a porcelain lamp holder and a 3-point bayonet plate. Angle of cut off is 17 1/2°.

One type of terminal base is standard in both ceiling and pendant type hoods and accommodates reflectors with medium or mogul base lamp holders.

Three types of hoods are provided, ceiling type outlet box, pendant and angle side entrance.

### Pendant Type Hood and Reflector with Keyless Lamp Holder

Pendant hoods are cast iron. Hoods for medium base reflectors tapped 1/2-inch standard; 3/4-inch, if specified. Hoods for mogul base reflectors tapped 3/4-inch standard.

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.			Std. Pkg.	Wt., Lbs. Std. Pkg.
			Width	Depth	Height		
7522	\$3.80	75, 100	13 1/8	8 7/8	14 1/16	10	54
7525	4.50	150	13 1/8	8 7/8	15 1/16	10	56
7526	5.10	200	16 3/8	11 1/8	17 13/16	10	68
7537	9.10	300, 500	19 7/8	13 7/8	21 1/16	5	40
7538	10.10	750, 1000	19 7/8	13 7/8	22 1/16	2	27

### Ceiling Type Hood and Reflector with Keyless Lamp Holder

These hoods are cast iron and fit 4-inch standard octagonal and round outlet boxes of 1 1/2 inches or more depth.

Cat. No.	Each	Size Lamp Watts	Width	Depth	Height	Std. Pkg.	Wt., Lbs. Std. Pkg.
9522	\$3.80	75, 100	13 1/8	8 7/8	13 15/16	10	60
9525	4.50	150	13 1/8	8 7/8	14 15/16	10	62
9526	5.10	200	16 3/8	11 1/8	17 3/16	10	74
9537	9.10	300, 500	19 7/8	13 7/8	20 15/16	5	43
9538	10.10	750, 1000	19 7/8	13 7/8	21 1/16	2	28

### Angle Type Hood and Reflector with Keyless Lamp Holder

Angle type hoods are cast iron. Hoods for medium base reflectors tapped 1/2-inch standard; 3/4-inch when specified. Hoods for mogul base reflectors tapped 3/4-inch standard.

Cat. No.	Each	Size Lamp Watts	Width	Depth	Height	Std. Pkg.	Wt., Lbs. Std. Pkg.
3522	\$3.80	75, 100	13 1/8	8 7/8	15 1/4	10	70
3525	4.50	150	13 1/8	8 7/8	16 1/4	10	72
3526	5.10	200	16 3/8	11 1/8	19 5/8	10	84
3537	9.10	300, 500	19 7/8	13 7/8	22 1/4	5	48
3538	10.10	750, 1000	19 7/8	13 7/8	22 3/4	2	33

Prices do not include wires or lamps.

### Extra Reflectors

Fixtures, complete, except for hoods, are available for easy maintenance of the system. When ordering, specify Cat. No. of complete fixture with explanation, "Less Hood," and deduct 80 cents from list price.

### Lamp Holders

Pull chain lamp holders have the exclusive Benjamin Inner Pull feature in which the chain comes straight down inside the reflector. Furnished with any of the medium base fixtures listed above at an 80 cents advance in fixture list price. When ordering, suffix regular fixture number with "PUL."

Self-locking lamp holders prevent unauthorized lamp removal. Furnished with any of medium base fixtures listed above at 50 cents advance in fixture list price. When ordering, suffix regular fixture number with "LOK."

**No. 9 Benjamin Type 79 Ceiling Type Hoods**

National Electrical Code Standard  
1500 Watts, 600 Volts

The No. 9 Hood is standard for all Benjamin Type 79 ceiling type reflector fixtures. It incorporates a universal type of wiring terminal base which takes interchangeably any medium or mogul base Type 79 reflector.



Hood is cast iron, cadmium-plated. Body of wiring terminal base is of porcelain. Hood fits 4-inch standard outlet boxes of 1½ inches or more depth. One screw hole in hood is slotted for easy attachment.

Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
9	\$.80	10	16

**Type 79 Benjamin Hoods**

National Electrical Code Standard  
1500 Watts, 600 Volts



No. 3

Standard for Benjamin Type Reflector Fixtures. Has universal type of wiring terminal base which takes interchangeably any medium or mogul base Type 79 Reflector. Hood is cast iron, cadmium-plated; body of terminal base, porcelain. Hood tapped for ½-inch conduit standard; ¾-inch when specified at same price.

**No. 3 Angle Type**

Used to bring wires in at right angles to reflector.

Standard package, 10; weight, 20 pounds.  
No. 3.....each \$.80



No. 7

**No. 7 Pendant Type**

Standard package, 10; weight, 14 pounds.  
No. 7.....each \$.80

**No. 2760 Benjamin Keyless Mogul Base Lamp Holder Assemblies**

National Electrical Code Standard  
1500 Watts, 600 Volts



This is standard equipment for Benjamin Mogul Base Type 79 Reflector Equipment.

Consists of a porcelain keyless mogul base socket and Type 79 bayonet attaching plate with composition gasket and attaching screws.

Plate and screw are cadmium-plated.

Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
2760	\$1.10	10	13½

**No. 2751 Benjamin Keyless Medium Base Lamp Holder Assemblies**

National Electrical Code Standard

660 Watts, 600 Volts



This is standard equipment for Benjamin Medium Base Type 79 Reflector Equipment. Consists of a one-piece porcelain keyless medium base lamp holder and type 79 bayonet attaching plate with composition gasket and attaching screws.

Plate and screws are cadmium-plated.

Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
2751	\$.55	10	8½

**No. 2762 Benjamin Shock Absorbing Mogul Base Lamp Holder Assemblies**

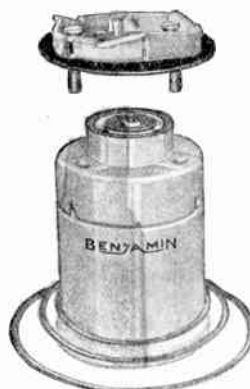
National Electrical Code Standard  
1500 Watts, 600 Volts

The shock absorbing lamp holder lengthens the lamp life by guarding the lamp filament against vibration, jars and shock.

Consists of a keyless mogul base lamp holder, Type 79 bayonet attaching plate, composition gasket and attaching screws.

Bayonet plate and screws are cadmium-plated.

Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
2762	\$1.20	10	13½



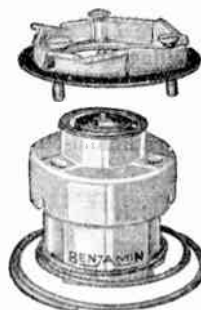
**No. 2753 Benjamin Shock Absorbing Medium Base Lamp Holder Assemblies**

National Electrical Code Standard  
660 Watts, 600 Volts

The Benjamin shock absorbing lamp holder lengthens lamp life by guarding the lamp filament against vibration, jars and shock. For use with all type 79 medium base reflector equipment.

A 1-piece porcelain medium base keyless lamp holder, with shock absorbing spring and a Type 79 bayonet attaching plate with composition gasket and attaching screws. Plate and attaching screws cadmium-plated.

Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
2753	\$.65	10	11



**No. 2752 Benjamin Pull Chain Medium Base Lamp Holder Assemblies**

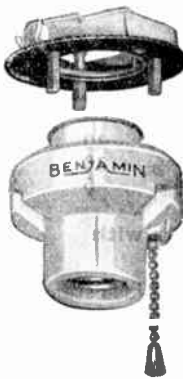
National Electrical Code Standard  
660 Watts, 250 Volts

This pull chain lamp holder with the Benjamin Inner Pull Feature, provides a reliable method of individually controlling Benjamin Medium Base Type 79 Reflector Equipment.

Consists of 1-piece medium base porcelain lamp holder and a Type 79 bayonet attaching plate with composition gasket and attaching screws.

Plate and screws cadmium-plated.

Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
2752	\$1.35	10	8½



**No. 2754 Benjamin Self-Locking Medium Base Lamp Holder Assemblies**

National Electrical Code Standard  
660 Watts, 600 Volts

The socket automatically locks as the lamp is screwed in.

Prevents unauthorized removal of lamps. May be used in all medium base Type 79 reflector equipment.

Consists of a medium base porcelain lamp holder with self-locking feature, bayonet attaching plate, composition gasket and screws. Screws and plate are cadmium-plated.

Cat. No.	Each	Std. Pkg.	Wt., Lbs. Std. Pkg.
2754	\$1.05	10	11½

**Key Only for Releasing Lamp**  
1399 1.00 1 ½



SELF ACTING LAMP LOCK  
INSERT KEY HERE TO RELEASE LAMP

## Benjamin Reflector Sockets Porcelain Enameled Steel

USES.—Each type of reflector performs a definite service. See individual description immediately above each listing.

REFLECTORS.—Seamless Crysteel porcelain enameled steel. They are weather-proof and may be used for indoor and outdoor service.

SOCKETS.—National Electrical Code Standard. Sockets are 2-piece porcelain, keyless, easy-to-wire type with Benjamin Lamp Grip which prevents loosening and falling of lamps under vibration.

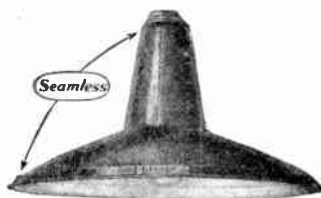
Locking Type Socket (LOK) will be supplied with reflectors up to and including 200 watt sizes at an advance of 50 cents each. Key, No. 1399, at \$1.00 each. Pull chain socket (PUL) with lamp grip will be supplied with reflectors up to and including 200 watt sizes at an advance of 80 cents. Shock-absorbing socket (SHB) at 10 cents additional to list price.

FITTINGS.—Reflectors are supported by heavy cast fitting, independent of socket, making the whole fixture uniformly strong.

TAPPING.—Fitting tapped for 1/2-inch iron pipe regularly furnished; 3/4-inch tapping or 1/2-inch insulating bushing, No. 1265 for drop cord use, furnished if specified at no advance in price.

FINISH.—Reflectors are Benjamin green porcelain enamel outside; white inside.

## Benjamin Shallow Bowl Reflector Sockets Porcelain Enameled Steel



No. 5423  
150-Watt



Characteristic  
Distribution Curve

For general illumination where the lighting requirement is of an extensive character and where eye shielding is not considered of first importance.

Cat. No.	Each	Size of Lamps Watts	DIMENS., IN.		Std. Pkg.	Wt. Lbs.
			Diam.	Height		
5437	\$3.20	50, 60	12	6 <sup>3</sup> / <sub>16</sub>	10	2 <sup>1</sup> / <sub>4</sub>
5421	3.30	75, 100	12	7 <sup>3</sup> / <sub>8</sub>	10	2 <sup>1</sup> / <sub>4</sub>
5423	3.50	150	14	8 <sup>1</sup> / <sub>2</sub>	10	2 <sup>3</sup> / <sub>4</sub>
5425	4.10	200	16	9 <sup>1</sup> / <sub>16</sub>	10	3 <sup>1</sup> / <sub>4</sub>
5509	5.30	300, 500	18	11 <sup>1</sup> / <sub>8</sub>	5	3 <sup>3</sup> / <sub>8</sub>

## Benjamin Dome Reflector Sockets R. L. M. Standard



No. 5642, 150-Watt

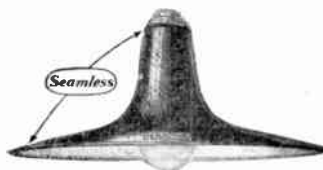


Characteristic  
Distribution Curve

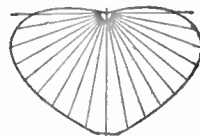
For general illumination where it is desired to light both upright and flat surfaces and to eliminate sharp shadows by good diffusion.

Cat. No.	Each	Size of Lamp Watts	DIMENS., IN.		Std. Pkg.	Wt. Lbs.
			Diam.	Height		
5640	\$3.20	50, 60	12	7 <sup>3</sup> / <sub>16</sub>	10	32
5641	3.30	75, 100	12	7 <sup>15</sup> / <sub>16</sub>	10	33
5642	3.50	150	14	9 <sup>1</sup> / <sub>16</sub>	10	41
5643	4.10	200	16	10 <sup>3</sup> / <sub>16</sub>	10	49
5644	5.30	300, 500	18	11 <sup>15</sup> / <sub>16</sub>	5	39
5645	7.20	750, 1000	20	14 <sup>3</sup> / <sub>4</sub>	5	49

## Benjamin Flat Cone Reflector Sockets Porcelain Enameled Steel



No. 5402  
150-Watt



Characteristic  
Distribution Curve

For broad extensive light distribution—for such places as lumber yards, railroad terminal yards and street lighting.

Cat. No.	Each	Size of Lamps Watts	DIMENS., IN.		Std. Pkg.	Wt. Lbs.
			Diam.	Height		
5431	\$3.30	50, 60	14	5 <sup>1</sup> / <sub>16</sub>	10	23 <sup>3</sup> / <sub>8</sub>
5401	3.30	75, 100	14	6 <sup>1</sup> / <sub>16</sub>	10	2 <sup>1</sup> / <sub>2</sub>
5402	3.50	150	16	7 <sup>3</sup> / <sub>8</sub>	10	3 <sup>1</sup> / <sub>8</sub>
5403	4.10	200	18	8 <sup>3</sup> / <sub>2</sub>	10	3 <sup>3</sup> / <sub>4</sub>

## Benjamin Symmetrical Angle Socket-Reflector

For illuminating places where the light must come from the side.

REFLECTORS.—Seamless Crysteel porcelain enameled steel. They are weather-proof and may be used for indoor and outdoor service.

SOCKETS.—Two-piece, porcelain, keyless with Benjamin lamp grip which prevents loosening and falling of lamps under vibration.

TAPPING.—Fitting tapped for 1/2-inch iron pipe regularly furnished; 3/4-inch tapping furnished if specified at no advance in price.

FINISH.—Reflectors are Benjamin green porcelain enamel outside; white inside.

## Benjamin Bowl Reflector Sockets



No. 6189, 150-Watt



Characteristic  
Distribution Curve

For general illumination where the lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.

Cat. No.	Each	Size of Lamp Watts	DIMENS., IN.		Std. Pkg.	Wt. Lbs.
			Diam.	Height		
6166	\$2.90	50, 60	7	7 <sup>3</sup> / <sub>8</sub>	10	24
6161	3.10	75, 100	8	8 <sup>3</sup> / <sub>8</sub>	10	26
6189	3.50	150	9	9 <sup>3</sup> / <sub>8</sub>	10	29
6169	3.50	200	10	10 <sup>1</sup> / <sub>2</sub>	10	29
6173	5.20	300, 500	12	11 <sup>3</sup> / <sub>8</sub>	5	21

Prices do not include wires or lamps.

Cat. No.	Each	Size of Lamp Watts	DIMENSIONS, IN.		Std. Pkg.	Wt. Lbs.
			Diam.	Height		Each
5541	\$2.95	50, 60, 75, 100	8	8 <sup>1</sup> / <sub>16</sub>	10	1 <sup>1</sup> / <sub>2</sub>
5542	3.45	150, 200	10	11 <sup>3</sup> / <sub>8</sub>	10	2
5543	4.95	300, 500	12	15	5	4



**Benjamin Elliptical Angle Reflector Sockets**

Porcelain Enameled Steel



No. 5525  
Side View



No. 5525  
Front View

The Benjamin Elliptical Angle Reflector Socket is used in places in industrial plants where lighting requirements cannot be satisfied with overhead illumination alone, as well as cases requiring illumination from the side.

Reflectors are of porcelain enameled steel and are weather resisting. Socket is N. E. C. Standard, keyless two-piece porcelain easy-to-wire type with lamp grip which prevents lamps from becoming loosened by wind or vibration. Nos. 5522, 5525 and 5526, tapped for 1/2-inch pipe; 3/4-inch if specified. Nos. 5537, 5538 tapped for 3/4-inch iron pipe.

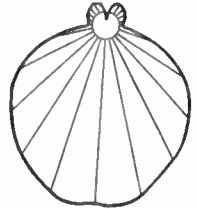
Cat. No.	Each	Size of Lamp Watts	DIMENSIONS, INCHES		Net Weight Standard Pounds	Standard Package
			Diam.	Height		
5522	\$3.50	75, 100	8 7/8 x 1 3/4	12 5/8	2 3/4	10
5525	4.20	150	8 7/8 x 1 3/4	13 1/2	3	10
5526	4.80	200	11 1/2 x 1 6/8	16	3 5/8	10
5537	8.70	300, 500	13 7/8 x 1 9/8	19 5/8	3 3/4	5
5538	9.70	750, 1000	13 7/8 x 1 9/8	20 1/4	4 1/8	2

Prices do not include wires or lamps.

**Benjamin Threaded Hood Glassteel Diffusers**  
Complete with Hood, Reflector and Globe



No. 26300, 200-Watt



In addition to the accepted merits of the porcelain enameled steel reflector this combination offers the following advantages:—

1. Light is permitted to reach the ceiling which softens the contrast between the working plane and the space above the reflector. This increases eye comfort.
2. The brightness of the unit is reduced to about 3 or 5 candlepower per square inch which further reduces eye effort resulting from both direct and reflected glare.
3. Protection of the glass from excess breakage because surrounded by the steel reflector.
4. Exceptionally good appearance of the lighted unit.
5. Reflection and diffusion favorable to the needs of the daylight lamp.

The total light output of the Glassteel Diffuser with a clear lamp is equal to that of an R L M reflector and bowl-enameled lamp of corresponding size.

Diffuser directs light on ceiling (about 7 per cent) and also more light on higher angles.

Comparison of corresponding brightness favors the Glassteel equipment, which is 3 or 5 against 15 candlepower per square inch of the R L M reflector and bowl-enameled lamp.

Hood is of porcelain enameled steel with Benjamin R R Thread.

Type X supporting fitting, tapped for 1/2-in. conduit.

Porcelain 2-piece socket, easy-to-wire type.

Reflector is porcelain enameled steel in two sizes with Type R R Threaded Neck permitting easy removal of the reflector. Reflector has six apertures at top for the passage of light to the ceiling. It also embodies a spring globe holder facilitating easy removal of globe for cleaning.

White porcelain enamel with small neat dark blue bead at bottom edge of both hood and reflector.

**Pendent Hood Type with Keyless Socket**

With X style fitting; tapped 1/2 inch standard; 3/4 inch when specified.

Size Lamp Watts	DIMEN. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	With Opal Glass Globe		With Daylight Glass Globe	
				Cat. No.	Each	Cat. No.	Each
150, 200	18 1 1/4	4	50	26300	\$9.00	26310	\$9.50
300, 500	20 1 3/8	4	60	26302	12.50	26312	13.25

**Ceiling Hood Type with Keyless Socket**

Hood is for mounting direct to, and covering, a standard 4-inch outlet box.

150, 200	18 1 1/4	4	50	26304	\$9.00	26314	\$9.50
300, 500	20 1 3/8	4	60	26306	12.50	26316	13.25

**Benjamin Special Diffuser Reflectors**

A diffuser reflector consisting of a dome reflector without apertures on the top and with a diffusing globe on a spring holder.

Reflectors are of porcelain enameled steel with either pendent or outlet type box of R R hood. Reflectors are attached to hood by means of heavy copper screw thread on reflector neck which makes removal for cleaning easy.

Reflectors finished in white porcelain enamel outside and inside, with black beaded edge. Hoods are white porcelain enameled.

**Pendent Hood Type**

Tapped for 1/2-inch conduit.

Size Lamp Watts	Diam. In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	With Opal Glass Globe		With Daylight Glass Globe	
				Cat. No.	Each	Cat. No.	Each
150, 200	18	4	23	26350	\$9.00	26360	\$9.50
300, 500	20	4	30	26352	12.50	26362	13.25

**Ceiling Hood Type**

Attaches to 4-inch standard outlet boxes.

150, 200	18	4	23	26354	\$9.00	26364	\$9.50
300, 500	20	4	30	26356	12.50	26366	13.25

**Benjamin Parabolites**

Porcelain Enameled Steel

Characteristic Distribution of Curve



No. 1235, 150-Watt



Plane Through Major Axis



Plane Through Minor Axis

The Benjamin Parabolite is a specially designed fixture for the illumination of aisles, platforms, and other long narrow areas indoors or outdoors.

The reflector is porcelain enameled steel, white inside, and green outside. The socket is porcelain, keyless two-piece, easy-to-wire type with lamp grip. The separable X fitting is regularly tapped 1/2-inch and will be tapped 3/4-inch if specified, at no advance in price. The light is projected in a narrow stream with a low cut-off on each side.

Cat. No.	Size of Lamp Watts	Length	DIMENSIONS, INCHES	Std. Pkg.	Wt. Lbs.	Price Each
			Height			
1234	60, 75, 100	21	8 1/2	1	3 3/4	\$8.00
1235	150	21	9 1/4	1	3 7/8	8.80
1236	200	21	10 1/8	1	4 1/8	9.30

Prices do not include wires or lamps.

**Benjamin Shock Absorber Suspension Fittings**

Made of galvanized iron.



Cat. No.	Size Tapped In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
6030	1/2	10	9	\$9.00

## Benjamin Threaded Hood Fixtures Sturdox Fixtures

Made to withstand service conditions. Two-piece socket of heavy porcelain is unusually well constructed and simple to wire.

Reflectors may be interchanged without disturbing wiring as every Sturdox reflector fits every Sturdox hood.

### Type RR Equipment

Suitable for use around railroad yards, steel mills and other industrial plants where conditions require the most rugged and sturdy equipment.

The Type RR thread is the basis of railroad equipment. It allows easy removal of reflectors for cleaning and interchangeability among the various types and sizes of reflectors. Hoods are supplied in cast iron or porcelain enameled, in either pendent or outlet box type, and are threaded to accommodate any of the RR threaded neck reflectors shown to the right. Cast hoods are finished in green paint enamel and steel hoods in green porcelain enamel.

To obtain price of complete fixture add price of hood to price of reflector selected.

### Pendent Cast Hoods with Sockets

Tapped for 1/2-inch i.p. standard; 3/4-inch, if specified.

#### Sturdox Hood

#### Type RR Hood



No. 9200



No. 26050

Cat. No.	Each	Base	Wt. Lbs.		Cat. No.	Each	Base	Wt. Lbs.	
			Std. Pkg.	Std. Pkg.				Std. Pkg.	Std. Pkg.
9200	\$1.30	Med.	10	21	26050	\$2.30	Med.	10	25 1/2
9205	1.80	Mogul	5	12	26055	2.70	Mogul	5	13 1/2

### Pendent Steel Hoods with Sockets

Tapped for 1/2-inch i.p. standard; 3/4-inch, if specified.



No. 9210



No. 26030

9210	\$1.10	Med.	10	11 1/2	26030	\$1.95	Med.	10	12 1/2
9215	1.60	Mogul	5	7	26035	2.35	Mogul	5	7 1/2

### Outlet Box Cast Hoods with Sockets

Fits 4-inch standard outlet box.



No. 9220



No. 26045

9220	\$1.50	Med.	10	24	26045	\$2.40	Med.	10	23 1/2
9225	2.00	Mogul	5	14 1/2	26049	2.80	Mogul	5	12 1/2

### Outlet Box Steel Hoods with Sockets

Fits 4-inch standard outlet box.



No. 9230



No. 26025

9230	\$1.10	Med.	10	11 1/2	26025	\$1.95	Med.	10	12
9235	1.60	Mogul	5	7	26029	2.35	Mogul	5	7

### Sockets

**SHOCK-ABSORBING SOCKETS.**—Keyless, medium or mogul, add 10 cents to list price; when ordering, suffix Cat. No. of hood with "SHB." (Sturdox hoods only.)

**PULL CHAIN SOCKETS.**—Keyless, medium base only, 80 cents advance in list; suffix Cat. No. of hood with "PUL."

**SELF-LOCKING SOCKETS.**—Keyless, medium base only, 50 cents advance in list; suffix Cat. No. of hood with "L.O.K."

## Benjamin Threaded Hood Fixtures Reflectors for Sturdox and Type RR R L M Dome Reflectors



No. 26014

Without the use of tools, reflectors may be removed and given a thorough washing. They are replaced just as easily.

Every threaded reflector will fit any threaded hood in the Benjamin Sturdox and Type RR Lines.

Finish, outside of reflector is Benjamin green, inside is white porcelain enamel.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam.	Height		
26012	\$2.20	75, 100	12	4 3/8	10	20 1/2
26014	2.40	150	14	5 5/16	10	29
26016	3.00	200	16	6 1/16	10	35
26018	3.70	300, 500	18	8 1/16	5	32 1/2
26020	5.60	750, 1000	20	11	5	38



No. 26416

### Shallow Bowl Reflectors

Best adapted to the lighting of yards, warehouses and platforms, or where it is desired that one unit light a large area.

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam.	Height		
26412	\$2.10	50	12	2 1/2	10	18
26414	2.40	75, 100, 150	14	3 3/8	10	23
26416	3.00	200	16	4 3/8	10	31 1/2
26418	3.70	300, 500	18	5 3/4	5	25 1/2



No. 26109

### Bowl Reflectors

For general illumination where the lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam.	Height		
26108	\$2.00	75, 100	8	5	10	16 1/2
26109	2.40	150	9	5 13/16	10	17 1/2
26110	2.40	200	10	6 15/16	10	18
26112	3.60	300, 500	12	7 3/4	5	15 1/2



No. 26114

### Fluted Bowl Reflectors

The only type of porcelain enameled steel reflector having an intensive distribution. It is used therefore for high mounting, i. e., 16 feet and upward.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam.	Height		
26114	\$3.60	300, 500	14	8 5/16	5	21
26117	8.10	750, 1000	18	12	5	34 1/2



No. 26212

### Symmetrical Angle Reflectors

For illuminating places where the light must come from the side.

Cat. No.	Each	Size Lamp Watts	DIMEN., INCHES		Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam.	Height		
26210	\$2.35	150, 200	10	8 1/4	10	21
26212	3.35	300, 500	12	12	5	19 1/2
26214	6.00	750, 1000	14	15 3/8	5	27

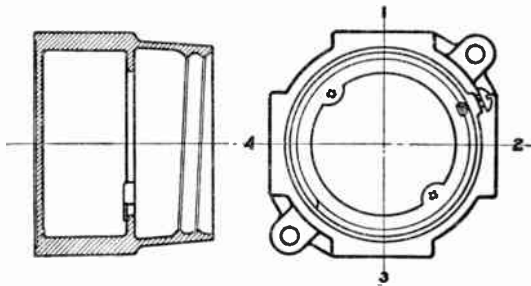
Prices are for reflectors only.

**No. 26041 Benjamin Combination Outlet Boxes and Type RR Hoods**



This fixture combines a heavy duty cast iron outlet box and Type RR threaded hood with medium base keyless socket. For use with all medium base Type RR and Sturdox reflectors. Recommended for use in locations in which distance between ceiling and reflector must be reduced to minimum in order to provide

maximum clearance between reflector and floor. One-piece molded composition socket base; metal parts not of brass, cadmium-plated; Green paint enameled casting. Release of two screws permits removal of baffle plate and socket as a unit, which gives access to socket wiring terminals and provides an opening of 2 5/8 inch diameter.



Section and Face Plan of Outlet Box-Hood Showing Code Nos. to be Used in Specifying Tapping

Not tapped; can be tapped, at no extra charge, for 1/2, 3/4 or 1-inch conduit, 1, 2, 3 or 4 ways. Use code number shown on diagram to specify location of outlets. For example: No. 1, blank; No. 2, 1/2"; No. 3, blank; No. 4, 1/2". Diameter, 4 3/16 inches; height, 3 3/16 inches.

Standard package, 10; shipping weight, 45 pounds. No. 26041, without Wires or Lamps.....each \$1.75

**Benjamin Sockets for Reflector Fixtures**

National Electrical Code Standard



No. 4651



No. 2661

**Keyless Medium Base Socket Assembly—Porcelain**  
660 Watts, 600 Volts

For socket-reflector and hooded store fixtures.

No. 4651 socket assembly is standard equipment on Benjamin Medium Base Socket-Reflectors and hooded store fixtures. Nos. 4650 and 4665 are optional equipment for the same fixtures.

Cat. No.	Each	Size Tapped In.	Description	Std. Pkg.	Wt., Lbs. Std.
4651	\$1.05	1/2	Socket with X Type Fitting..	10	9 1/2
4650	1.05	3/8	Socket with X Type Fitting..	10	11 1/2
4665	1.05	3/4	Socket with X Type Fitting..	10	9
88	.60	..	Socket Only (No Fittings)....	10	8

**Pull Chain Medium Base Socket Assembly**  
Molded Composition  
660 Watts, 250 Volts

For socket-reflector equipment, Type RR, Sturdox hoods.

2661	\$1.85	1/2	With Stirrup, X Type Fitting.	10	8
2667	1.85	3/8	With Stirrup, X Type Fitting.	10	7 1/2
2664	1.40	..	Socket with Stirrup Only.....	10	5 1/2

**Benjamin Shock Absorbing Sockets**

For Reflector Fixtures

Keyless—Medium Base  
660 Watts, 600 Volts



No. 4676

This socket is equipped with the Benjamin shock absorber and is designed for replacement on Benjamin lighting equipment. The styles of equipment on which the various sockets are to be used are shown by the group headings.

For Reflector-Socket Equipment

Cat. No.	Each	Tapped Inches	Description	Std. Pkg.	Wt., Lbs. Std.
4676	\$1.15	1/2	Socket with X Type Fitting.....	10	8 1/2
4678	1.15	3/8	Socket with X Type Fitting.....	10	8 1/2
4677	1.15	3/4	Socket with X Type Fitting.....	10	8 1/2
4675	.70	..	Socket Only, with Spring.....	10	3 3/4

For Sturdox Hoods and Type RR and Glassteel Pendent Steel Hoods

4680	\$1.15	1/2	Socket with X Type Fitting.....	10	9
4681	1.15	3/4	Socket, X Type Fitting.....	10	9

**Benjamin Shock Absorbing Sockets**

For Reflector Fixtures—Keyless—Mogul Base

1500 Watts, 600 Volts

Equipped with the Benjamin shock absorber and designed for replacement on Benjamin lighting equipment.

For Reflector Socket Equipment

Cat. No.	Each	Tapped In.	Description	Std. Pkg.	Wt., Lbs. Std.
4670	\$1.60	1/2	With X Type Fitting 10	10 1/2	10 1/2
4672	1.60	3/4	With X Type Fitting 10	10 1/2	10 1/2
4578	1.15	..	Socket Only, with Spring.....	10	6 3/4

For Sturdox Hoods and Type RR and Glassteel Pendent Steel Hoods

4670	\$1.60	1/2	With X Type Fitting 10	10 1/2	10 1/2
4672	1.60	3/4	With X Type Fitting 10	10 1/2	10 1/2



No. 4670

**Benjamin Shock Absorbing Sockets**

For Reflector Fixtures

Self-Locking—Medium Base  
660 Watts, 600 Volts



SELF-ACTING LAMP LOCK  
INSERT KEY HERE TO RELEASE LAMP  
No. 4548

Equipped with the Benjamin shock absorber and designed for replacement on Benjamin lighting equipment.

This socket locks automatically when a lamp is screwed in. The key must be used to remove lamp.

Key, Cat. No. 1399, is furnished only with an original installation of Benjamin Self-Locking Sockets.

Additional keys may be purchased only on order of an executive officer or member of a firm having such an installation.

For Reflector-Socket Equipment

Cat. No.	Each	Tapped Inches	Description	Std. Pkg.	Wt., Lbs. Std.
4548	\$1.65	1/2	Socket and X Type Fitting.....	10	8 3/4
4549	1.65	3/8	Socket and X Type Fitting.....	10	8 3/4
4550	1.65	3/4	Socket and X Type Fitting.....	10	8 3/4
4551	1.20	..	Socket Only, with Spring.....	10	4 1/2
1399	1.00	..	Key Only.....	1	1 1/8

For All Sturdox Hoods and Type RR Pendent Steel Hoods

4552	\$1.65	1/2	Socket and XR Type Fitting....	10	9 1/4
4553	1.65	3/4	Socket and XR Type Fitting....	10	9 1/4
1399	1.00	..	Key Only.....	1	1 1/8



## Benjamin 2-piece Locking Sockets

Medium Base—660 Watts, 600 Volts

Locks lamp in place automatically without use of key. Key is needed only when a lamp must be withdrawn. No. 586 may be substituted for body of No. 88 sockets now in use without interference with wiring. Locking arrangement grips lamp on attempt to remove.

### For Socket-Reflector, RR Cast Hoods and RR Outlet Box Steel Hoods

Cat. No.	Each	Tapped In.	Description	Pkg. Std.	Wt., Lbs. Pkg.
4528	\$1.55	1/2	With X Fitting	10	8 3/4
4529	1.55	3/8	With X Fitting	10	8 3/4
4530	1.55	3/4	With X Fitting	10	8 3/4

### For All Sturdox and RR Pendent Steel Hoods

Cat. No.	Each	Tapped In.	Description	Pkg. Std.	Wt., Lbs. Pkg.
4532	\$1.55	1/2	With Fitting	10	8 3/4
4533	1.55	3/4	With Fitting	10	8 3/4
86	1.10	Less X Fitting, No Key	10	4 1/2	
586	.90	Locking Body.	10	3	
1399	1.00	Key.....	1	1/8	



## Benjamin Sockets for Reflector Fixtures

National Electrical Code Standard  
660 Watts, 600 Volts

### Keyless Medium Base Socket Assembly—Porcelain

For RR cast hoods and RR and Glassteel outlet box hoods.



No. 4511

Cat. No.	Each	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.
4511	\$.60	Without X Type Fitting...	10	8
4520	.30	Socket Body Element Only	10	5

Terminal base of this socket has universal feature and conversion from medium to mogul base may be made without changing wiring connections. Medium base socket referred to is No. 4520; mogul base socket element is No. 4524.

Medium socket body element removes and mogul socket body fits on same terminal base as shown by dotted lines.

## Benjamin Sockets for Reflector Fixtures

National Electrical Code Standard  
1500 Watts, 600 Volts

### Keyless Mogul Base Socket Assembly—Porcelain



No. 4657



No. 4515

### For Socket-Reflectors, Sturdox Hoods, and Type RR and Glassteel Pendent Steel Hoods

Cat. No.	Each	Size Tapped In.	Description	Std. Pkg.	Wt., Lbs. Pkg.
4657	\$1.50	1/2	With X Type Fitting...	10	12 1/2
4666	1.50	3/4	With X Type Fitting...	10	12
698	1.05	..	Without X Type Fitting.	10	10
4524	.75	..	Socket Body Element Only.....	10	8

### For Type RR Cast Hoods and Type RR and Glassteel Outlet Box Type Steel Hoods

Cat. No.	Each	Description	Std. Pkg.	Wt., Lbs. Pkg.
4515	\$1.05	Without X Type Fitting	10	10
4524	.75	Socket Body Element Only.....	10	8

## Benjamin Sockets for Reflector Fixtures

National Electrical Code Standard  
660 Watts, 600 Volts

### Keyless Medium Base Socket Assembly—Porcelain

For Sturdox hoods and RR and Glassteel pendent steel hoods. Has a universal form of terminal base making possible conversion from medium to mogul base without changing wiring connections. Medium base socket element referred to is No. 4520; mogul base socket element is No. 4524.

Medium socket body element removes and mogul socket body fits on same terminal base, as shown by dotted lines.

Standard package, 10.



No. 4505

Cat. No.	Each	Tapped In.	Description	Std. Pkg.	Wt., Lbs. Pkg.
4505	\$1.05	1/2	With X Type Fitting	10 1/2	
4509	1.05	3/4	With X Type Fitting	12 1/2	
4507	.60	..	Without X Type Fitting.....	9	
4520	.30	..	Socket Body Element	5	

## No. 1263 Benjamin Strain Relief Cord Grips



Consists of brass bushing, threaded 1/2", brass nut and washer and rubber stuffing gland. Used as a strain relief cord grip or water-tight cord bushing. For reflector fitting or hood tapped for 1/2" conduit entrance. Accommodates cord from 3/8" to 1/16."

Standard package, 10; weight, 2 pounds.  
No. 1263.....each \$ .45

## Benjamin Sockets for 3-Light Lamps

1500 Watts, 600 Volts

### Keyless Mogul Base Socket Assembly—Porcelain

This 2-piece socket can be used in any Benjamin reflector fixture regularly equipped with No. 698 Socket to convert the fixture for use with the 3-light lamps.

Has 2 center contacts and 3 plainly marked wiring terminal screws. Attaching screws are in slotted openings; can be varied from 1/2 to 1 3/4-inch centers. By using adaptor plate listed below, socket can be used in open-type floodlights.



No. 2590

Cat. No.	Each	Tapped Inches	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.
2590	\$1.50	..	Socket Only.....	10	10
2591	.20	..	Adapter Plate.....	..	..
2592	1.95	1/2	Socket with X Type Fitting	10	14
2593	1.95	3/4	Socket with X Type Fitting	10	14

## Type X Benjamin Socket Fittings

### For Socket-Reflector Equipment

These fittings are made separable for easy wiring.



No. 4653

The fitting consists of two flanges and two washers, one for either side of the reflector. By this method of construction, the socket and lamp are supported directly by the fixture stem, and the reflector is supported independently between the upper and lower flanges. This makes a weatherproof and rigid connection.

Cat. No.	Each	Tapped Inches	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.
4653	\$.45	1/2	X Type Fitting.....	10	4 1/4
4652	.45	3/8	X Type Fitting.....	10	4 1/4
4668	.45	3/4	X Type Fitting.....	10	4 1/4

## No. 3622 Outlet Box Covers

This outlet box cover is made of galvanized steel.

Designed for use with X Type fittings, for attaching Benjamin Reflector Sockets direct to the conduit box.



The cover is placed between reflector and top flange, and is provided with four bayonet slots which slip over screws on box.

No other fittings are necessary.

Fits 4-inch outlet box.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3622	20	8	\$ .15

**Benjamin 1800 Series Separable Hood Reflectors**

National Electrical Code Standard

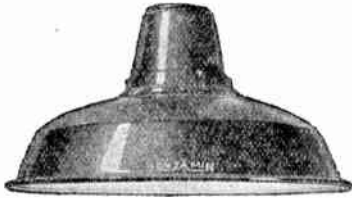
Complete fixtures consist of combinations of the hood and socket units and the reflectors. To obtain price of complete fixture add price of hood and socket to price of reflector selected.

Hoods are designed to take all reflectors interchangeably and to accommodate either medium or mogul base sockets. Hoods are cast iron finished in cadmium plate; reflectors are porcelain enameled, white inside, green outside.

Keyless, one-piece, easy-to-wire, N.E.C. standard porcelain sockets are supplied as standard.

Pull chain socket, medium base only, can be furnished when specified at an advance of 80 cents in list price. When ordering, add suffix "PUL" to Cat. No. of fixture.

**Special Dome Reflectors**



Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Pkg.	Wt. Lbs. Std. Pkg.
1801	\$2.20	75, 100	12	6 <sup>3</sup> / <sub>8</sub>	10	21
1802	2.40	150	14	7 <sup>5</sup> / <sub>8</sub>	10	26
1803	3.00	200	16	8 <sup>3</sup> / <sub>4</sub>	10	34
1804	3.70	300, 500	18	10 <sup>3</sup> / <sub>8</sub>	5	30

**Shallow Bowl Reflectors**



1811	\$2.10	50, 60	10	4 <sup>5</sup> / <sub>8</sub>	10	18
1812	2.20	75, 100	12	5 <sup>7</sup> / <sub>8</sub>	10	22
1813	2.40	150	14	7	10	28
1814	3.00	200	16	8	10	35

**Symmetrical Angle Reflectors**



1821	\$1.10	50, 60	8	7 <sup>3</sup> / <sub>8</sub>	10	14
1822	1.10	75, 100	8	8 <sup>1</sup> / <sub>8</sub>	10	15
1823	1.40	150	10	10 <sup>1</sup> / <sub>2</sub>	10	22
1824	2.85	200	12	12 <sup>5</sup> / <sub>8</sub>	10	42
1825	3.35	300, 500	14	14 <sup>3</sup> / <sub>4</sub>	5	23

**Elliptical Angle Reflectors**



1831	\$2.40	75, 100	13 <sup>1</sup> / <sub>8</sub>	11 <sup>7</sup> / <sub>8</sub>	10	30
1832	3.10	150	13 <sup>1</sup> / <sub>8</sub>	12 <sup>13</sup> / <sub>16</sub>	10	31
1833	3.70	200	16 <sup>3</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>8</sub>	10	38

**Benjamin 1800 Series Sockets**

National Electrical Code Standard

**No. 2101 Keyless Medium Base Socket**



Standard equipment for medium base Benjamin 1800 Series equipment. One-piece, easy-to-wire; fits any Benjamin 1800 Series hoods shown below.

Standard package, 10; shipping weight, 4 pounds.  
No. 2101.....each \$ .60

**No. 2110 Keyless Mogul Base Socket**



Standard equipment for mogul base Benjamin 1800 Series equipment. One-piece, easy-to-wire; fits any Benjamin 1800 Series hood shown below.

Standard package, 5; shipping weight, 3<sup>1</sup>/<sub>2</sub> pounds.  
No. 2110.....each \$1.10

**No. 2102 Pull Chain Medium Base Socket**



For use in any medium base Benjamin 1800 Series fixture. Reliable mechanism; in addition to bead chain controlling the mechanism, socket is supplied with a 6-foot pull cord extension. Socket fits any Benjamin 1800 Series hood shown below.

Standard package, 10; shipping weight, 6 pounds.

No. 2102.....each \$1.40

**Benjamin 1800 Series Separable Hood Fixtures**

**No. E-18 Pendant Cast Hood**



Standard for any Benjamin 1800 Series reflectors and take interchangeably any medium or mogul socket shown above.

Tapped for 1/2-inch conduit, standard. Cast iron; finished in cadmium plate.

Standard package, 10; shipping weight 8 pounds.

No. E-18.....each \$ .50

**No. L-18 Angle Cast Hood**



Standard for any Benjamin 1800 Series reflectors, where it is desired to have the conduit entrance at right angles to the reflector, and take interchangeably any medium or mogul socket shown above.

Tapped for 1/2-inch conduit standard. Cast iron; finished in cadmium plate.

Standard package, 10; shipping weight, 9 pounds.  
No. L-18.....each \$ .50

**No. T-18 Feed Through Cast Hood**



Standard for any Benjamin 1800 Series reflectors, where it is desired to have the conduit feed through the hood at right angles to the reflector, and take interchangeably any medium or mogul socket shown above.

Tapped for 1/2-inch conduit, both sides, standard. Cast iron; finished in cadmium plate.

Standard package, 10; shipping weight, 14 pounds.  
No. T-18.....each \$ .65

**No. C-18 Ceiling Cast Hood**



Standard for any Benjamin 1800 Series reflectors, and take interchangeably any medium or mogul base socket shown above. Fit any standard 4-inch outlet box. One screw hole in hood is slotted for easy attachment.

Cast iron; finished in cadmium plated.

Standard package, 10; shipping weight, 10 pounds.  
No. C-18.....each \$ .50

## Benjamin Snap-In Attachable Reflector Holders

Attach to Any Benjamin Reflector with 2 1/4-Inch N Neck

These snap-in holders can be quickly and easily attached to any Benjamin Shade Holder Reflector with 2 1/4-inch N neck without using tools. To attach, simply line up the rivet heads and crimpings in the collar of the holder with corresponding slots in the neck of the reflector. Then push down on the holder with the palm of the hand. The 4 bronze spring lugs of the holder will snap into position, fastening the reflector and holder securely together.

Standard package, 10; shipping weight, 1 pound.

### Type W Holder



Threads onto various heavy duty, metal-clad sockets with casings threaded for shade holders such as Bryant No. 4107 and similar G-E, Hubbell, H & H and Arrow sockets. Nickel finish.

No. 4382.....each \$.15

### Type S Holder



For attachment to Benjamin-Benco sockets and fittings.

Bright metal finish.

No. 4383.....each \$.15

### Type B Holder



For attachment to standard brass shell sockets. Natural brass finish.

No. 4384.....each \$.15

### Type P Holder



For attachment to standard porcelain sockets.

Bright metal finish.

No. 4385.....each \$.15

## Benjamin Dome Shade Holder Reflectors

Reflector and Lamp Manufacturers' (RLM) Standard



No. 14100N



Type N Shade Holder



Type S Shade Holder

For general illumination when it is desired to avoid reflected glare from the surfaces lighted and to avoid direct glare by having the angle of light cut-off agree with all state lighting codes. Angle of cut-off, 17 1/2 degrees.

Type N Shade Holder Reflector is fitted with a neck so shaped, as to fit any standard 2 1/4 or 3 1/4-inch shade holder.

Type S Shade Holder Reflector has a screw threaded holder to fit Benco Sockets and Type S Outlet Box Fittings.

Shade holders are green porcelain enamel outside; white inside.

### With Type N Neck for Standard Shade Holder

Cat. No.	Each	Size Lamp Watts	DIMEN., In. Diam.	Ht.	Std. Pkg.	Wt. Lbs. Std.
14025N	\$1.25	25, 40	10	3 3/8	10	13 1/2
14050N	1.80	50, 60	12	4 1/8	10	19 1/2
14075N	1.90	* 100	12	5 1/2	10	19 1/2
14100N	2.20	150	14	6 3/4	10	28
14200N	2.60	200	16	7 3/4	10	36
†14300N	3.60	300, 500	18	7 3/4	5	29
†14750N	5.30	750, 1000	20	10 3/4	5	36

### With Type S Holder for Benco Sockets and Type S Outlet Box Fittings

Cat. No.	Each	Size Lamp Watts	DIMEN., In. Diam.	Ht.	Std. Pkg.	Wt. Lbs. Std.
14025S	\$1.40	25, 40	10	3 3/8	10	13 1/2
14050S	1.95	50, 60	12	4 1/8	10	19 1/2
14075S	2.05	* 100	12	5 1/2	10	20 1/2
14100S	2.35	150	14	6 3/4	10	24
14200S	2.75	200	16	7 3/4	10	34 1/2

†With 3 1/4-inch fitter.

\*Also takes 75-watt lamps.

## Benjamin Bowl Shade Holder Reflectors



No. 12100N



Characteristic Distribution Curve

For general illumination where the lighting of flat surfaces is of first importance and where a high intensity is required in a relatively small area.

### With Type N Neck for Standard 2 1/4-Inch Shade Holders

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std.
12025N	\$.95	25, 40	5	3 3/8	10	7
12060N	1.50	50, 60	7	4 3/4	10	12
12075N	1.60	*100	8	6 1/8	10	16 1/2
12100N	1.80	150	9	7	10	18 1/2
12200N	2.20	200	10	8	10	19 1/2

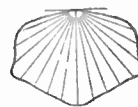
### With Type S Holder for Benco Sockets and Outlet Box Fittings

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std.
12025S	\$1.10	25, 40	5	3 3/8	10	7
12060S	1.65	50, 60	7	4 3/4	10	13
12075S	1.75	*100	8	6 1/8	10	17
12100S	1.95	150	9	7	10	18 1/2
12200S	2.35	200	10	8	10	23

## Benjamin Shallow Bowl Shade Holder Reflectors



No. 11100N



Characteristic Distribution Curve

For general illumination where the lighting requirement is of an extensive character.

### With Type N Neck for Standard 2 1/4-Inch Shade Holders

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std.
11050N	\$1.25	25, 40	10	3 1/8	10	12
11060N	1.45	50, 60	12	4 1/4	10	17
11075N	1.70	*100	12	5	10	17
11100N	1.90	150	15	6 1/4	10	21

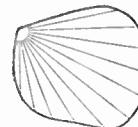
### With Type S Holder for Benco Sockets and Outlet Box Fittings

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std.
11050S	\$1.40	25, 40	10	3 1/8	10	13
11060S	1.60	50, 60	12	4 1/4	10	17 1/2
11075S	1.85	*100	12	5	10	17
11100S	2.05	150	15	6 1/4	10	22 1/2

## Benjamin Angle Shade Holder Reflectors



No. 15075N



Characteristic Distribution Curve

### With Type N Neck for Standard 2 1/2-Inch Shade Holders

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Wdth. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std.
15040N	\$1.15	25, 40	7	6	5 1/2	10	8 1/2
15060N	1.45	50, 60	8	7	6 1/2	10	9 1/2
15075N	1.45	*100	8	7	7 3/8	10	11
15100N	1.95	150, 200	10	8 5/8	9 1/2	10	20

### With Type S Holder for Benco Sockets and Outlet Box Fittings

Cat. No.	Each	Size of Lamp Watts	Diam. In.	Wdth. In.	Ht. In.	Std. Pkg.	Wt. Lbs. Std.
15040S	\$1.30	25, 40	7	6	5 1/2	10	9
15060S	1.60	50, 60	8	7	6 1/2	10	10
15075S	1.60	*100	8	7	7 3/8	10	11 1/2
15100S	2.10	150, 200	10	8 5/8	9 1/2	10	21

\*Also takes 75-watt lamps.



**Benjamin Heavy Duty Gas and Vapor-Proof Fixtures**

Heavy 2-piece cast hood, porcelain enameled steel threaded reflector, socket and heavy screw globe of clear glass, together with necessary gaskets for sealing fixture.

Hood is regularly tapped 1/2 inch but may be ordered 3/4 inch at no advance in price; also furnished with outlet box hoods for attaching to Benjamin Water-Tight Outlet Boxes.

Hood is threaded to take reflector and neck of reflector in turn has an inside thread which receives the enclosing globe. Finish: hood, green enameled; reflector, green acid-resisting porcelain enamel outside, white inside.

**Fixtures Without Reflectors**

Size Lamp Watts	Diam. In.	Std. Pkg.	Cat. No.	With Hood Tapped 1/2 Inch		With Outlet Box Hood	
				Each	Wt., Lbs. Std. Pkg.	Each	Wt., Lbs. Std. Pkg.
50, 100	5 1/8	10	6526	\$3.75	64	6576	\$4.45
150, 200	5 1/8	10	6527	4.20	69	6577	4.90
300, 500	8	5	6528	5.60	74 1/2	6578	6.30



**With Dome Reflector**

For general illumination where it is desired to light both upright and flat surfaces; to avoid reflected glare from the surfaces lighted and to avoid glare by having the angle of light cut-off agree with all state lighting codes. Angle of cut-off, 17 1/2 degrees. Prices do not include wires or lamps.

No. 6501

75, 100	12	10	6500	\$6.00	87 1/2	6550	\$6.70	87 1/2
150	14	10	6501	6.75	93	6551	7.45	93
200	16	10	6502	8.25	99	6552	8.95	99
300, 500	18	5	6503	10.75	102 1/2	6553	11.45	102 1/2

**With Flat Cone Reflector**

75, 100	14	10	6513	\$6.00	92 1/2	6571	\$6.70	83
150	16	10	6514	6.75	100	6572	7.45	91
200	18	10	6515	8.25	106 1/2	6573	8.95	100

**With Bowl Reflector**

For general illumination where the lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.

Prices do not include wires or lamps.



No. 6506

150	9	10	6506	\$6.40	86 1/2	6556	\$7.10	86 1/2
200	10	10	6507	7.00	91	6557	7.70	91
300, 500	12	5	6508	9.05	92	6558	9.75	92

**With Symmetrical Angle Reflector**

For lighting vertical surfaces, deep recesses, shelving, bays, etc., where the light must come from the side.

Prices do not include wires or lamps.



No. 6518

75, 100	10	10	6517	\$6.50	91 1/2	6567	\$7.20	91 1/2
150, 200	12	10	6518	7.25	98	6568	7.95	98
300, 500	14	5	6519	10.00	97	6569	10.70	97

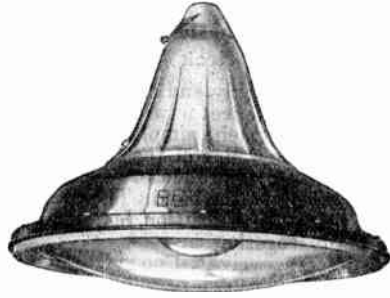
**Replacement Parts**

Cat. No.	Each	Description	Diam. In.	Std. Pkg.	Net Wt. Lbs.
1062	\$1.20	Globe for 100, 200-Watt Lamps	5 1/8	10	7/8
1063	1.60	Globe for 300, 500-Watt Lamps	8	10	2 5/8
6535	.10	Asbestos Gasket for No. 1062	4 1/4	10	1/16
6537	.15	Asbestos Gasket for No. 1063	5 1/2	10	1/8

**Benjamin Vapor-Seal Fixtures**

For locations such as railroads, foundries, etc.

Dome shape porcelain enameled steel reflector finished green outside, white inside. Copper threads rolled onto reflector neck. Cast aluminum hoods with removable cap carrying socket. Hood carries auxiliary inner reflector of



oxidized aluminum. Set screws hold hood onto reflector threads and removable cap onto hood.

N.E.C. standard one-piece porcelain socket with side terminals. Heavy conduit bushing seals wire leads in space between terminal screws and conduit entrance.

Heat-resisting glass cover is held between 2 gaskets. Gaskets cannot fall out when fixture is disassembled.

Cat. No.	Each	Size Lamp Watts	DIMEN., IN. Diam.	Ht.	Std. Pkg.	Wt., Lbs. Std. Pkg.
5650	\$18.00	75, 100	11	9 3/8	2	..
5651	20.00	150	14	10 1/4	2	..
5652	24.00	200	17 5/16	12	2	..
5653	30.00	300, 500	17 5/16	13 1/2	1	..

Prices do not include wires or lamps.

**Benjamin Explosion-Proof Lighting Fixtures**

For 150 and 200-Watt Lamps

Listed by Underwriters' Laboratories for Class I, Group D hazardous locations—atmospheres containing vapors of gasoline, common petroleum, etc.

Cadmium-plated cast iron hood. Pendant hood tapped 3/4-inch standard; 1/2-inch when specified. Ceiling hood has ears for attaching to ceiling; box has 4-way tapping; 3 outlets with plugs. Tapped 3/4-inch standard; 1/2-inch when specified.

Special sphero-parabolic shape reflector of non-tarnishing aluminum alloy. Aluminum casting fixture body, heavily ribbed. Stippled, heat-resisting cover glass; cast iron holding ring, cadmium-plated.

One-piece porcelain socket, wiring terminals on side.

Cat. No.	Each	Description	DIMEN., IN. Ht.	Diam.	Std. Pkg.	Wt., Lbs. Std. Pkg.
*7520	\$28.35	Pendant Hood	12 3/8	9	1	15 1/2
7521	31.30	Ceiling Hood	13	9	1	19

\*For 150-watt lamp, socket extension No. 91 must be used to correctly position lamp in reflector.



**Benjamin Sign Reflectors**

With Keyless Socket and Lamp Grip

Particularly suited for sign illumination. Projects light sideways in a long vertical plane as well as directing it to the front.

Reflector is elliptical shaped, Cry-steel porcelain enameled steel. Has 2-piece porcelain socket, and heavy separable fitting, with set screw, tapped 1/2 inch.

Finish, green outside, white inside.

Cat. No.	Size of Lamp Watts	Size Tapped Inches	DIMENSIONS, INCHES Width	Diam.	Height	Std. Pkg.	Net Wt. Pounds Each	Price Each
5570	100, 150	1/2	9 1/4	13 1/4	8 5/8	9	2 1/2	\$3.60
5571	150, 200	1/2	10	13 1/4	9	9	2 1/2	4.20



## Benjamin Moisture-Proof and Dust-Proof Fixtures



No. 665



No. 657

One-piece, weatherproof copper casing tapped for 1/2-inch conduit. Fitted with removable, one-piece, easily wired porcelain socket held in place by a retaining ring that threads into casing. Clear glass globe threads into casing and seats against an asbestos gasket. Finish, natural copper.

### Without Guard

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Pkg.	Wt. Lbs. Std. Pkg.
663	\$2.10	25, 60	4 1/8	7 5/8	10	37
665	2.65	75, 100, 150	6 3/8	9 1/2	10	63

### With Guard

Supplied with heavy tinned wire guards which thread onto outside of casings.

657	\$2.75	25, 60	4 1/2	8	10	44
658	3.65	75, 100, 150	8 1/8	9 7/8	10	72

### Globes Only for Replacement

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Pkg.	Wt. Lbs. Std. Pkg.
1059	\$.45	25, 40	3 3/8	3	10	10
1060	.75	25, 60	3 1/2	4	10	11
1062	1.20	75, 100, 150	6	4 1/4	10	21 1/2
1063	1.60	300, 500	8 3/4	5 5/8	5	21 1/2

## Benjamin Aluminum Vapor-Proof Projectolites



For lighting service in locations such as railroad round houses, where atmospheric conditions are severe.

Entire body of fixture and cover retaining band are of corrosion-resisting aluminum alloy; exterior is green lacquer. All other exposed metal parts are cadmium-plated.

Without necessitating re-positioning, complete unit can be taken down for easy cleaning and re-lamping on floor.

Unit is sealed against entrance of gases and moisture. There are no openings in reflector neck; all wiring is enclosed with leads from socket terminals passing through gasketed ball type adjustable fitting into connector body.

Adjustable ball joint permits positioning at practically any point through a 180° angle by loosening of holding bolt. A set screw in tapped end of adjustable ball fitting provides a means of lateral positioning.

Connector is 2-pole, water-tight type, polarized; rated 15 amperes, 125 volts; tapped for attachment to 1/2-inch i.p. Fixture is wired with No. 16 B. & S. gauge asbestos-covered fixture wire from socket terminals to connector plug. Wire leads not supplied.

Cat. No.	Each	Size Lamp Watts	DIMEN., IN.		Std. Pkg.	Wt. Lbs. Std. Pkg.
5613	\$16.00	300	12 1/2	12 3/4	1	11 1/2
5627	20.00	300, 500	12 1/2	12 3/4	1	11 1/2

No. 5622, Glass Cover for Replacement.....each \$5.00

## Benjamin Unit-Package Fixtures

For 75 and 100-Watt Lamps

An efficient, economical means of providing good illumination for outdoor and indoor locations about the home, farm, estate and roadside stand. These fixtures are replacing bare lamps used in such locations, by reducing glare and directing most of light which is wasted by a bare lamp, to floor or ground area which is to be lighted.

Porcelain enameled steel reflector has removable cadmium-plated cast hood and one-piece easy-to-wire medium base N.E.C. standard porcelain socket. Pipe and bracket are galvanized.

Packed complete in an individual shipping carton with a 17 1/2-inch length of 1/2-inch pipe and cast wall bracket.

### No. 1941 R L M Dome Reflector with Wall Bracket



Diameter of reflector, 12 inches.

Five in standard package; shipping weight, 28 1/2 pounds.

No. 1941.....each \$3.95

### No. 1943 Flat Cone Reflector with Wall Bracket



For yard and general outdoor lighting.

Diameter of reflector, 14 inches.

Five in standard package; shipping weight, 37 1/2 pounds.

No. 1943.....each \$3.50

### No. 1938 Angle Reflector with Wall Bracket



For lighting ground areas from the side and for use with small signs. Diameter of reflector, 8 inches.

Five in standard package; shipping weight, 28 1/2 pounds.

No. 1938.....each \$2.85

## Benjamin Variety-Lites

For 100 and 200-Watt Lamps

For lighting furnace rooms, attics and similar indoor locations; used outdoors for lighting yards, porches, etc.

Porcelain enameled steel reflector, green outside, white inside. Light can be directed exactly where wanted by adjustment of hinged-swivel mounting bracket which is controlled by three wing nuts. Bracket is cadmium-plated and enameled red. Porcelain one-piece N.E.C. standard socket.

Completely wired; with 4-foot rubber-covered cord and attaching plug.



Cat. No.	Each	Size Lamp Watts	Diam. Reflector, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
1930	\$3.20	100	8	1	4 3/4
1932	3.60	200	10	1	6 1/2

**Benjamin Intensifiers**  
National Electrical Code Standard



A supplementary lighting unit designed to illuminate small areas to higher intensities than furnished by the general illumination.

Reflector bowl is of heavy gauge metal with steel neck which contains keyless socket and focusing apparatus for positioning two different sizes of lamps. Universal adjusting bracket allows horizontal and vertical positioning and is attached to steel neck. Tapped 1/2-inch i.p. size.

Dust-tight cover consisting of glass disc, felt gasket and steel retaining band seals interior of intensifier.

No. 5603 taking an inside frosted 60, 75 or 100-watt lamp is equipped with clear glass cover. No. 5604 taking a clear 150 or 200-watt lamp furnished with etched glass cover. No. 5632, equipped with daylight glass cover, is recommended for work requiring color discrimination.

Outside finish is green paint lacquered. Inside reflecting surface is chromium-plated.

Cat. No.	Each	Lamp Size Watts	Glass Cover	DIMENS., IN.		Std. Pkg.	Wt., Lbs. Std. Pkg.
				Diam.	Ht.		
5603	\$11.75	60-100	Clear	9	11 3/4	1	6
5604	15.00	150-200	Frosted	12	15 3/4	1	9
5632	17.25	150-200	Daylight	12	15 3/4	1	9

**Benjamin Inspection-Lites**

For 15 to 100-Watt Lamps



For local lighting of inspection operations on plate glass, sheet glass, tin plate and many other similar materials where it is necessary to look through the material directly into the light source or at the reflection of the light source from polished or shiny surfaces. The qualifications necessary for inspecting glass and polished surfaces make this fixture ideal for showing up surface imperfections in a wide variety of materials such as leathers, coated papers and rubber stock having a sheen or gloss which ordinarily makes inspection difficult.

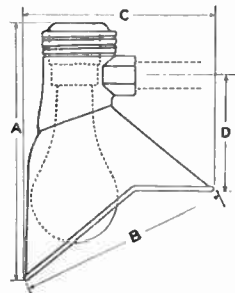
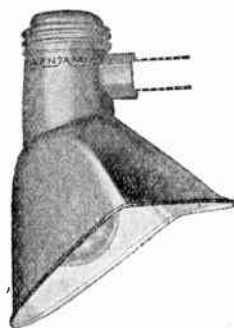
A one-piece porcelain enameled steel reflector produces uniform brightness over the entire surface of the opal glass cover. Reflector is green outside and white inside. Equipped with two medium base twin sockets.

Cover glasses are removable for relamping or cleaning the reflector. Glasses are held tightly in guides by flat bronze springs bearing against them.

Provided with two mounting brackets which are adjustable through an angle of more than 180 degrees making it possible to position the unit at the precise angle necessary for best seeing. Brackets are threaded regularly for 1/2-inch conduit. Mounting brackets are cadmium-plated. Sockets are N. E. C. standard.

Cat. No.	Each	No. of Lamps	DIMENS., IN.			Std. Pkg.	Shp. Wt., Lbs.
			Length	Depth	Height		
5607	\$20.00	4	30	6 3/4	9	1	28
5608	26.00	6	48	6 3/4	9	1	39

**Benjamin Bulletin Reflectors**  
For Intensive Lighting of Small Rectangular and Straight Top Signs



Particularly effective for the lighting of small rectangular signs, long, narrow ridge signs, transom signs, etc.

The distribution of this type of unit is unusually efficient, with a broad spread at top. Sign will be uniformly lighted clear to top and all along top edge. Lamp is close in to inside rear surface of reflector, which means a short cut-off behind reflector and high intensity of reflected light on the sign surface.

The body, with reflector, can be screwed to straight horizontal conduit, aluminum threaded cap removed, socket lifted out, wires fished through conduit and attached to terminals. Socket is then shoved down into place, and cap screwed on. Special shape reflector is porcelain enameled steel, green outside, white inside.

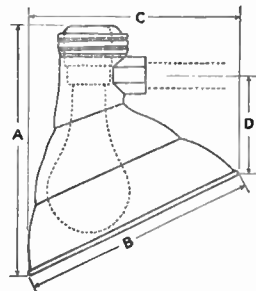
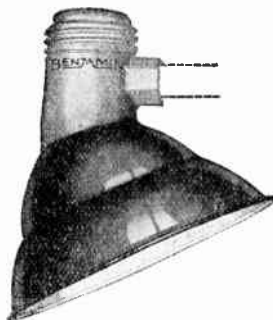
Hood is cast iron, cadmium-plated with threaded side outlet. One-piece porcelain socket, N. E. C. standard.

Tapping: 1/2 inch standard; 3/4 inch when specified.

Cat. No.	Each	Size Lamp Watts	DIMENS., IN.				Std. Pkg.	Wt., Lbs. Std. Pkg.
			Diam. B	Diam. C	Ht. A	Ht. D		
5731	\$2.40	50, 60	6	5 1/4	7 3/4	2 3/4	10	24
5732	2.50	75, 100	7	6 1/4	8 1/2	3 3/4	10	28

Prices do not include wires or lamps.

**Benjamin Emblem Reflectors**  
For Intensive Lighting of Circular Emblem and Other Small Signs  
National Electrical Code Standard



For lighting circular emblem signs of the type popularly used around automobile service and gasoline filling stations and other similar small signs.

Removable threaded aluminum cap gives easy access to wiring terminals on socket and cuts down cost of installation and wiring.

Conduit is led straight into side outlet of reflector hood. Hood, with reflector, is screwed to conduit, aluminum cap removed, socket lifted out, wires brought through and attached to terminals. Socket is then replaced in hood and cap screwed on.

Cast iron hood is cadmium-plated, with side outlet tapped for 1/2-inch standard 3/4-inch when specified.

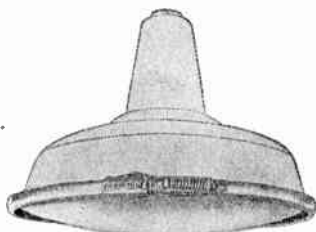
One-piece porcelain socket, N.E.C. standard, with easily accessible terminal screws.

Symmetrical design reflector, is porcelain enameled steel green outside, white inside.

Cat. No.	Each	Size Lamp Watts	DIMENS., IN.				Std. Pkg.	Wt., Lbs. Std. Pkg.
			Ht. A	Diam. B	Diam. C	Ht. D		
5701	\$2.20	50, 60	9 1/4	8	6 7/8	2 1/2	10	26
5702	2.20	75, 100	8	8	7 3/8	3 1/2	10	30



## Benjamin Dust-Tight Glass Covers



A light weight, economical device that will give the reflecting surfaces of Benjamin Industrial Lighting Equipment protection against dust and dirt.

It will give satisfactory service in the average industrial locations where fixtures are exposed only to the dust and dirt of

manufacturing operations. It is not recommended for installation where it will be subjected to acid or alkali fumes, excessive heat or continuous exposure to steam, etc.

Designed for Benjamin Reflector Equipment only. No assurance is given that it will fit other reflectors.

The cover consists of a circular felt gasket, clear glass disc and a one-piece steel retaining band, cadmium finished, having a locking lever with a compression spring.

It is easily attached—the locking lever is first released, which expands the band to its greatest diameter. Then the band is hooked over the reflector bead and the cover pushed up until the band engages the entire edge, after which locking lever is snapped into closed position.

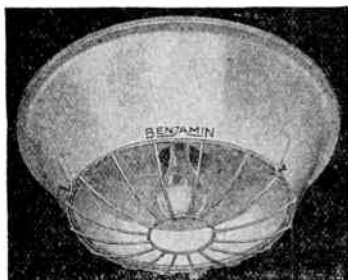
The locking lever with compression spring gives positive tension on the band of the cover at all times. It is virtually impossible for the cover to work itself loose.

The cover in most cases weighs less than the reflector and is easily handled.

Cat. No.	Description	Std. Pkg.	Net Wt. Lbs., Each	Price Each
6408	Cover for 8-Inch Reflector	5	1	\$3.10
6409	Cover for 9-Inch Reflector	5	1 1/4	3.20
6410	Cover for 10-Inch Reflector	5	1 1/2	3.30
6412	Cover for 12-Inch Reflector	5	2	3.75
6414	Cover for 14-Inch Reflector	5	2 1/4	4.25
6416	Cover for 16-Inch Reflector	5	3	5.00
6418	Cover for 18-Inch Reflector	5	4 1/4	5.75
6420	Cover for 20-Inch Reflector	5	4 3/4	9.50

## Benjamin Gymnasium Fixtures

With RLM Dome Reflector



A completely guarded RLM fixture of good appearance, for locations where the lighting fixtures are subjected to frequent jars and hard knocks. Suitable for gymnasiums, indoor baseball courts, volley ball courts, indoor sport arenas, etc.

Special features of this fixture are: longer life; good illumination over horizontal and vertical surfaces; easy lamp removal—large opening in bottom of guard permits passage of lamp; easy cleaning; and attractive appearance.

Each unit consists of heavy gauge steel canopy and wire guard, medium or mogul base keyless socket, Reflector and Lamp Manufacturers' standard dome reflector, and four steel straps for attaching to ceiling. Canopy attaches to straps by means of four large machine screws which are furnished.

Steel canopy and wire guard are white paint enameled. Reflector is white porcelain enameled steel.

For 200-Watt Lamps

Cat. No.	Description	OVER-ALL DIMEN. INCHES	Reflector DIMEN. INCHES	Reflector Diam. Inches	Net Wt. Std. Pkg.	Price Each
6300	With Medium Base Receptacle	24	9 3/16	16	1 10	\$11.00
6302	Less Medium Base Receptacle	24	9 3/16	16	1 10	10.80

For 300-500-Watt Lamps

6301	With Mogul Base Receptacle	24	13 1/2	18	1 11	\$15.00
6303	Less Mogul Base Receptacle	24	13 1/2	18	1 11	13.85

## Benjamin Shallow Bowl Reflectors



No. H416, 16-Inch

Benjamin standard finished, porcelain enameled steel reflectors, green outside, white inside, with heel to fit standard shade holders.

Cat. No.	Size, Inches Reflector	Size, Inches Fitter	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H410	10	2 1/4	10	7	\$ .95
H412	12	2 3/4	10	13	1.15
H414	14	2 1/4	10	15	1.50
H416	16	3 1/4	10	19	1.90

## Benjamin Flat Cone Reflectors

With Heel to Fit Standard Shade Holders



No. H515, 15-inch

Benjamin standard finished, porcelain enameled steel reflectors, green outside, white inside.

Cat. No.	Size, Inches Reflector	Size, Inches Fitter	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H510	10	2 1/4	10	6	\$ .90
H512	12	2 3/4	10	10	1.15
H515	15	3 1/4	10	12	1.65

## Benjamin Flat Cone Reflectors



No. H15, 15-inch

Benjamin standard finished, porcelain enameled steel reflectors, green outside, white inside.

Fixture includes fitting tapped for 1/2-inch iron pipe stem.

Cat. No.	Size, Inches Reflector	Size, Tapped Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H10	10	1/2	10	7	\$1.00
H12	12	1/2	10	12	1.25
H15	15	1/2	10	16	1.65

## No. 12061B Benjamin Bowl Reflectors

No. 12061B concentrates the light on a horizontal plane over a small area directly below the reflector and is used for lighting work tables, benches and similar objects on which fairly close work is carried on.



Type B Holder



Reflector with N Neck Shown for Shape Only

Construction is of rust resisting iron into which is fused Benjamin porcelain enamel to make an everlasting surface. Finish is green outside, white inside. Furnished only with B holder for attachment to standard brass shell sockets.

Cat. No.	Size Lamp Watts	Diameter Reflector Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
12061B	50, 60	7	10	12	\$1.35

**Benjamin Sewing Machine Reflectors**



**No. 31002B**

The Benjamin Sewing Machine Reflector is for localized lighting in connection with power sewing machines. Light is directed right where it is needed. Usually it is best to attach the reflector to a Benjamin Angle Socket, which in turn is supported by whatever supporting fixture the particular conditions necessitate. No. 31002B is paint enameled steel, finished green outside and aluminized inside.

No. 31012B is porcelain enameled, white inside, green outside.

Cat. No.	Size Lamp Watts	DIMENSIONS, INCHES Diameter	Height	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
31002B	15 to 25	3 5/8	4	10	2 1/2	\$ .60
31012B	15 to 25	3 5/8	4	10	2 1/2	.90

**No. 15061B Benjamin Symmetrical Reflectors Angle**



No. 15061B Reflector projects the light to the front as well as to the side and is used for illuminating post-office sorting racks, shelving, rows of books, and storage bins.

It directs the light on the working planes that need illumination, and eliminates the direct glare caused by bare lamps.

Reflector is durably constructed of rust resisting iron into which is fused the Benjamin porcelain enamel. Finish is green outside, white inside. Equipped with a built-in holder for attachment to all standard brass shell sockets.

Cat. No.	Size Lamp Watts	Diameter Reflector Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
15061B	60	8	10	11	\$1.40

**No. 5045 Benjamin Brass Chain Suspensions With Canopy, 3/8-Inch Hickey and 1/2-Inch Loop**

Finish, brushed brass.



Cat. No.	Length Inches	Canopy Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	Extra Chain Price per Ft.
5045	14	5x4	10	....	\$2.30	\$ .35

**Benjamin Iron Pipe Stems**



**No. 6008**



**No. 5063**



**No. 5064**

All iron parts are galvanized.

**Without Fittings**

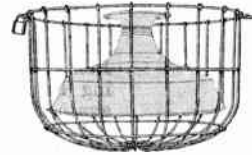
Cat. No.	Length Inches	Pipe Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	Extra Length Price per Ft.
6008	8	1/2	10	....	\$.35	\$.35
6009	12	3/8	10	....	.30	.30
*5063	8	1/2	10	12 1/2	\$1.15	\$.35
5064	8	1/2	10	13 3/4	\$1.30	\$.35

\*With No. 6029 Fitting

With No. 6031 Fitting

For stem with shock absorber fitting, No. 6030, add 10 cents.

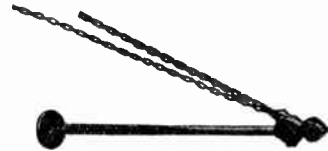
**Benjamin Locking Ceiling Guards**



Has hinge and fastening plate opposite hinge; attached by screws. For brass padlock, 2 keys, add 65 cents. Heavy steel wire, tinned. Fittings are galvanized.

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	Diam.	Depth		
1350	10	7	10	\$1.60
1352	12	8	10	2.00
1354	14	9	10	2.50
1356	16	6 3/4	10	2.80
1358	18	8 3/4	10	3.50
1360	20	11	10	4.00

**No. 6180 Benjamin Iron Mast Arms**



Furnished with chains. Mast arms furnished up to 10 feet in length.

Cat. No.	Std. Lgth. Inches	Fitting Inches	Size Pipe Inches	Std. Pkg.	Price Each	Price Extra Length per Ft.
6180	36	3/4 x 1/2	3/4	10	\$3.50	\$.80

**Benjamin Iron Goosenecks**

**With Wall Fitting**

Gooseneck, No. 5066 is regularly furnished with wall fitting No. 5026, but may be furnished if specified, with pole fitting No. 5025. Cat. No. 5067 includes wall fitting No. 5027.



**No. 5066**

Cat. No.	Standard Length Inches	Size Pipe Inches	Std. Pkg.	Price Each
5066	30	1/2	10	\$.95
5067	40	3/4	10	1.65

**Without Fitting**

Cat. No.	Length Inches	Size Pipe Inches	Std. Pkg.	Price Each
5036	30	1/2	10	\$.60
5037	40	3/4	10	1.00

All iron parts are galvanized finish.

**Benjamin Iron Brackets**



**No. 5040**

With 3/4 x 1/2-inch fittings.

Cat. No.	Std. Length Inches	Description	Size Pipe Inches	Std. Pkg.	Price Each
5038	40	Less Brace... ..	3/4	10	\$2.50
5040	40	Complete... ..	3/4	10	4.00
6186	..	Ball Fitting Only	3/4 x 1/2	10	.55

## Benjamin Aligners with Shock Absorber

### Outlet Box Cover Type

Nos. 3366 to 3369, inclusive, have shock absorbing feature and flexible knuckle, permitting fixture to hang plumb. Fitting is supported by a cover of cast iron or steel which fastens to standard 4-inch outlet boxes and Benjamin Marine Junction Boxes as listed. Finish is galvanized.



No. 3366

Cat. No.	Each	Cover	For Box	Size Tapped In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
3366	\$.65	Steel	Std. 4-Inch.....	1/2	10	5
3367	.65	Steel	Benjamin Marine.....	1/2	10	5
3368	1.00	Cast	Std. 4-Inch.....	1/2	10	12 1/4
3369	1.00	Cast	Benjamin Marine.....	1/2	10	12 1/4

## No. 3380 Benjamin 45-Degree Ball Fixture Aligners

### Outlet Box Cover Type



Consists of a cast iron ball which is mounted between 2 riveted steel plates. Ball is tapped for 1/2-inch iron pipe size. Has hexagon neck for gripping and holding ball when iron pipe is screwed in. Aligner tapped 1/2 inch. For standard 3/4 and 4-inch boxes.

Permits fixture to hang plumb and protects fixture against mechanical jars and shocks.

Attaches to standard box by means of 2 screws. Slot in cover of aligner eliminates necessity of removing more than one screw. Just remove one screw, back up other, slip aligner in place and replace screw. Tighten both screws to hold aligner in position. Finish, electro galvanized.

Standard package, 10; weight, 6 1/2 pounds. Price, No. 3380.....each \$ .30

## Benjamin Weatherproof Cable Suspension Fittings

Designed for quick, easy hanging of reflectors from messenger cables.

The hook and clamp construction of the fittings makes it possible to attach the reflectors to the cable with unusual speed and a minimum of effort. Permanent anchorage is assured without the use of any loops or wire clamps and rigidity of suspension is greatly increased.

### With Cross Arm



This type fitting is equipped with a cross arm having porcelain knobs at each end for supporting current carrying wires. Iron parts galvanized finish.

Cat. No.	Each	Tapped Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.
6036	\$1.65	1/2	10	22
6037M	1.75	1/2 (Male)	10	22

### Without Cross Arm

The cable suspension fitting without cross arm is similar in other respects to the above type. Iron parts galvanized.

Cat. No.	Each	Tapped Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.
6038	\$.95	1/2	10	15
6039M	1.05	1/2 (Male)	10	15

## Benjamin Shock Absorber Cross Arms



No. 6202

Cat. No.	Description	Size Tapped In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6202	With Shock Absorber.....	1/2	10	14	\$1.40
6200	Without Shock Absorber...	1/2	10	13	1.30

## No. 5625 Benjamin Oxidized Aluminum Bowl Shades



This is an oxidized aluminum shade holder unit of concentrated distribution.

It can be attached to any standard brass shell socket, whether of bead type, Uno-thread or combination bead and thread type.

By adjusting the straps which attach the holder to reflector, in the slots provided, and by changing the position of the holder on the socket shell, the unit will accommodate any size lamp from 25 to 60 watts.

The shade is finished in dull green lacquer outside; oxidized aluminum inside. Straps and holder are cadmium-plated.

Cat. No.	Each	Lamp Watts	Std. Pkg.	Wt., Lbs. Std. Pkg.
5625	\$2.20	25 to 60	20	21

## Benjamin Pear Shaped Half Shades



For use with desk lamps, bracket lamps, oil gauge lamps, etc.

Fits standard brass shell sockets and takes Mazda lamps up to 60 watts.

The inside is aluminized; outside as indicated in the listing.

Cat. No.	Description	Std. Pkg.	Shipping Wt., Lbs. Std. Pkg.	Price Each
362	Brushed Brass.....	20	4	\$ .88
364	Brass, Polished Nickel.....	20	4	1.05
365	For Brass Shell Socket; Steel, Green Enameled.....	20	4	.48
365P	For Porcelain Sockets; Steel, Green Enameled.....	20	4	.53

## Benjamin Weatherproof Half-Shades



No. 367

For lighting oil pumps and gauges around gasoline and oil service stations.

No. 367 is of steel, with aluminum ring which is threaded to fit any style Benco socket, and takes Mazda B lamps up to 40 watts. The reflector and ring are held together by friction, permitting adjustment of reflector after ring is tightly screwed into socket.

Reflector is green paint enamel outside and aluminized inside. Also furnished yellow, red, or other colors at special quotations.

Cat. No.	Each	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.
367	\$.45	Reflector only.....	20	1 3/4

## Benjamin Tubular Half Shades



For use with desk lamps, bracket lamps, oil gauge lamps, etc.

Fits standard brass shell sockets and takes T-10 Tubular lamp.

Reflector has hinged collar which allows it to swing out and give free access to the lamp when making replacement.

Aluminized inside; outside as indicated in listing.

Cat. No.	Description	Std. Pkg.	Shipping Wt., Lbs. Std. Pkg.	Price Each
277	Polished Nickel.....	20	4	\$.70
278	Steel, Green Enameled.....	20	4	.60



**Benjamin Heavy Duty Water-Tight Fixtures**

**Ceiling Fixtures**

**With Screw Globe and Guard**



No. 6800

**For 60, 100 and 150-Watt Lamps**

STRUCTURE.—Standard junction box; in brass, No. 6900 keyless; in iron, No. 6901 keyless. Box with mounting lugs, at extra cost. Brass globe-holding ring No. 6990 for 60, 100-watt; No. 6865 for 150-watt; threaded for attachment of globe and guard. Ring attached to box by 4 screws. Rubber gasket No. 6945 seals joint between box and ring. Keyless receptacle No. 6959; key No. 6968. Base is of high heat molded composition. Brass guard, No. 6991 for 60, 100-watt; No. 6868 for 150-watt; screws on outside of globe-holding ring. No. 6992 clear screw globe for 60, 100-watt; No. 6867 for 150-watt. Roughed inside ruby or green glass globe may be specified on 60,

100-watt fixtures. No. 6948 rubber gasket for 60, 100-watt; No. 6866 for 150-watt; seals globe and ring. Standard box is regularly furnished not tapped for conduit entrance. Specify tapping.

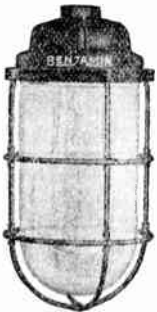
FINISH.—Brass parts regularly unfinished; can be finished in dead black. Iron parts are dead black.

Cat. No.	Each	Size Lamp Watts	Kind of Box	Type of Receptacle	Wt., Lbs. Each
6800	\$6.00	*60, 100	Brass	Keyless	4 1/8
6801	5.20	*60, 100	Iron	Keyless	4 1/8
6804	7.85	150	Brass	Keyless	5 1/2
6805	7.05	150	Iron	Keyless	5 1/2

\*Also takes 75-watt lamps.

**Drop Fixtures**

**For 60, 75 and 100-Watt Mazda Lamps**



STRUCTURE.—Brass body, No. 6896 keyless. Threaded to receive globe and guard. Keyless receptacle No. 6959; key No. 6968. Base of high heat molded composition. Brass guard No. 6991 threaded to fit outside of body. No. 6992 globe. Roughed inside, ruby or green glass may be specified. Rubber gasket No. 6948 seals globe and bracket body. Body furnished tapped at top for 1/2-inch iron pipe.

FINISH.—Brass parts regularly unfinished; finished dead black when specified.

Cat. No.	Each	Kind of Body	Type of Receptacle	Wt., Lbs. Each
6830	\$5.10	Brass	Keyless	3 1/2

**Benjamin Screw Globes**

**Navy Standard Thread**

Heavy glass screw globes fit interchangeably on all Benjamin Heavy Duty Watertight Fixtures and Hand Portables.

The ruby is genuine colored glass, known as a low visibility color.



No. 6992

Cat. No.	Each	For Lamp Size Watts	Kind of Glass	OVER ALL DIMENSIONS	
				INCHES Height	INCHES Net Wt., Width Lbs.
6992	\$ .40	75, 100	Clear	*6 1/16	3 5/16 1
6993	.60	75, 100	Crystal, Roughed Inside	*6 1/16	3 5/16 1
6995	2.00	75, 100	Ruby, Navy Standard	*6 1/16	3 5/16 1
6997	2.00	60, 100	Green	6 1/16	3 5/16 1
6867	.90	150	Clear	†8 3/16	4 1 5/8
7008	1.25	60, 100	Heat-Resisting	6 1/16	3 5/16 1

Including screw thread: \*1 1/16" high; †3/4" high.

**Benjamin Heavy Duty Water-Tight Angle Wall Fixtures**

**With Screw Globe and Guard**

**For 60, 75 and 100-Watt Mazda Lamps**

**With 1-Piece Angle Body**



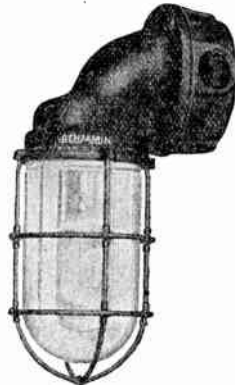
No. 6808

STRUCTURE.—One piece 90-degree angle bracket body of brass; keyless No. 6882. Body has 2 mounting lugs and is threaded to receive globe and guard. Keyless receptacle, No. 6959. Base of high heat molded composition. No. 6991 brass guard threaded to fit outside of bracket body. Clear screw globe with navy standard thread, No. 6992. Roughed inside, ruby or navy blue globe specify. No. 6948 rubber gasket seals globe and bracket body. Regularly not tapped. Body has 3 bosses which may be tapped for 1/2-inch conduit entrance from either side or from top. A 1/2-inch conduit entrance may also be tapped in back of body. Specify tapping; no charge for tapping when location and number of conduit entrances are given with order.

FINISH.—Brass parts, unfinished; finished dead black when specified.

Cat. No.	Each	Kind of Body	Type of Receptacle	Wt., Lbs. Each
6808	\$6.10	Brass	Keyless	3 1/2

**With 1 and 2-Piece Angle Bodies**



No. 6810

STRUCTURE.—One or two-piece 90-degree angle bracket bodies; one-piece body—brass, No. 6888 keyless, iron, No. 6889 keyless. Two-piece—angle bracket body consists of angle bracket; brass, No. 6894; iron, No. 6895; fixture body, keyless, No. 6896. Both types furnished with standard water tight junction box; in brass, No. 6900; in iron, No. 6901. Rubber gasket No. 6945 seals joint between box and bodies. Receptacle base of high heat molded composition; keyless, No. 6959. Heavy brass guard No. 6991 is threaded to fit outside thread of bracket body. Clear screw globe with navy standard thread, No. 6992, regularly supplied. Roughed inside, ruby or glass globe may be specified. Rubber gasket No. 6948 seals globe and bracket body. Standard box is regularly furnished not tapped for conduit entrance; specify tapping.

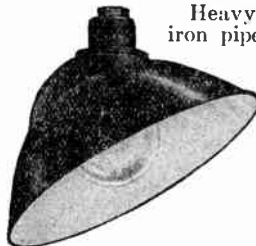
FINISH.—Brass parts, unfinished; finished in dead black when specified. Iron parts are standard dead black.

Kind of Body	With 1-Piece Body		With 2-Piece Body	
	Cat. No.	Wt., Lbs. Each	Cat. No.	Wt., Lbs. Each
Brass	6810	\$8.50 6 3/8	6820	\$8.70 5 5/8
Iron	6811	5.70 6 3/8	6821	7.00 5 5/8

**No. 6848 Benjamin Water-Tight Fixtures**

**With 30-Degree Angle Reflector**

**For 150-Watt Mazda Lamps**



Heavy cast iron hood tapped for 1/2-inch iron pipe, porcelain receptacle with lamp grip. Threaded copper holder receives screw globe and 2 gaskets make fixture gas and water tight. Reflectors are of steel, porcelain enameled, finished white inside; without lamp.

FINISH.—Reflector green enameled outside, black bead. Iron hood is green paint enameled.

Diameter reflector, 16 inches. Weight each, 6 1/4 pounds. No. 6848..... each \$9.25

## No. 6896 Benjamin Drop Fixture Bodies



Heavy cast brass body is supplied tapped  $\frac{1}{2}$  inch for use with Benjamin drop fixtures and 2-piece wall fixtures.

Provided with outside thread to receive protecting guard and inside thread for standard globe.

Regularly unfinished; can be finished in dead black when specified.

Weight, 2 pounds.

No. 6896, without Plunger Key.....each \$2.00

## No. 6888 Benjamin 90-Degree Brass Angle Bracket Bodies

For 1-Piece Bulkhead or Wall Fixtures

Heavy cast brass body has outside thread to receive protecting guard and inside thread for standard screw globe.

Four holes, which take No. 10-24 screws, are provided for attaching to outlet boxes,  $4\frac{1}{2}$  inches in diameter.

Regularly furnished unfinished, but can be finished in dead black when so specified.

Weight,  $3\frac{1}{2}$  pounds.

Cat. No. 6888, Less Plunger Key.....each \$4.00



## Benjamin 90-Degree Angle Wall Brackets

For 2-Piece Wall Fixtures



Heavy cast fittings have  $\frac{1}{2}$ -inch male thread for connection to body of Benjamin 2-Piece Wall Fixtures Nos. 6820-6827.

Fittings are provided with 4 holes which take Nos. 10-24 screws for attaching to bulkhead, or to all outlet boxes  $4\frac{1}{2}$  inches in diameter.

Brass fittings are regularly unfinished, but can be finished in dead black when specified. Iron fittings are dead black.

Cat. No.	Material	Net Weight Pounds	Price Each
6894	Brass	1	\$1.70
6895	Iron	1	.80

## Benjamin Threaded Globe Holding Rings

Cast brass rings for use in connection with heavy duty water-tight fixtures; regularly unfinished but can be finished in dead black. Ring has outside thread to receive protecting guard and inside thread for globe.



Cat. No.	For Fixtures Watts	Net. Wt. Lbs.	Price Each
6990	75, 100	$\frac{11}{16}$	\$1.50
6865	150	$\frac{3}{4}$	1.80

## Benjamin Protecting Guards

A brass guard which screws on outside of globe holding ring or fixture body. Used on Benjamin Heavy Duty Water-tight Fixtures and Hand portables. Finished in dead black.



Cat. No.	Fixtures Watts	Net. Wt. Lbs.	Price Each
6991	60, 100	$\frac{11}{16}$	\$2.00
6868	150	1	3.00

## R & S Vapor, Gas and Dust-Proof Fixtures

Screw Globe Type

These fixtures are designed for use in places where dampness, dust, combustible gases or corrosive vapors exist; such as for marine use, out-door use, oil refineries, grain elevators, mines, gas and chemical plants, etc.

They are so constructed that, should the protecting globe accidentally be broken, the fixture body will remain air-tight preventing vapors from entering the conduit line. Fixtures are made in cast iron (electro galvanized), cast brass and cast aluminum alloy.

### Specifications

Brass fixture bodies—standard finish is black oxidized throughout; special finishes upon request.

Iron fixture bodies—standard finish is electro galvanized.

Aluminum fixture bodies and guards—standard finish is natural aluminum color.

Reflectors are made of heavy steel, porcelain enameled green outside, white inside.

Guards are heavy gauge brass round wire, mounted on threaded brass ring; standard finish, black oxidized.

All globes are made of best American flint glass and guaranteed true to size. Only natural colored glass is used. Seating surfaces are ground true and smooth.

High grade cloth inserted rubber gaskets are furnished as standard equipment. Gaskets of other material will be supplied on request.

Receptacles are moulded composition, with shell moulded in base to provide for air-tight condition even though the globe should become broken.

Maximum size of conduit,  $\frac{3}{4}$  inch. When ordering, specify outlets required.

## R & S Pendent Type Vapor-Proof Fixtures

With RLM Reflectors



Fixtures are complete with RLM reflector. They are furnished with or without guard.

Watts	RLM Reflector In.	Material	Without Guard			With Guard		
			Cat. No.	Wt. Lbs.	Price Each	Cat. No.	Wt. Lbs.	Price Each
25-60	12	Brass	6201	4	\$7.45	6202	$4\frac{1}{2}$	\$9.60
100-150	14	Cast Iron	6303	$6\frac{1}{4}$	8.60	6304	$7\frac{3}{4}$	11.30
100-150	14	Brass	6203	$6\frac{1}{4}$	10.80	6204	$7\frac{3}{4}$	13.50
200	16	Cast Iron	6305	$7\frac{1}{4}$	9.20	6306	$8\frac{3}{4}$	11.90
200	16	Brass	6205	$7\frac{1}{4}$	11.40	6206	$8\frac{3}{4}$	14.10
300	18	Cast Iron	6307	11	13.20	6308	13	16.50
300	18	Brass	6207	11	15.35	6208	13	18.65

## R & S Junction Box Type Vapor-Proof Fixtures

With RLM Reflectors

These fixtures are mounted on iron or brass junction box and are fitted with RLM reflectors.



Watts	RLM Reflector In.	Material	Without Guard			With Guard		
			Cat. No.	Wt. Lbs.	Price Each	Cat. No.	Wt. Lbs.	Price Each
25-60	12	Brass	6211	$5\frac{3}{4}$	\$7.45	6212	$6\frac{1}{2}$	\$9.60
100-150	14	Cast Iron	6313	8	8.60	6314	$9\frac{1}{2}$	11.30
100-150	14	Brass	6213	8	10.80	6214	$9\frac{1}{2}$	13.50
200	16	Cast Iron	6315	$8\frac{1}{2}$	9.20	6316	10	11.90
200	16	Brass	6215	$8\frac{1}{2}$	11.40	6216	10	14.10
300	18	Cast Iron	6317	14	13.20	6318	16	16.50
300	18	Brass	6217	14	15.35	6218	16	18.65



**R & S Ceiling Vaporproof Fixtures  
Screw Globe Type**

Equipped with No. 118 receptacles, so mounted that base of fixture and conduit system remains vaporproof, even though globe should become broken. All fixtures are complete with clear globe and brass guard, black oxidized.



Cat. No.	Each	Max. Lamp Watts	Material and Finish	Wt. Lbs.
*5090	\$4.80	60	Brass, Blk. Oxid.	2½
†5093	5.40	60	Brass, Blk. Oxid.	3
*6335	5.90	200	Iron, Galvanized	5¾
*5091	8.40	200	Brass, Blk. Oxid.	5¼
†6336	6.50	200	Iron, Galvanized	5¾
†5094	9.00	200	Brass, Blk. Oxid.	5¼

\*Fit No. 333 cast iron or No. 332 cast brass junction boxes.  
†Special mounting; fit 4-in. diam. stamped steel boxes which are installed and cannot be replaced by watertight boxes.

**R & S Pendent Vaporproof Fixtures  
Screw Globe Type**

With clear globe; brass guard, black oxidized. Keyless fixtures equipped with No. 118 receptacle. Maximum conduit, ¾ inch; specify size when ordering.



No. 5000

Without Switch				
Cat. No.	Each	Bodies	Max. Lamp Watts	Wt. Lbs.
5000	\$5.40	*Brass	60	3
6324	6.50	†Iron	100-200	6
5001	9.00	*Brass	100-200	5½
6328	11.10	†Iron 300 (Mogul Base)		8
1413	13.20	*Brass 300 (Mogul Base)		8½
With Switch				
430	\$7.50	*Brass	60	3½
With Side Feet				
5005	\$5.70	*Brass	60	3¼
5006	12.00	*Brass	100-200	5½

†Galvanized. \*Black oxidized.

**R & S Junction Box Vaporproof Fixtures  
Screw Globe Type**

Fixtures are complete with clear globe, brass guard and type are mounted on iron junction box No. 333; if desired, with brass box No. 332, add \$1.30 to price.



No. 5045

Keyless fixtures equipped with No. 118 receptacle.  
Iron fixtures and boxes, galvanized; brass fixtures and guards, black oxidized.  
Maximum conduit, ¾ inch.

Without Switch				
Cat. No.	Each	Material	Max. Lamp Watts	Approx. Wt. Lbs.
5045	\$5.40	Brass	60	4
6334	6.50	Iron	100-200	7¾
5047	9.00	Brass	100-200	7¼
6338	11.10	Iron 300 (Mogul Base)		8½
1414	13.20	Brass 300 (Mogul Base)		8¼
With Switch				
431	\$7.50	Brass	60	5¼

**R & S 90° Wall Bracket Vaporproof Fixtures  
Screw Globe Type**

Complete with clear globe; brass guard, black oxidized. Mounted on iron junction box No. 333; with brass box No. 332, add \$1.30. Maximum conduit, ¾ inch; specify size and location of outlets when ordering.



Type G

Keyless fixtures equipped with No. 118 receptacles, so mounted that base of fixture and conduit system remains vaporproof even though globe should be broken.

Type G—Without Switch				
Cat. No.	Each	Material	Max. Lamp Watts	Wt. Lbs.
5060	\$7.20	*Brass	60	6
6300	9.00	†Iron	100-200	10
5062	12.60	*Brass	100-200	9½
Type GS—With Switch				
434	\$8.80	*Brass	60	6½

†Galvanized. \*Black oxidized.

**R & S Screw Type  
Glass Globes**



Made of best American Flint glass and guaranteed true to size. Only natural colored glass is used.

Seating surfaces are ground true and smooth.

The 15 to 60-watt globes are packed 50 to a carton; 100 to 200-watt and 300-watt globes, 18 to a carton.

Max. Size Lamp	15-60	15-60	15-60	15-60
.....watts	15-60	15-60	15-60	15-60
O.D.....in.	3½	3½	3½	3½
Lgth. Over All...in.	4	5	6	7
Carton.....lbs.	32	38	48	63

Color	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
Clear.....	2392	\$.60	2380	\$.60	2383	\$.60	2386	\$.60
Frosted.....	2393	.95	2381	.95	2384	.95	2387	.95
Opal.....	2394	.90	2382	.90	2385	.90	2388	.90
Ruby.....			803	3.30	809	3.30	815	3.30
Blue.....			804	2.50	810	2.50	816	2.50
Green.....			805	2.50	811	2.50	817	2.50

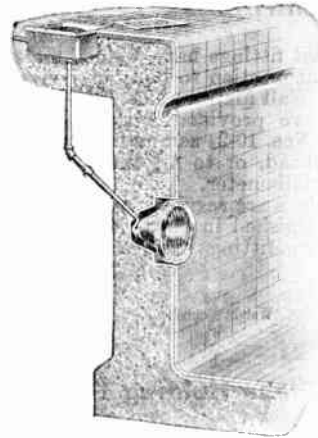
  

Max. Size Lamp	15-60	100-200	300
.....watts	15-60	100-200	300
O.D.....inches	3½	4½	6
Length Over All			
.....inches	8	8¾	9½
Wt., Carton...pounds	70	44	52

Color	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
Clear.....	2389	\$.90	2395	\$1.45	2376	\$2.10
Frosted.....	2390	1.25	2396	2.05	2377	3.00
Opal.....	2391	1.20	2397	1.90	2378	2.70
Ruby.....	821	3.30	833	6.60	2373	7.20
Blue.....	822	2.50				
Green.....	823	2.50	835	5.00	2375	5.70

**R & S Swimming Pool and Fountain  
Lighting Fixtures**



Russell & Stoll Company, pioneers in the field of watertight and marine lighting, offer a complete line of underwater lighting units, perfect in every detail and suitable for every type of pool construction.

These fixtures are constructed of high grade valve bronze; equipped with polished chromium copper reflectors, clear spreadlight lens producing a wide horizontal beam of light without glare.

By the addition of color filters many attractive tints may be produced.

The illustration depicts a typical swimming pool wall construction with a No. 2362 bronze adjustable underwater floodlight in position in a cast bronze housing No. 2362H and a bronze cable box No. 2363 with cover removed and in which is coiled all surplus cable.

This floodlight pivots in the bronze housing allowing the fixture to be adjusted to the most efficient lighting angle; water cooled, because it is entirely surrounded by water when installed. By lifting floodlight out of pivot bearings in the bronze housing, fixture can be raised to surface and relamped in a few minutes without draining pool or disturbing current carrying line.

This unit will accommodate a Type G-30 floodlight lamp, 250 or 400 watts. Prices and detailed information of this fixture and various other style units covered in Bulletin 65 will be gladly forwarded upon application.



## Thompson Lamp-Maintenance Hangers

The Thompson Hanger is a safety lowering switch, adapted for use with any reflector, regardless of the kind or size, in any industrial circuit.

The hangers are made with many modifications to meet a wide range of conditions. There are three types of sheave housing, open front, the semi-enclosed and the seal type.

All line wire connections are located inside the hanger, but the wiring outside of the hanger may be either exposed or enclosed in conduit by means of appropriate fittings. Hangers providing for exposed outside wiring are termed semi-enclosed and others, conduit type.

### \*No. 93-A



No. 93-A

This model has a medium depth of canopy or enclosure, adapted for either indoor or outdoor use. It has two porcelain bushings in the back of the canopy to provide for the entrance of line wires into the hanger. Lends itself readily to either open wiring or conduit distribution.

Cat. No.	Std. Pkg.	Wt., Net	Lbs. Ship.	Price Each
†93-A	30	8	10	\$9.00

### \*No. 93-B

This model is for use where it is desired to enclose line wires directly into the hanger. This hanger is exactly like the Model No. 93-A except that instead of having two porcelain bushings, there is one hole in the back of the canopy for attaching the conduit fittings, which may be of any kind desired.

There are no porcelain knobs on this model.

Cat. No.	Std. Pkg.	WEIGHT, POUNDS Net	Shipping	Price Each
93-B	30	8	10	\$9.00



No. 93-B

### \*Nos. 94-A and 94-B

These two models have a deep skirted canopy to provide additional weather protection where it is desired.

Except for the difference in canopy, they are exactly the same as Nos. 93-A and 93-B respectively.

Cat. No.	Std. Pkg.	WEIGHT, POUNDS Net	Shipping	Price Each
†94-A	20	9	11	\$10.00
94-B	20	9	11	10.00



No. 94-A

\*These models have a sheave housing which is semi-enclosed in such a manner that it is necessary for the chain to pass in and out horizontally.

### Nos. †96 and 97

These two models correspond to the medium canopy hangers Nos. 93-A and 93-B, respectively, except that they have an open front sheave housing, which will enable the chain to operate at any angle in a vertical plane, below the horizontal, thus adapting them for use in connection with a sloping overhead support.

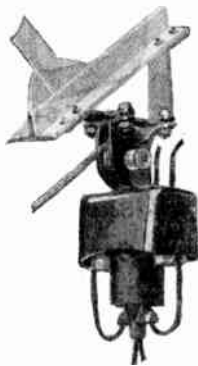
Cat. No.	Std. Pkg.	WEIGHT, POUNDS Net	Shipping	Price Each
†96	30	8	10	\$9.00
97	30	8	10	9.00

### Nos. †98 and 99

These models have also the open front sheave housing, but are otherwise exactly the same as the deep skirted models Nos. 94-A and 94-B.

Cat. No.	Std. Pkg.	WEIGHT, POUNDS Net	Shipping	Price Each
†98	20	9	11	\$10.00
99	20	9	11	10.00

†Porcelain knobs are provided on the sheave housing of these models only to serve as strain insulators if required.



No. 96

## Thompson Lamp-Maintenance Hangers

### Sealtype Series



No. 201-A

The Sealtype Hanger has a sheave housing designed to give the greatest possible protection against deterioration from dirt and corrosion to the wheel which is the only moving part in the upper member of the hanger.

This sheave housing is tapped for 3/4-inch conduit to enclose the chain. When the chain conduit is screwed into place the housing will be completely sealed, except for the opening in the bottom where the chain passes down inside of the hanger canopy. With this type of hanger the wheel is easily accessible for inspection.

The distinctive feature of the Sealtype Hanger series is the change in the sheave housing.

The Sealtype Hangers are offered to correspond with previously described models, as follows:

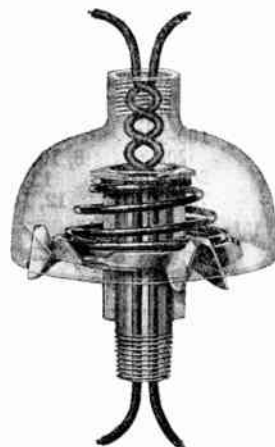
Cat. No.	Each	Corresponds to Model No.	Std. Pkg.	WEIGHT, POUNDS Net	Shipping
201-A	\$10.00	93-A	30	8	10
201-B	10.00	93-B	30	8	10
202-A	11.00	94-A	20	9	11
202-B	11.00	94-B	20	9	11

### Duplex Construction

In many plants the wiring distribution conduit will be some distance below the overhead support. To meet this condition, any of the models, except No. 95, can be supplied with the upper member in two parts, that is the sheave housing separated from the body of the hanger, and a special malleable iron flange plate tapped for 3/4-inch conduit attached to top of canopy and another one to bottom of sheave housing, in order that a piece of conduit of the desired length may be inserted between the two members thus formed.

In specifying this construction add the letter D to the model number and 50 cents each to the net price of the device.

## Thompson Shock Absorbers



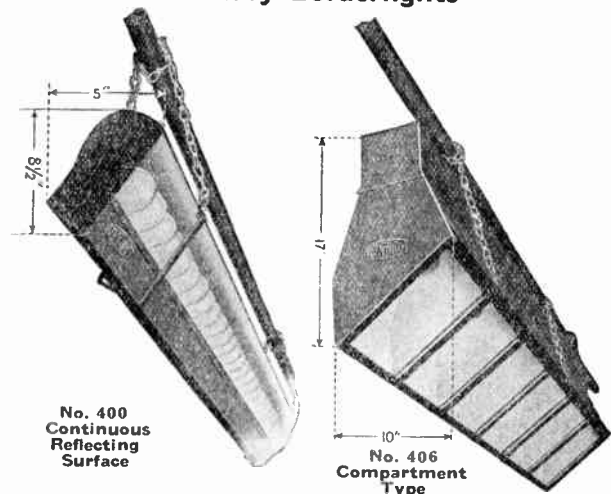
All parts, except spring, are malleable iron castings galvanized; weatherproof.

The lamp or socket wires should be given a loose twist, or meshed spiral form, inside of the stem and canopy, so as to provide flexibility for the vibrating movement.

The canopies of both models come regularly with a 1/2-inch female thread at the top, but when so specified on the order a 3/4-inch male thread can be substituted. Both models have a 1/2-inch male thread at the bottom to be screwed into the lamp fixture.

Cat. No.	Each	For Lamps Weighing	Weight Pounds
80-L	\$1.50	1 1/2 to 5 Pounds	1
80-H	1.50	3 to 8 Pounds	1
74-L	2.50	5 to 12 Pounds	1 1/4
74-H	2.50	9 to 30 Pounds	1 3/4
74-HII	2.50	15 to 40 Pounds	1 3/4

**Century Borderlights**



All borderlights include chain hangers, scenery guards and splice box for feed cables.

**Continuous Reflecting Surface**

Cat. No.	Type of Reflector Strip	Outlet Wattage	Outlet Centers In.
400	Non-Fade Permanent White or Aluminum Paint.....	25-100	3, 4, 6
401	Sheet Aluminum.....	25-100	3, 4, 6
402	Sheet Chromium.....	25-100	3, 4, 6

**Compartment Type—Permanent White Surface**

Furnished with individual metal frames to receive colored gelatine mediums.

Cat. No.	Type of Reflector	Outlet Wattage	Outlet Centers Inches
406 1/2	White Paint	100-150	6
406	White Paint	200	8, 10, 12
407	White Paint	300-500	12

Prices upon application.

**Individual Reflector Type**

Furnished with heat-resisting colored roundels.

**With Chromium Reflector**

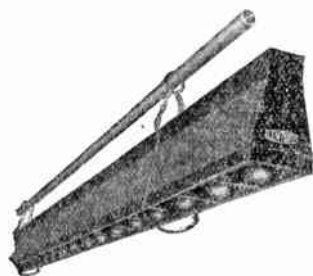
Cat. No.	Outlet Wattage	Outlet Center Inches
423	100-150	6
424	200	8, 10, 12
425	300-500	12

**With Porcelain Reflector**

419	200	10, 12
420	300-500	12

**With Matte Aluminum Reflector**

410	50-100	4, 6
411	100-150	6
413	200	8, 10, 12
414	300-500	12
415	750-1000	12, 14

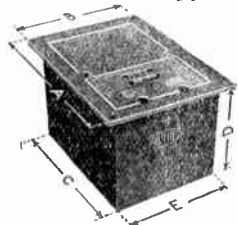


No. 423 Individual Reflector

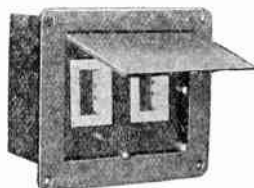
**Century Floor and Wall Pockets**

Furnished with plugs.

**Flush Floor Type**



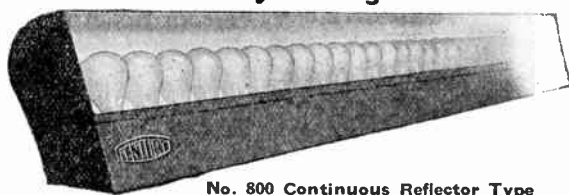
**Flush Wall Type**



Cat. No.	Description	Each
3091	1 Way	\$10.00
3092	2 Way	16.00
3093	3 Way	21.00
3094	4 Way	28.00

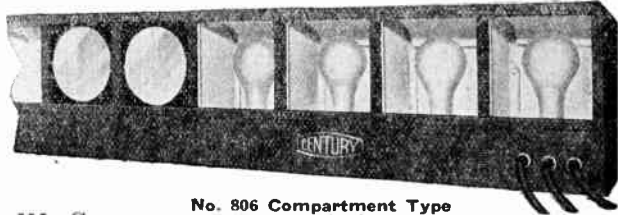
Cat. No.	Description	Each
3101	1 Way	\$10.00
3102	2 Way	16.00
3103	3 Way	21.00
3104	4 Way	28.00

**Century Footlights**



No. 800 Continuous Reflector Type

Cat. No.	Description	Outlet Wattage	Center Outlet In.
800	Semi-Open Trough, Single Row; White Reflecting Surface; Splice Box for Feed Cables; Apron Included.....	25-100	3, 4,
801	Same as No. 800 except with Sheet Aluminum Strip Reflector.....	25-100	3, 4,
802	Same as No. 800 except with Sheet Chromium Strip Reflector.....	25-100	3, 4,

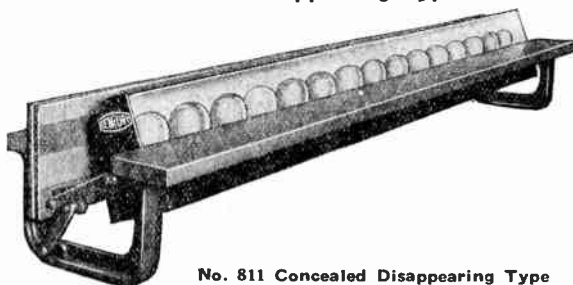


No. 806 Compartment Type

806	Compartment Type, Single Row; White Paint Reflector; with Metal Frame for Color Mediums; Splice Box for Feed Cables.....	25-100	6
808	Individual Reflector Type, Single Row; Aluminum Spun Reflectors; Heat-Resisting Colored Glass Roundels and Holders; Splice Box for Feed Cables.....	50-150	4, 6
809	Same as No. 808 except with Chromium Reflectors.....	50-150	4, 6
823	Individual Reflector Type, Double Row; Aluminum Spun or Chromium Reflectors; Heat-Resisting Colored Glass Roundels and Holders; Splice Box for Feed Cables.....	50-150	4, 6

Prices upon application.

**Concealed Disappearing Type**



No. 811 Concealed Disappearing Type

Standard 5-foot sections in either oak or maple wood trims; mercury disconnect (on and off) switches and splice box for feed cables.

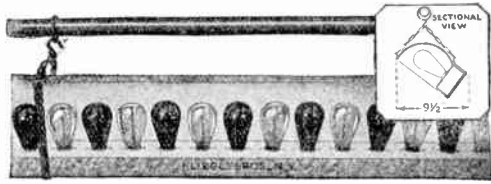
Cat. No.	Description	Out-lets	Watt-age	Each
811	Semi-Open Trough, Single Row; White Reflecting Surface.....	15	25-100	\$50.00
812	Compartment Type, Single Row; White Paint Reflectors.....	12	25-100	55.00
819	Individual Reflector Type; Aluminum Reflectors; Heat-Resisting Colored Glass Roundels....	12	25- 60	60.00
822	Same as No. 819 except with Chromium Reflectors.....	12	25- 60	65.00
820	Individual Reflector Type; Aluminum Reflectors; Heat-Resisting Colored Glass Roundels....	9	75-150	73.00
821	Same as No. 820 except with Chromium Reflectors.....	9	75-150	78.00

**Cove Striplights, Aisle Lights, Spotlights, Floodlights and Dimmers**

Detailed blueprints and prices upon application.

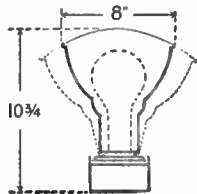
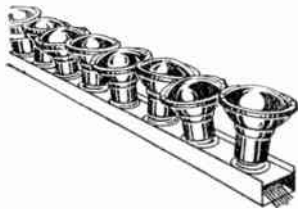


## No. 600 Kliegl Permanent Type Borderlights



For 60 to 100-watt clear or naturally colored lamps.  
 Furnished completely wired, with circuits ending at a special terminal block in a splice box at right or left end as specified.  
 Furnished in one continuous length, or in sections; with chains and pipe batten for hanging.  
 State length of border, number of colors and size of lamps required when ordering.  
 Prices on application.

## No. 731 Kliegl Cove Light Strips



Universally and adjustably mounted so that unit can be independently set to suit conditions; has GRC type reflectors with hinged frame for colored glass roundels.  
 Made in two sizes: No. 731 with short neck reflector for 100-watt lamps; No. 731A with long neck reflector for 150-watt lamps. Specify length of strip, straight or curved, and number of lights for each color per foot required when ordering. Prices on application.

## Kliegl Incandescent Spotlights

Prices do not include lamps.

**No. 276 Series**  
 For 75-400-Watt Lamps  
 Table base mounting.



No. 276

No.	Each	Watts	LAMP Bulb	Base	Wt. Lbs.
*276	\$22.00	75	G16 1/2	Prong	2
*276A	22.00	100	P25	Med. Ser.	3
*276B	35.00	250-400	G30	Med. Ser.	14

\*Lamp included.

**No. 53 Series**  
 For 250-400-Watt Lamps

Diameter lens, 4 1/2 inches. Medium screw lamp base; G30 bulb.



No. 53A

Bulb No.	Each	Mounting	Wt. Lbs.
53	\$10.00	Yoke Only	5
53A	12.00	Wall Bracket	6
53B	12.00	Table Base	12 1/4
53C	15.00	Floor Stand	17 3/4
53E	12.00	Pipe Clamp	6 1/4
53S	15.00	Yoke and Shutter	6

**With Automatically-Operated Color Frames**  
 For 2000-Watt Lamps



With magnet controls and circular color frames for d.c. Table base mounting. Mogul pre-focused lamp base; G48 bulb.

No.	72B	73B
Diameter Lens	6 inches	8
Weight	74 pounds	77
Each	\$150.00	160.00

## Kliegl Disappearing Type Footlights



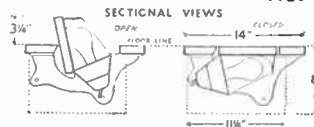
No. 830

When not in use footlights may be closed down flush with stage floor, leaving an unobstructed platform. Serviceable in instances where the stage is used sometimes for entertainments and at other times for speakers and lecturers, as in schools, clubs, assembly rooms, etc.

Furnished completely assembled; in straight standard 5-foot lengths, with splice box, automatic cut-off switches and oak flooring. Receptacles wired on three 2-wire circuits for independent control of three colors. Sections have sufficient allowance to permit mitring on ends for curved installations. Special lengths, if needed.

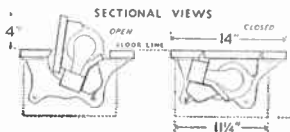
Comply with Underwriters' requirements.  
 Lamps are not included in price.

No. 829



No. 829.....each \$50.00

No. 830



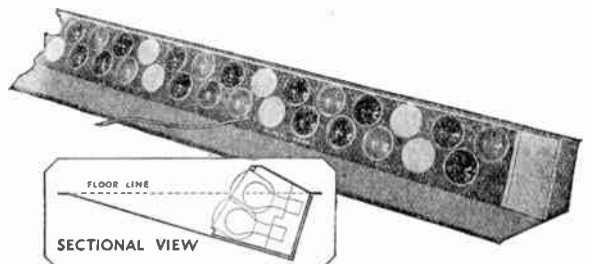
No. 830.....each \$85.00

Single row, open type footlight with receptacles for fifteen 60 to 100-watt lamps; complete 5-foot section.  
 Weight, 46 1/2 pounds.

Single row enclosed type footlight with colored glass roundels, for twelve 100-watt lamps; complete 5-foot section.  
 Weight, 56 pounds.

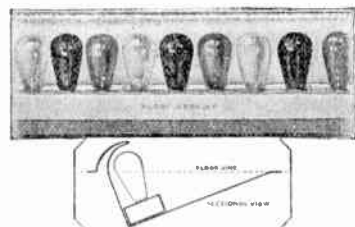
## Kliegl Permanent Semi-Flush Type Footlights

No. 621



Double-row enclosed type footlight with colored glass roundels; for 100 or 150-watt clear lamps.

No. 622



Single-row, open trough type footlight for 60 to 100-watt clear or naturally colored lamps. Fitted with single row medium screw base receptacles.

State length, number of colors and size of lamps required when ordering. Prices on application.



**Crouse-Hinds Floodlight Projectors**  
Medium and Long Range  
*Schedule F*



Has adjustable mountings with swivel base. By removing the base casting, a slip-fitter base is obtained which is designed to fit over pipe, the diameters of which are: Type ADA-12, 3/4-inch; Types ADA-14, ADE-14 and ADA-16, 1 1/4-inch.

Types ADA-14 and ADA-16, the standard mounting base is removed and a CGB295 connector is furnished in the top of the slip-fitter for wiring convenience. Several bases and brackets can be furnished.

**Type ADA-14** Two U-bolts are furnished with each Type ADA-12 floodlight which will clamp the floodlight to any pipe from 3/4 to 1 1/2 inches.

Type ADA-14, quadrant mounting, cast brass base; Type ADE-14, steel trunnion mounting, cast brass base.

Lamp receptacles for Type ADA-12, porcelain medium screw base (Cat. No. HL8509); for Types ADA-14 and ADE-14, Mogul screw base (Cat. No. HL2128); for ADA-16, porcelain Mogul screw base (Cat. Nos. HL2128 for PS lamp, HL7136 for G bulb lamp).

Lamps for Type ADA-12, 150-watt, PS-25 bulb; 200-watt, PS-30 bulb; or 250-watt, G-30 bulb. When using the G-30 bulb lamp, the floodlight must not be tipped more than 45 degrees below the horizontal.

Circular louvers for eliminating spill light can be provided.

Clear, pyrex, heat-resisting lens. Clear, spread or diffusing convex lenses can be furnished. Colored lenses can be furnished for ADA-12 color screens for ADA-14, ADE-14 and ADA-16.

Weight of Type ADA-12, 14 1/2 pounds; Type ADA-14, 42 pounds; Type ADE-14, 48 pounds; Type ADA-16, 66 pounds. Aluminum finish.

**Type ADA-12**  
Smooth Reflector

Cat. No.	Style	Color	Cat. No.	Style	Color
40823	Plain	Clear	40850	Plain	Green
40826	Diffusing	Clear	40853	Diffusing	Green
40829	Spread	Clear	40856	Spread	Green
40832	Plain	Red	40859	Plain	Purple
40835	Diffusing	Red	40862	Diffusing	Purple
40838	Spread	Red	40865	Spread	Purple
40841	Plain	Amber	40868	Plain	Blue
40844	Diffusing	Amber	40871	Diffusing	Blue
40847	Spread	Amber	40874	Spread	Blue
<b>Hammered Reflector</b>					
40824	Plain	Clear	40851	Plain	Green
40827	Diffusing	Clear	40854	Diffusing	Green
40830	Spread	Clear	40857	Spread	Green
40833	Plain	Red	40860	Plain	Purple
40836	Diffusing	Red	40863	Diffusing	Purple
40839	Spread	Red	40866	Spread	Purple
40842	Plain	Amber	40869	Plain	Blue
40845	Diffusing	Amber	40872	Diffusing	Blue
40848	Spread	Amber	40875	Spread	Blue

**Types ADA-14, ADE-14 and ADA-16**

Type	Reflector	With		LAMP	
		Standard Mounting	Slip-Fitter Mounting	Watts	Bulb
ADA-14	Hammered	41212	*41289	500	PS-40
ADA-14	Smooth	41213	*41290	300	PS-35
ADE-14	Hammered	41214	.....	500	PS-40
ADE-14	Smooth	41215	.....	300	PS-35
ADA-16	Hammered	41056	†41291	300 to 1000	PS-52
ADA-16	Smooth	*41057	†41292	300 to 1000	PS-52
ADA-16	Smooth	41058	†41293	1000	G-40

\*HL3682 slip-fitter base can be furnished separately at \$3.00, when it is desired to change from standard to slip-fitter mounting.

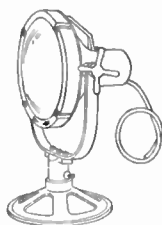
\*\*HL3252 extension for using 500 or 1000-watt G-40 lamps with this floodlight can be furnished at \$3.00.

†HL3683 slip-fitter base can be furnished separately at \$5.00, when it is desired to change from standard to slip-fitter mounting.

Catalogue numbers do not include incandescent lamps.

**Prices upon Application**

**Type ADR-12 Crouse-Hinds Floodlight Projectors**  
*Schedule F*  
Portable



Type ADR-12 Floodlight is a small compact unit especially adaptable for portable use either when a narrow beam spotlight or a wide evenly distributed beam of light is required.

Has a 1 1/2-inch crystal mirrored glass reflector with hammered surface when used with PS bulb lamp or smooth surface when used with G bulb lamp. Porcelain medium screw base lamp receptacle (Cat. No. HL8509). An adapter can be furnished for use with

21, 32 or 50 candle power, 6 or 12-volt bayonet base lamps at \$1.85 each.

Cast aluminum alloy housing. Non-ventilated, dust-tight and weatherproof.

Steel trunnion mounting with 12-inch wheel base of cast aluminum alloy.

Ten feet of rubber-covered cable is furnished with a medium screw plug. A watertight stuffing box is provided in the rear of the housing.

Clear Pyrex, or colored, convex, heat resisting lens in plain, spread or diffusing styles.

Lamps, 150-watt, PS-25 bulb; 200-watt, PS-30 bulb when used with a hammered reflector and diffusing lens for wide angle distribution; 250-watt, G-30 bulb when used with a smooth reflector and clear lens for spotlight use. When using the G-30 bulb lamp the floodlight must not be tipped more than 45 degrees below the horizontal.

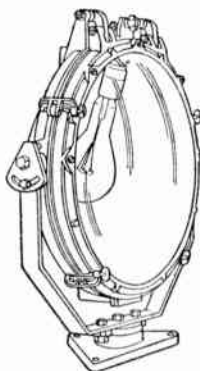
Natural aluminum finish. Weight, 27 pounds.

Type	Lens	Reflector	Cat. No.	DIMENSIONS, INCHES
				No. Height Width Depth
ADR-12	Plain, Clear	Smooth	42023	22 15 1/2 11 1/4
ADR-12	Diffusing, Clear	Hammered	42024	22 15 1/2 11 1/4

Prices do not include incandescent lamps.

Prices upon application.

**Type LCE-24 Crouse-Hinds Floodlight Projectors**  
Medium and Long Range  
*Schedule F*



The increased efficiency of these projectors allows large areas to be lighted with a smaller number of projectors, with a corresponding decrease in installation cost, lighting load and maintenance costs. When projectors are used for lighting railroad or factory yards, the area immediately beneath the projector between the tower and the place where the main beam strikes is often quite dark. These projectors can be supplied with a large hood which reflects part of the stray light above the beam to the ground. Hood also prevents dust and soot from falling on the lens.

Cast aluminum alloy housing; dust-tight and weatherproof.

Crystal glass reflector with smooth or hammered surface, 24-inch diameter.

Porcelain Mogul screw base lamp receptacle. (Cat. No. HL8751.)

Clear, convex, Pyrex heat-resisting lens. Spread or diffusing convex, heat-resisting lens furnished without additional charge, if specified on the order.

Lamps, 750 to 2000-watt, PS-52 bulb; 1000 or 1500-watt, G bulb.

Case, natural aluminum finish; base and trunnion, galvanized.

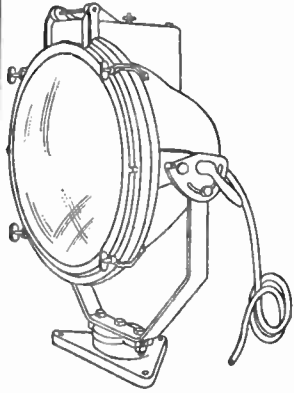
Type	Reflector	Cat. No.	LAMP		Wt., Lbs.
			Watts	Bulb	
LCE-24	Smooth	40466	750 to 2000	PS-52	148
LCE-24	Smooth	40468	1000 or 1500	G	148
LCE-24	Hammered	40467	750 to 2000	PS-52	148

Prices upon application.

## Type LCE-1120 Crouse-Hinds Floodlight Projectors

Schedule F

### Medium and Long Range



For use with 1500-watt lamps. The use of this projector reduces the installation cost, lighting load and maintenance cost for the illumination of large areas. Can be arranged with plain, spread or diffusing lens.

Has a 20-inch, crystal mirrored glass reflector either narrow or wide beam. The wide beam is recommended for everything except very long range projection. Mogul screw base lamp receptacle (Cat. No. HL7012).

Has 3-way focusing mechanism, operated from the outside of the case.

Steel trunnion mountings on cast feraloy base. Both horizontal and vertical adjustable stops are provided. The floodlight can be turned around or tipped over for convenience in relamping and cleaning, and returned to its exact original setting. Special bases for various mounting conditions can be furnished.

A 3-foot lead of 2-conductor, rubber-covered cable is furnished. The cable enters the housing through a water-tight stuffing box. Each wire covered with slow-burning insulation.

Case is natural aluminum finish; base and trunnion, galvanized finish.

Type	Reflector	Cat. No.	LAMP		Wt. Lbs.
			Watts	Bulb	
LCE-1120	Narrow Beam	41548	750 to 1500	PS-52	115
LCE-1120	Narrow Beam	41549	1000 to 1500	G	115
LCE-1120	Wide Beam	41550	750 to 1500	PS-52	115

Prices do not include incandescent lamps.

Prices upon application.

## Crouse-Hinds Underwater Floodlights

Schedule F

Developed for submersion in water, such as in fountain and swimming pool installations. Provided with 2 tapped holes for connection to 3/4-inch flexible drain hose.

Type FDS-12 is especially adapted to underwater lighting of swimming pools by wet-niche method. Wet-niche bracket mounting allows unit to be lifted from its brackets and raised to surface of pool for relamping. Can also be furnished with angle bracket mounting for fountains.

Types FDE and FDV provide adequate lighting for any size or type of fountain. Type FDE-12 has a trunnion and swivel base. Type FDV-12 has a servicing pedestal which allows floodlight to be raised above water for relamping when mounted just below surface of water in a fountain.

Has porcelain mogul screw base lamp receptacle (Cat. No. HL7136). Has a 12-inch silvered glass reflector.

Lamps are 500-watt, 115-volt, G-40 bulb. Can be arranged for use with 250-watt, G-30 bulb or 400-watt, G-30 bulb.

### With Positioning Stops and Brackets For Wet-Niche Installation

Type	Lens	Cast Aluminum		Cast Bronze	
		Cat. No.	Net. Wt.	Cat. No.	Net. Wt.
FDS-12	Plain	42025	30	42021	55
FDS-12	Spread	42071	30	42072	55
FDS-12	Diffusing	42073	30	42074	55

### With 2 Angle Brackets

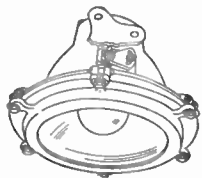
FDS-12	Plain	42027	30	42026	55
FDS-12	Spread	42075	30	42076	55
FDS-12	Diffusing	42077	30	42078	55

### With Trunnion and Base

FDE-12	Plain	42029	32	42028	57
FDE-12	Spread	42079	32	42080	57
FDE-12	Diffusing	42081	32	42082	57

### With Servicing Pedestal

FDV-12	Plain	42031	37	42030	62
FDV-12	Spread	42083	37	42084	62
FDV-12	Diffusing	42085	37	42086	62



Type FDS

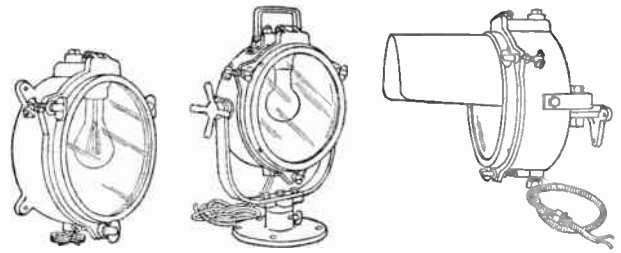
Cat. No. does not include lamps.

Prices upon application.

## Crouse-Hinds Floodlights

### Short and Medium Range

Schedule F



Type RM

Type RME

Type RMU with Hood

Types RM and RMU Floodlights meet lighting requirements in roundhouses, steel mills, on construction work or wherever stationary, strong, gas and moisture-proof illuminating units are desired. When mounted in roundhouses or other buildings where corroding vapors circulate, they offer full protection against the damage to which exposed lights and wiring systems in such locations are subjected.

Type RM floodlights are designed for fastening to a flat surface and projecting light at right angles to the plane of the surface. Fastened by 4 lugs on back.

Type RMU floodlights have a universal wall bracket, which allows the beam of light to be directed where desired.

Type RME is a rugged, cast feraloy floodlight for portable use. Is trunnion mounting. Used where it is desired to transport the light to the job, also when working under eaves and locomotives.

Has porcelain enameled steel reflector. Porcelain enameled reflector used for wide spread beam and short range. Hammered glass reflector concentrates light for projection to a greater distance.

Porcelain, medium screw base lamp receptacle (Cat. No. HL674). Mounted on bracket adjustable with screw-driver.

Wiring connections for Types RM and RMU, 3/4-inch threaded hubs at top and bottom. A pipe plug is furnished to close the unused hub. For Types RM and RME, two 3-foot leads of No. 14 gauge stranded wire. For Type RMU, 30 inches steel armored cable with 2 CGB285 connectors.

Cast feraloy housing. Gas and moisture proof. Cast feraloy door frame, gasketed to exclude gas, moisture and dust from interior. Held in place by 3 swivel bolts with capped wing nuts.

Clear, convex, heat-resisting lens. Spread or diffusing convex, heat-resisting lens can be furnished.

For 10-inch floodlight, 60 or 100-watt A bulb lamps; for 12-inch floodlight, 150 or 200-watt PS bulb lamps.

Baked black enamel finish.

### Type RM-10-60 or 100-Watt-10-Inch Reflector

Cat. No.	Reflector	DIMENSIONS, INCHES			Wt. Lbs.
		Width	Height	Depth	
29788	Porcelain Enameled	14	5 7/8	20	
40407	Hammered Glass	14	5 7/8	20	

### Type RM-12-150 or 200-Watt-12-Inch Reflector

26067	Porcelain Enameled	16 5/8	6 1/16	30
40408	Hammered Glass	16 5/8	6 1/16	30

### Type RME-10-60 or 100-Watt-10-Inch Reflector

29803	Porcelain Enameled	14	20 1/4	5 3/4	35
40411	Hammered Glass	14	20 1/4	5 3/4	35

### Type RME-12-150 or 200-Watt-12-Inch Reflector

29480	Porcelain Enameled	16 3/4	22 3/4	6 5/16	45
40412	Hammered Glass	16 3/4	22 3/4	6 5/16	45

### Type RMU-10-60 or 100-Watt-10-Inch Reflector

29793	Porcelain Enameled	12 5/8	14 13/16	5 3/4	27
40409	Hammered Glass	12 5/8	14 13/16	5 3/4	27

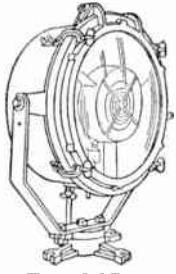
### Type RMU-12-150 or 200-Watt-12-Inch Reflector

29657	Porcelain Enameled	15	17 1/4	6 5/16	37 1/2
40410	Hammered Glass	15	17 1/4	6 5/16	37 1/2

Prices upon Application

**Crouse-Hinds Incandescent Searchlights**

*Schedule F*



Type DCE-16

Designed for long range or spotlight use.

Has 16-inch commercial precision mirrored glass reflector (Cat. No. HL4132).

Type DCE-16 furnished with 2 feet weatherproof cable; Types DCX-16 and DCY-16 with slip rings in the pedestal except for low voltage lamps, in which case flexible leads are furnished.

Clear, plain, convex, heat resisting lens. Diameter 16 $\frac{1}{8}$  inches.

Length of standard control of stem of Type DCX-16 below base, 5 inches.

Type	Mounting	Cat. No.	Lamp Receptacle	Wt., Lbs.
DCE-16	Trunnion	41353	Mogul Screw	97
DCE-16	Trunnion	41354	Mogul Prefocus	97
DCE-16	Trunnion	41983	Bipost	97
DCX-16	Pilot House Control	41356	Mogul Prefocus	165
DCX-16	Pilot House Control	41984	Bipost	165
DCY-16	Pedestal	41355	Mogul Prefocus	155
DCY-16	Pedestal	41985	Bipost	155

**Lamps—For Continuous Operation**

Watts	Bulb	Volts	Life	Service	Base	Burning Position	Lt. Lgth., In.	Gen.
500	G-40	115	800	Floodlight	Mogul Screw	*B.D.	4 $\frac{1}{4}$	
1000	G-40	115	800	Floodlight	Mogul Screw	*B.D.	5 $\frac{3}{16}$	
1000	T-20	115	500	Air Beacon	Bipost	†B.D.	4	

**Searchlight Lamps—For Intermittent Service**

420	G-25	12	100	Headlight	Mogul Prefocus	*B.D.	11 $\frac{1}{16}$	
900	T-20	30	50	Projection	Mogul Prefocus	B.D.	3 $\frac{7}{16}$	
1000	T-20	115	50	Projection	Mogul Prefocus	†B.D.	3 $\frac{7}{16}$	

\*Searchlight can operate in any position with this lamp.

†Searchlight should not be tipped up or down more than 25° with this lamp.

Catalogue numbers do not include incandescent lamps.

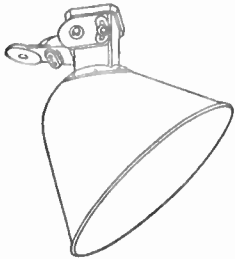
Type lamp to be used must be specified when ordering.

Prices upon application.

**Type MPA-1 Crouse-Hinds Floodlights**

**Short Range—Open Type**

*Schedule F*



With Cross-Arm Base

Short range, wide angle floodlight designed for illumination of gasoline service stations, tennis courts, playgrounds, swimming pools, parking lots, football fields and similar places. Has Mogul screw base skeleton lamp receptacle (Cat. No. HL7012).

The cross-arm mounting bracket of cast aluminum terminates in a round plate with a hole for  $\frac{3}{4}$ -inch bolt in the center. The bracket can be bolted to a wood or steel cross-arm.

The slip-fitter mounting consists of a cast aluminum bracket and slip-fitter for 1 $\frac{1}{2}$ -inch pipe.

The steel pole-bracket is drilled for two  $\frac{5}{8}$ -inch bolts or lag screws. Can be fastened to side of a wood pole or building.

Lamps are 1000, 1500 or 2000-watt, PS-52 bulb General Lighting Service. White bowl lamps can be used to reduce glare. Hard glass lamps are recommended as they reduce breakage caused by driving rain or snow.

Two leads, No. 12 asbestos-wrapped wire, attached to the lamp receptacle run through hollow support arm. Adapter cap for overhead wiring can be furnished with slip fitter mounting. Cross-arm and pole bracket mountings furnished with a wire outlet in bottom of bracket arm, which consists of a porcelain 1-wire cover; diameter of hole,  $\frac{5}{8}$  inch.

Type	Mounting	Without Auxiliary Reflector Cat. No.	With Auxiliary Reflector Cat. No.	Wt. Lbs.
MPA-1	1 $\frac{1}{2}$ -Inch Slip-Fitter	41660	41657	37
MPA-1	Cross-Arm	41731	41658	37
MPA-1	Pole-Bracket	41732	41659	37

No. HL3935, Overhead Feed Cap Only.

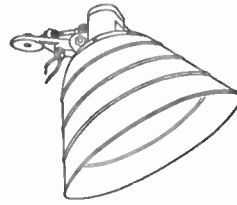
Prices do not include incandescent lamps.

Prices upon application.

**Type MPA-2 Crouse-Hinds Floodlights**

*Schedule F*

**2-Lamp—Open Type**



Cross-Arm Mounting

Particularly adapted to the lighting of baseball parks, football fields, swimming pools, play grounds, tennis courts and gasoline service stations. Its size, shape and reflecting surface combine to make an efficient unit. Can be mounted on wood or steel poles, cross arms, steel towers or on sides of buildings.

Has 2 Mogul screw base skeleton lamp receptacles (Cat. No. HL7012). The 30-inch reflector is of copper-bearing steel with a 3-layer mat white porcelain enamel finish inside and a blue porcelain enamel finish outside.

Cross-arm mounting bracket of cast fer alloy terminates in a round plate with a hole for a  $\frac{1}{2}$ -inch bolt in the center and a cast quadrant slot. Bracket can be bolted to cross-arm.

Slip-fitter mounting is for 2 $\frac{1}{2}$ -inch pipe. Furnished with a wire outlet so that wires can be brought through the steel pole and out at the slip-fitter. Slip-fitter is attached to the standard bracket with two  $\frac{1}{2}$ -inch cap screws which are furnished with it.

Pole-bracket mounting is  $\frac{1}{4}$ -inch pressed steel formed to fit the pole. It is attached to the standard bracket with two  $\frac{5}{8}$ -inch bolts or lag screws.

Three asbestos-wrapped wire leads attached to lamp receptacles, one wire being common; run through hollow bracket arm and are long enough to permit splicing to rubber-covered wire.

Two 750, 1000, 1500 or 2000-watt, PS-52-bulb, General Lighting Service lamps. White bowl lamps reduce glare; hard glass reduces breakage caused by driving rain or snow.

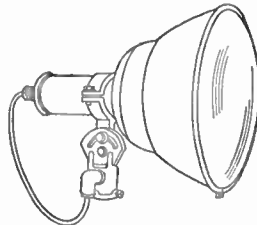
Type	Mounting	Cat. No.	Wt., Lbs.
MPA-2	Cross-Arm	41696	47
MPA-2	2 $\frac{1}{2}$ -Inch Slip-Fitter	41697	55
MPA-2	Pole-Bracket	41698	53

Prices do not include incandescent lamps.

Prices upon application.

**Crouse-Hinds Floodlights**

*Schedule F*



Designed for the illumination of football fields, indoor baseball fields, parking spaces, gasoline service stations, and other areas of similar nature. Can be furnished with heat-resisting clear lenses or without lenses.

Aluminum finish. Has Mogul screw base lamp receptacle (Cat. No. HL7012).

Lamps: 1000-Watt Floodlight—750 or 1000-watt, PS-52 bulb, 110-volt General Lighting Service lamps; 1500-watt, PS-52 bulb lamp can be used in the unit without lens; 500-Watt Floodlight—300 or 500-watt, PS bulb, 110-volt General Lighting Service lamps.

Furnished with 3 feet of 2-conductor duplex cable. This cable has a very heavy weatherproof rubber jacket. The individual wires are insulated with slow-burning insulation of Type AF construction. The cable enters the housing through a stuffing box with tapered rubber bushing. The rubber jacket is cut away where it enters the housing, leaving only the slow-burning insulation inside the unit.

Where a group of floodlights are to be connected to open wiring, these floodlights can be furnished with Type FBB-2 Condulets and short leads of asbestos-covered wire instead of the duplex cable. This can be done without extra charge if specified on the order.

Type	Mounting	With Lens		Without Lens	
		With Hood Cat. No.	Without Hood Cat. No.	With Hood Cat. No.	Without Hood Cat. No.
MDB-16	1-in. Slip-Fitter	41740	41741	30	41746 41747 24
1000-	1 $\frac{1}{2}$ -in. Slip-Fitter	41742	41743	30	41748 41749 24
Watt	Threaded-Fitter	41744	41745	30	41750 41751 24
MDB-14	1-in. Slip-Fitter	41767	41770	26 $\frac{1}{2}$	41773 41776 23
500-	1 $\frac{1}{2}$ -in. Slip-Fitter	41768	41771	26 $\frac{1}{2}$	41774 41777 23
Watt	Threaded-Fitter	41769	41772	26 $\frac{1}{2}$	41775 41778 23

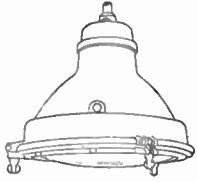
Prices do not include incandescent lamps.

Prices upon application.

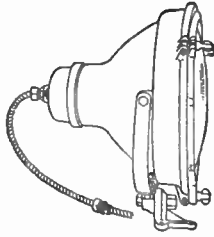


## Crouse-Hinds Industrial Lighting Units

Schedule F



Type RLS



Type RLU

Types RLS and RLU Industrial Lighting Units meet lighting requirements in roundhouses, steel mills or wherever a strong, stationary, gas and moistureproof illuminating unit is desired. When mounted in roundhouses or other buildings where corroding vapors circulate, they offer full protection against the damage to which exposed lights and wiring systems in such locations are subjected.

Reflectors are porcelain enameled steel. Size 12 or 16 inches.

Medium screw base lamp receptacles for Types RLS-12 and RLU-12 (Cat. No. HL8079); skeleton mogul screw base for Types RLU-16 and RLS-16 (Cat. No. HL7012).

Type RLS has suspension mounting. Type RLU has universal wall bracket.

Cast feraloy or cast silicon aluminum alloy housing; gas and moisture-proof.

Wiring connection of Type RLS, direct to conduit by 3/4-inch pipe. Type RLU connects to conduit by a flexible, steel armored cable and 2 CGB285 connectors, making a gas and vaporproof connection.

Clear, convex, Pyrex, heat-resisting lens. Diffusing, convex, heat-resisting lens can be furnished.

Cast feraloy or cast silicon aluminum alloy door frame held against an asbestos gasket by 3 swivel bolts and capped wing nuts. Door is hinged on one side.

Cast aluminum door and frame, natural aluminum finish; cast feraloy door and frame, black enamel finish.

### Type RLS-12—12-Inch Reflector 100 to 200-Watt

Cast Feraloy Cat. No.	Wt., Lbs.	Cast Aluminum Cat. No.	Wt., Lbs.	DIMENSIONS, INCHES			LAMP	
				Diameter	Height	Size of Pipe	Watts	Bulb
29769	40	29775	20	15 3/8	16 1/2	3/4	100	PS or A
29768	40	29774	20	15 3/8	16 1/2	3/4	150	PS-25
29767	40	29773	20	15 3/8	16 1/2	3/4	200	PS-30

### Type RLS-16—16-Inch Reflector 300 or 500-Watt

29726	64	29732	32	19 3/8	18 3/4	3/4	300 or 500	PS
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### Type RLU-12—12-Inch Reflector 100 to 200-Watt

Cast Feraloy Cat. No.	Wt., Lbs.	Cast Aluminum Cat. No.	Wt., Lbs.	DIMENSIONS, INCHES			LAMP	
				Diameter	Width	Height	Watts	Bulb
29772	47	29778	28	15 3/8	18 3/4	17 5/8	100	PS or A
29771	47	29777	28	15 3/8	18 3/4	17 5/8	150	PS-25
29770	47	29776	28	15 3/8	18 3/4	17 5/8	200	PS-30

### Type RLU-16—16-Inch Reflector 300 or 500-Watt

29729	73	29735	42	19 3/8	23	19 3/8	300 or 500	PS
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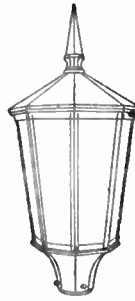
Catalogue numbers do not include lamps.

Prices Upon Application

## Type GCP-14 Crouse-Hinds Lantern Floodlights

Schedule F

### With Floodlighting Reflector



With 4-Inch Slip-Fitter

An ornamental type floodlight designed for illumination of buildings, gasoline service stations and other subjects where the appearance of the lighting unit is a factor of importance. Daytime appearance is that of an ornamental street lantern; at night the reflector on the inside transforms it into a powerful floodlight.

This lantern is listed in 2 ways. Form A for use in lighting buildings or other subjects where beam is directed above the horizontal. Sufficient light is reflected below horizontal with this type to illuminate lower portion of buildings. Has a heat-resisting top canopy. A horizontal adjustment of 45° is provided so that the beam can be turned to strike building at an angle, and still have one side of lantern parallel with building. Form B lantern furnished with one side panel of heat-resisting glass. Beam passes through this panel and the horizontal adjustment of reflector is locked. This type is intended for lighting ground areas and low buildings, such as gasoline service stations.

Has 14-inch hammered mirrored glass reflector (Cat. No. HL3862). Main floodlight lamp receptacle is porcelain Mogul screw base (Cat. No. HL2128); auxiliary lamp, porcelain medium screw base (Cat. No. HL6019); unit without reflector, Mogul screw base or series film cutout. Two leads of asbestos-wrapped wire are connected to lamp receptacle and extend one foot through bottom lantern. Frame is of cast aluminum alloy. Metal portions painted green on outside.

Usually mounted at curb line on ornamental posts when used for lighting buildings. Should be mounted from 8 to 14 feet above ground, poles spaced not closer than 20 feet apart. Table below gives maximum distances between poles for different sidewalk widths, for single units.

Sidewalk Width	10 feet	15 feet	20 feet
Maximum Spacing Between Poles	30 feet	45 feet	60 feet

Slip-fitter mountings for 4-inch pipe or 7-inch ornamental pole top. An adapter can be supplied for 4-inch slip-fitter to take 2 1/2-inch pipe. A cast feraloy double bracket can be supplied with slip-fitter for 4-inch pipe at bottom and arranged to take 2 Type GCP-14 lanterns with 4-inch slip-fitter bases. An ornamental cast feraloy base can be furnished with or without a pole. Top of base is tapped for 4-inch pipe. Base is attached to a concrete foundation by four 3/4-inch bolts, spaced 90° apart on a circle of 6 5/8-inch radius.

Main floodlight lamps are 300 to 1500-watt, PS bulb. When used with HL3252 adapter, 500 to 1500-watt, G bulb lamps can be used. Auxiliary lamp, any medium screw base lamp up to 200-watt, PS-30 bulb.

### With Wide Beam Reflector

Type	Description	With 4-Inch Slip-Fitter Base Cat. No.	With 7-Inch Slip-Fitter Base Cat. No.	Wt., Lbs.
GCP-14	Form A—For Lighting above Horizontal	41322	41323	120
GCP-14	Form B—For Lighting below Horizontal	41324	41325	120

### With Narrow Beam Reflector

GCP-14	Form A—For Lighting above Horizontal	41402	41401	120
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Catalogue numbers do not include incandescent lamps.

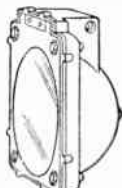
Prices upon Application

**Type RDC-8 Crouse-Hinds Floodlights**  
For Lighting Pits, Auto Lifts and Underpasses

Schedule F



Form F



Form W

This floodlight is designed for mounting in concrete. It is made in 2 styles, one for floor mounting and the other for wall mounting.

Form F is designed for mounting in the floor. It is water-tight, with a door that overlaps the case, and yet the projection above the concrete is only about 3/16 of an inch. The surface of the door has a rough pebbled surface which prevents its becoming slippery. Has a wide, flat gasket between the door and the case. It is provided with a flat lens which is heavy enough to allow it to be stepped on or driven over and offers great resistance to tools or other articles that might be dropped on it. Can also be furnished with a new type of glass lens which has been treated to increase its resistance both to impact and to a static load. It is approximately 4 times as strong as any other heat-resisting glass, and is practically unbreakable under any conditions normally encountered. This special glass is available only in the plain type.

Any unit installed in the floor should be provided with a 1/2-inch drain pipe connecting the tapped drain hole in the bottom of the housing with a sewer. This provides a drain for condensation and maintains atmospheric pressure inside the unit. If connection to a sewer is not practical the drain pipe can be run several feet into the ground into a hole filled with crushed stone.

Form W is similar to Form F, except it is provided with a hinged and flush door, so that it can be set absolutely flush with the concrete wall. It can also be mounted on the wall by using the L bracket and mounted on the ceiling by using the Z bracket. This unit provides lighting for pits, underpasses, tunnels, washracks, etc. The refracting lenses can be set to refract the light either up or down.

Has an 8-inch porcelain enameled steel reflector. A silvered glass, narrow beam reflector can be furnished. Porcelain medium screw base lamp receptacle (Cat. No. HL6019).

Two 3/4-inch hubs are provided, one on each side of the housing so that wiring can be carried through the unit when several floodlights are mounted in a row. The reflector should be removed from the floodlight when wiring. Wire with slow-burning insulation must be used.

Form W has 8 3/8-inch flat, heat-resisting glass or flat refracting lens which projects the light in one direction. Form F has 8 1/2-inch flat, heat-resisting glass, impact-resisting, or flat, refracting lens.

Lamp, 100-watt, A-23 or PS-25 bulb; 150-watt, PS-25; or 200-watt, PS-30 bulb. Lamp receptacle bracket is adjustable and can be set for any of these lamps by loosening 2 screws and sliding the bracket until lamp filament is at the center of reflector. Unless otherwise specified, all units furnished with lamp receptacle set for 200-watt lamps.

Black enamel finish.

**Form W—Wall Mounting**

Type	Description	Without Grid Cat. No.	With Grid Cat. No.	Wt. Lbs.
RCD-8	Plain, Flat Lens	41332	41409	30
RCD-8	Refracting Lens	41334	41410	30

**Form F—Floor Mounting**

Type	Description	With Standard Glass Cat. No.	With Impact-Resisting Glass Cat. No.	Wt. Lbs.
RCD-8	Plain, Flat Lens	41424	41427	30
RCD-8	Refracting Lens	41425	.....	..

**Brackets Only**

**For Forms F and W Floodlights**

Cat. No.	Description	Cat. No.	Description
HL4242	L Bracket	HL4243	Z Bracket

Type RCD-8 can be furnished in explosion proof type (Type RCDE-8) for use in hazardous locations.

Prices do not include incandescent lamps.

Prices upon Application

**Crouse-Hinds Type RCDE-8 Floodlights**  
Explosion Proof—For Use in Hazardous Locations

Schedule F



Portable Unit

Designed to meet the requirements of an explosion-proof lighting unit. Recommended for lighting automobile greasing pits and lifts, and also for general use in hazardous locations. Can be supplied with mountings for fixed installation or portable use.

Can be furnished with trunnion mounting and either with or without carrying handle and wheel base. Recommended for use around oil refineries, chemical plants, and for lighting spray booths from the outside. For short range lighting, the 8-inch porcelain enameled steel reflector should be used; for longer range or for spotlight applications, the silvered glass reflector provides a narrower beam.

Has medium screw base receptacle (Cat. No. HL 6019).

The wiring chamber is separated from the floodlight housing by a wall and the point where the wires pass through the wall is sealed with a special compound. Two 3/4-inch hubs are provided, one on each side of the wiring chamber. Ample room is provided for splicing. In some cases, particularly when the unit is mounted in the floor it is advisable to fill the wiring chamber with compound after making the splice. A threaded cover is provided for the wiring chamber. Thirty feet of 3-conductor No. 16 cable is furnished.

Plain, impact and heat-resisting 8 1/2-inch lens (Cat. No. HL 5196). A refracting screen (Cat. No. HL5413), designed to refract the light in one direction, can be furnished. A heavy steel grid is provided over the lens.

Lamps are 100-watt, A-23 or PS-25; 150-watt, PS-25; or 200-watt, PS-30 bulb. For long range, narrow beam, 250-watt, G-30 bulb floodlight service lamp should be used. Unless otherwise specified, all units are furnished with lamp receptacle set for 200-watt lamp; if 250-watt lamp is to be used a special lamp receptacle and adapter are supplied.

**With Trunnion Mounting—For Permanent Installation**

Glass Reflector	Sched-ule	Porcelain Enameled Reflector	Sched-ule	Case	Door
41719	F	41720	F	Feraloy	Aluminum
41721	F	41722	F	Feraloy	Brass
41723	F	41724	F	Aluminum	Aluminum
41725	F	41726	F	Brass	Brass

**Portable Unit**

With handle, wheel base, 30 feet of 3-conductor No. 16 cable and BP-49, 2-wire, 3-pole plug.

41727	F	41728	F	Aluminum	Aluminum
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Any of the above units with glass reflector can be arranged for use with 250-watt, G-30 bulb lamps without extra charge, if specified on the order.

Catalogue numbers do not include incandescent lamps.

Prices upon application.

**Smooth Glass Reflectors**

Diameter Inches	Used on Types	Cat. No.	Each
11 1/2	ADA-12, ADR-12. For G-Bulb Lamp.	HL 439	\$9.00
14	ADA-14.....	HL2889	21.00
14	FDE-12, FDS-12, FDV-12.....	HL6325	25.00
14	GCP-14.....	HL4250	22.00
16	ADA-16.....	HL2337	23.00
16	DCE-16, DCX-16, DCV-16.....	HL4132	65.00
20	LCE-1120.....	HL4481	35.00
24	LCE-24.....	HL8518	45.00

**Hammered Glass Reflectors**

9 5/8	RM-10, RME-10, RMU-10.....	HL9183	\$9.00
11 1/2	ADA-12, ADR-12. For PS-Bulb Lamp.....	HL 749	9.00
12	RM-12, RME-12, RMU-12.....	HL9181	14.00
14	ADA-14.....	HL2890	21.00
14	GCP-14.....	HL3862	22.00
16	ADA-16. For PS-Bulb Lamp.....	HL2339	23.00
20	LCE-1120.....	HL4482	45.00
24	LCE-24.....	HL9119	45.00

**Porcelain Enameled Steel Reflectors**

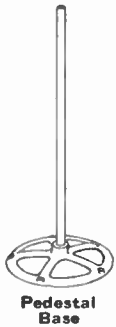
10	RM-10, RME-10, RMU-10.....	HL 806	\$3.25
12	RM-12, RME-12, RMU-12.....	HL5322	7.00
12	RLS-12, RLU-12.....	HL8086	3.00
14	RCD-8, RCDE-8.....	HL4043	2.00
16	RLS-16, RLU-16.....	HL7867	9.00

## Special Bases and Brackets For Crouse-Hinds Floodlight Projectors

## Crouse-Hinds Floodlight Projector Lenses

### Bases Schedule F

### Schedule F



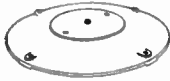
Pedestal Base



Bolt Base For Types ADA-14, ADE-14, ADA-16



Wheel Base for Types ADA-14, ADE-14, ADA-16



Cast Aluminum Alloy Wheel Base for Types LCE-1120, LCE-24

### Bolt Style

Cat. No.	When Purchased Separately Each	When Purchased With Projector In Place of Regular Base Each	For Floodlights	
			No Extra	ADA-14, ADE-14, ADA-16
HL3246	\$3.00	No Extra		

### Cross-Arm Style

HL3193	\$3.00	No Extra	ADA-14, ADE-14, ADA-16
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### Ornamental Style

45889	.....	.....	All Types
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### Pedestal Style

HL3720	\$7.50	Add \$4.50	ADA-14, ADE-14, ADA-16
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### Railroad Style

HL2693	\$3.00	No Extra	ADA-14, ADE-14, ADA-16
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### Slip-Fitter Style

*HL3091	\$4.00	No Extra	ADA-14, ADE-14, ADA-16
*HL3247	6.00	No Extra	LCE-1120, LCE-24
†HL3681	6.00	No Extra	LCE-1120, LCE-24

### U-Bolt Style

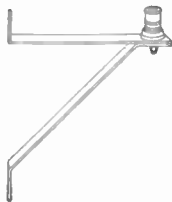
HL2714	\$3.75	No Extra	ADA-14, ADE-14, ADA-16
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### Wheel Style

HL9462	\$9.00	Add \$4.00	LCE-1120, LCE-24
HL3245	3.00	No Extra	ADA-14, ADE-14, ADA-16

\*4-inch size.  
†2½-inch size.

### Brackets



Pole Bracket

### Ornamental Style

Cat. No.	When Purchased Separately Each	When Purchased With Projector in Place of Regular Base Each	For Floodlights	
			No Extra	For 2 LCE-1120 or LCE-24 For 2 ADA-14, ADE-14 or ADA-16
HL3123	\$32.00	.....		
HL3685	32.00	.....		

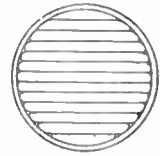
### Pole Style

HL2630	\$9.00	Add \$4.00	LCE-1120, LCE-24
HL2632	7.50	Add 4.50	ADA-14, ADE-14, ADA-16

†When used with types LCE-1120 or LCE-24, purchase floodlights with HL3681 slip-fitter base. When used with type ADA, purchase floodlights with slip-fitter mounting.



Diffusing Lens



Spread Lens

All floodlight projectors listed are supplied with plain, convex, Pyrex, heat-resisting lenses. Unless another lens is specified, plain lens will be furnished. The plain lens does not alter the beam spread of the floodlight in any way.

It is often desirable to increase the natural spread of a floodlight beam either in all directions or in one direction only. To meet this condition, two different types of lenses as described below can be supplied. There is no additional charge for these lenses.

The convex, heat-resisting diffusing lens spreads the natural beam both horizontally and vertically, giving a larger light spot. This lens is used where the natural spread from the floodlight is not sufficient to cover the area desired. Diffusing lenses should not be ordered with any projector arranged for use with concentrated filament lamps, as these lamps are used to secure a narrow beam spread.

The convex, heat-resisting, spread lens spreads the light at right angles to the direction of the ribs, leaving the spread in the other direction the same. The resulting beam is elliptical in shape. When the ribs are vertical, the beam is spread horizontally and when they are horizontal, the beam is spread vertically. The lens can be set at the factory for either spread, and the order should specify which is desired. This type of lens is useful when lighting rectangular areas. The nominal beam spread produced with the standard spread lens is 45 to 50 degrees. The actual beam spread depends on the characteristics of the floodlight with which the lens is used.

To obtain the Cat. No. and list price of any lens, refer to table No. 1 for the diameter of lens required to fit the floodlight; then under table No. 2 will be found the Cat. No. and price of the style of lens of that diameter.

Table No. 1—Lens Diameters

Type	Diameter Inches	Type	Diameter Inches	Type	Diameter Inches
ADA-12	12	LCE-24	24¼	RLU-16	16¾
ADA-14	14	RAS-12	12	RM-10	10
ADA-16	16⅞	RAS-14	14	RM-12	12
ADE-14	14	RAS-16	16⅞	RME-10	10
FDA-12	12	RLS-12	12	RME-12	12
FDV-12	12	RLS-16	16⅞	RMU-10	10
LCE-20	1120	RLU-12	12	RMU-12	12

Table No. 2—Lens Prices

Diameter Inches	Color	Plain Cat. No.	Spread Cat. No.	Diffusing Cat. No.	Purchased Separately Each
10	Clear	HL6813	HL6815	HL6814	\$4.00
12	Clear	HL6802	HL6811	HL6803	5.00
12	Red	HL2005	HL2016	HL2012	8.00
12	Amber	HL8130	HL2019	HL2015	8.00
12	Green	HL2009	HL2018	HL2014	8.00
12	Blue	HL2006	HL2017	HL2013	8.00
12	Purple	HL2051	HL2054	HL2052	8.00
14	Clear	HL9151	HL3090	HL9153	6.50
16⅞	Clear	HL6804	HL6810	HL6805	9.50
16⅞	Red	HL241	.....	.....	13.00
16⅞	Amber	HL244	.....	.....	13.00
16⅞	Green	HL242	.....	.....	13.00
16⅞	Blue	HL243	.....	.....	13.00
20	Clear	HL9016	HL9018	HL9017	17.00
24½	Clear	HL9019	HL9021	HL9020	35.00
25	Clear	HL2156	HL2153	.....	40.00



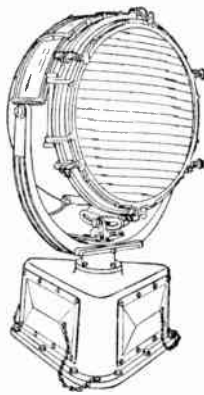
**Type DCB24 Crouse-Hinds Airport Revolving Beacons**

Conforms to requirements of the Department of Commerce. Housing, trunnion arms and base are cast aluminum alloy.

Optical system consists of 24-inch diameter, 10-inch focus precision parabolic glass reflector and 1000-watt, 115 or 30-volt, T20-bulb airway beacon lamp. Two incandescent lamps, mounted in an automatic lamp-changer, are used.

The front lens is a 1-piece, convex, heat-resisting roundel which produces a double beam of light. The main beam, consisting of 85% of the reflected light, passes straight through the lens, while the remaining beam is directed upward 25°.

Beacon revolves at 6 r.p.m.



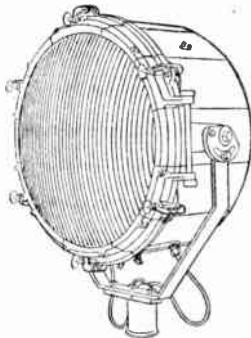
**With Automatic Lamp-Changer**

Cat. Nos.		Description	Weight Pounds
115-V. A.C.	30-V. 60-Cy. A.C.		
40523	40527	With Lamp-Changer Only	311
40895	40896	With Zenith Light	322
40774	40897	With Zenith Light and On Course Flasher	334
40898	40901	With Tell-Tale Lamp Circuit	312
40899	40902	With Zenith Light and Tell-Tale Circuit	323
40900	40903	With Zenith Light, On Course Light Flasher, and Tell-Tale Lamp Circuit	335
40904	40907	With Red Indicating Light on Top	314
40905	40908	With Zenith Light and Red Indicating Light on Top	325
40906	40909	With Zenith Light, On Course Light Flasher, and Red Indicating Light	337

**Without Automatic Lamp-Changer**

40524	41032	Revolving Beacon Only	307
40526	41033	With Zenith Light	318
40530	41034	With Zenith Light and On Course Flasher	331

**Type DCE-24 Crouse-Hinds Airport Floodlights**  
*Schedule F*



Type DCE-24 Airport Floodlight is used to light the landing area of an airport with from 3 to 8 floodlights grouped together, and the beams overlapped.

Furnished with a commercial precision mirrored glass reflector, 25 inches in diameter.

The housing is cast aluminum non-corroding alloy, one-piece, non-ventilated, dust-tight and weatherproof.

The door frame is hinged at side and clamped to the housing with 6 rugged C clamps.

Spread convex heat-resisting lens giving horizontal beam spread of approximately 40° or 80° can be furnished.

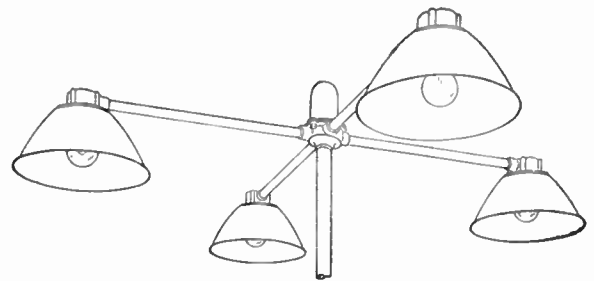
The focusing mechanism is 3-way, operated from outside of housing.

Louvers or vanes are attached to the door frame and are designed to cut off all direct lamp rays above the horizontal.

Type	Cat. No.	Description	LAMP			Wt. Lbs.
			Watts	Volt	Bulb	
DCE-24	40775	With 40° Spread Lens	3000	32	GT-38	122
DCE-24	40783	With 80° Spread Lens	3000	32	GT-38	122

Prices upon application.

**Type APW-3 Crouse-Hinds Airport Wind Cone Fixtures**



Every airport should be equipped with one or more wind direction indicators so that a pilot taking off or landing can readily ascertain the wind direction.

The wind direction indicator should be illuminated at night and the Crouse-Hinds Type APW-3 wind cone fixture is correctly designed to illuminate the wind cone. It consists of four weatherproof condulets with suitable deep bowl reflectors for 100-watt lamps, and an obstacle light mounted in the center of the cross.

The obstacle light is tapped on the bottom for a 1-inch supporting pipe, and has four 3/4-inch hubs 90° apart for the arms supporting the condulets with reflectors.

The length of the arms between the center obstacle light and the condulets on the arms should be governed by the length of the wind cone and the distance the cone is below the lighting units. Arms from 2 to 4 feet long are necessary.

Reflectors take 100-watt, 115-volt, A23-bulb lamps. Obstacle lights take 60-watt, 115-volt, A21-bulb lamps.

Cat. No.	Description	Weight Pounds
APW-3	Wind Cone Fixture Complete, Less Conduit	30
VAPX32175	Obstacle Light Only	4 3/4
V2847-S4	Condulet and Reflector Only	6 1/2

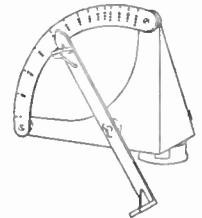
Prices upon application.

**Crouse-Hinds Ceiling Height Projectors and Indicators**

*Schedule F*



**Type DCE-14 Projector with Flange Base**



**Ceiling Height Indicator**

Every airport should be equipped with a ceiling projector and a ceiling height indicator by means of which the ceiling, or height of the clouds above ground, can be measured.

Projector is a powerful searchlight, the beam of which is pointed upward to the clouds, and indicator is a quadrant graduated directly in feet.

Projector has cast aluminum alloy housing, 14-inch diameter parabolic glass reflector, heat-resisting lens.

System of louvers cuts off all spill light.

**Type DCE-14 Ceiling Height Projector**

Cat. No.	Description	LAMP			Wt. Lbs.
		Watts	Volt	Bulb	
40923	With 4-Inch Slip-Fitter	500 or 1000	115	T-20	90
40514	With Flange Base	500 or 1000	115	T-20	90

**Ceiling Height Indicator**

Cat. No.	Description	Wt. Lbs.
40539	With 4-Inch Screw-Fitter	55

Catalogue numbers do not include incandescent lamps. If specified, Type DCE-14 projector can be equipped with lamp receptacle for use with prefocused base lamps.

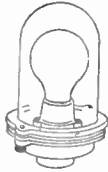
Prices upon application.

## Crouse-Hinds Airport Boundary, Obstacle and Approach Lights

For Series or Multiple Circuits  
Schedule F



No. VAW5440



No. VAP3170



No. VAP6491

It is customary to outline a landing field with boundary lights so that a pilot will know the shape and extent of the field. These boundary lights should either have frosted globes or be used with frosted lamps.

All multiple lamps which are used in boundary light circuits have inside frosted bulbs so that clear enclosing globes are desirable.

Red globes should be used on all obstacle lights. Green globes should be used on approach lights to mark the best approaches to the field.

Housing is cast aluminum. Guards can be furnished for the fixtures equipped with the plain globes. No guards are available for the units with the Holophane globes.

In all of these fixtures the globe seats on a rubber gasket. In the case of the plain globe units another gasket is used between the globe flange and the retaining ring or guard to further protect the glass.

Sufficient space is provided in the base of all units for convenience in making the electrical connections.

### Series Circuit

Take 6.6-ampere, 600 or 1000-lumen, S-24½ clear bulb lamp.

#### Plain Globe—1½-Inch Hub

Description	COMPLETE		
	Frosted Globe	Green Globe	Red Globe
Without Guard.....	VAP5471	VAP5472	VAP5475
With Guard.....	VAP5491	VAP5492	VAP5495

#### Plain Globe—2-Inch Hub

Without Guard.....	VAP6471	VAP6472	VAP6475
With Guard.....	VAP6491	VAP6492	VAP6495

#### Holophane Globe—1½-Inch Hub

Description	COMPLETE			
	No. Globe	Clear Globe	Green Globe	Red Globe
Guard Cannot be Furnished	VAW544	VAW5440	VAW5442	VAW5445

### Multiple Circuit

Equipped with medium screw receptacle.

#### Plain Globe—1-Inch Hub

25-Watt, 115-Volt, A-19 Bulb to 60-Watt, 115-Volt, A-21 Bulb

Description	COMPLETE		
	Clear Globe	Green Globe	Red Globe
Without Guard.....	VAP3170	VAP3172	VAP3175
With Guard.....	VAP3190	VAP3192	VAP3195

60 to 100-Watt, 115-Volt, A-25 to A-23 Bulb

Without Guard.....	VAP3370	VAP3372	VAP3375
With Guard.....	VAP3390	VAP3392	VAP3395

#### Holophane Globe—1-Inch Hub

25-Watt, 115-Volt, A-19 Bulb or 50-Watt, 115-Volt, A-21 Bulb

Description	COMPLETE			
	No. Globe	Clear Globe	Green Globe	Red Globe
Guard Cannot be Furnished	VAW311	VAW3110	VAW3112	VAW3115

#### Holophane Globe—1½-Inch Hub

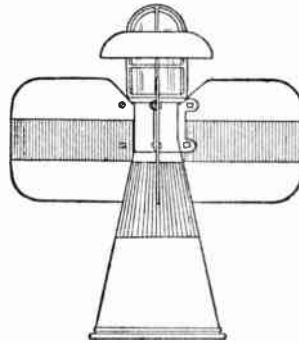
150-Watt, 115-Volt, PS-25 Bulb

Guard Cannot be Furnished VAW5 VAW5520 VAW5222 VAW5225  
The 100-watt multiple fixture with plain globe can be furnished with a 1½-inch hub if stated on the order.

Prices upon Application

## Type APB Crouse-Hinds Disconnecting Boundary, Obstacle, and Approach Lights

With Spring Clip Series Receptacle



This light consists of two parts: a ground receptacle which is permanently fixed in the ground, and to which the underground cable is connected; and the disconnecting boundary light takes the form of a cone of metal with suitable wings, on top of which the boundary light is mounted and, when struck by a ship, the light is merely pulled from its ground receptacle and falls over on the ground. The ground receptacle is of the series type, and when the disconnecting

boundary light is pulled from the receptacle, the circuit is immediately restored. A ship striking one of these lights cannot be seriously damaged, since only a little force is required to push the boundary light over.

The standard is a cone of metal 12 inches in diameter and 24 inches high, equipped with four wings 12 inches square, thus making it much more visible than the ordinary pipe standard. The light can be equipped with a guard around the enclosing globe and a reflector attached to the guard which collects the light from the lower half of the lamp and throws it downward on the cone and wings, thus materially increasing the visibility at night. The light is thus thrown not only on the wings and cone but also on the ground immediately adjacent to the boundary light. In the bottom of the cone there is a bead which engages three springs having sufficient tension to prevent the wind from blowing over the boundary light.

The ground receptacle which holds the short circuiting spring clip series receptacle also forms a support for the cone. The design of the plug and receptacle is such that surface water on the field cannot get to the contacts, and when the boundary light is knocked over a door comes down over the receptacle and closes the opening. The housing of the ground receptacle is made of heavy cast ferrous alloy finished in black enamel. The disconnecting boundary light is made of cast aluminum together with a cast bronze guard and cast aluminum reflector. The cone and wings are made of lead-coated Armco Iron, or Keystone Copper Steel and will resist corrosion for a long time. The cable from the boundary light fixture to the disconnecting plug is extra heavy weatherproof cable, and the plug is equipped with a suitable watertight stuffing box. The cable is securely anchored to the boundary light. There is a hand hole in the side of the boundary light cone through which it is possible to reach the receptacle and insert the plug to complete the circuit.

A field one mile square can be bounded with Type APB disconnecting boundary lights without the use of line insulating transformers, resulting in a much cheaper installation on large fields.

Takes 600 or 1000-lumen, S24½-bulb, 6.6-ampere series lamps.

### With Ground Receptacle

Cat. Nos.		Description	Wt. Lbs.
With Reflector	Without Reflector or Guard		
40944	40377	Boundary Light, Frosted Enclosing Globe...	45
40945	40878	Boundary Light, Amber Enclosing Globe...	45
40946	40879	Approach Light, Green Enclosing Globe...	45
40947	40880	Obstacle Light, Red Enclosing Globe.....	45

### Without Ground Receptacle

HL2200	HL2093	Boundary Light, Frosted Enclosing Globe...	28
HL2201	HL2094	Boundary Light, Amber Enclosing Globe...	28
HL2202	HL2095	Approach Light, Green Enclosing Globe...	28
HL2203	HL2096	Obstacle Light, Red Enclosing Globe.....	28

### Ground Receptacle Only

HL2075	Complete with Housing for Disconnecting Lights....	17
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Cat. Nos. do not include incandescent lamps.

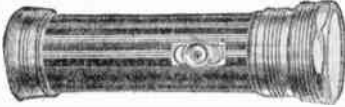
Prices upon application.

**No. 2639 Eveready Special Flashlights**



Case is silver and black striped. Size,  $6\frac{3}{4} \times 1\frac{1}{2}$  inches. Uses 2 No. 950 batteries and No. 7161 Mazda lamp. No. 2639, Complete with Batteries.....each \$ .45

**No. 2649 Eveready Focusing Flashlights**



Case is silver and black striped. Size,  $6\frac{1}{8} \times 1\frac{1}{2}$  inches. Uses 2 No. 950 batteries and No. 1161 Mazda lamp. No. 2649, Complete with Batteries.....each \$ .59

**No. 2604 Eveready Tubular Flashlights**

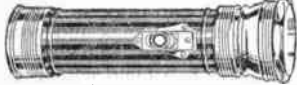


Furnished in black only. Bulls-eye lens; octagonal lens ring and safety-lock switch. Equipped with ring hanger. Size,  $6\frac{3}{4} \times 1\frac{1}{2}$  inches.

Use two No. 950 unit cells; No. 1161 Eveready Bulb; No. 14 Mazda Bulb. Unit package, 1. No. 2604, without Batteries.....each \$ .75

**No. 2671 Eveready Flashlights**

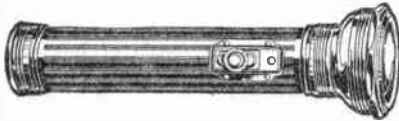
400-Foot Range



A 2-cell focusing flashlight, equipped with octagonal lens ring, lens retaining ring, safety-lock switch and ring hanger. Finish, black. Size,  $7 \times 1\frac{1}{2}$  in. Use unit cell No. 590; lamp No. 1611. Unit package, 4.

No. 2671, Without Batteries.....each \$ 1.05

**No. 2619 Eveready Miners' Flashlights**



Black metal case; beveled lens; octagonal lens ring and safety-lock switch.

Equipped with ring hanger.

Size  $1\frac{1}{2} \times 8\frac{7}{8}$  inches.

Use 3 No. 950 unit cells; No. 1162 Eveready Bulb; No. 17 Mazda Bulb.

Unit package, 1.

Price does not include batteries.

No. 2619.....each \$ 1.45

**No. 2672 Eveready Focusing Flashlights**

500-Foot Range



A 3-cell flashlight with beveled lens; octagonal lens ring with safety lock switch. Equipped with focusing device. Light can be focused to as sharp a point as desired merely by turning the end cap.

Has black metal case.

Size,  $1\frac{1}{2} \times 9\frac{1}{4}$  inches.

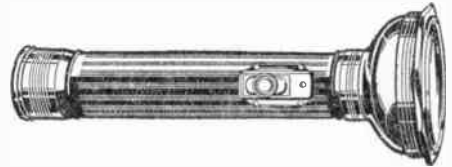
Use unit cell No. 950. Use lamp No. 1162.

Unit package, 1.

No. 2672, Without Batteries.....each \$ 1.45

**No. 2642 Eveready Focusing Flashlights**

800-Foot Range



A 3-cell flashlight equipped with focusing device and parabolic silvered reflector, non-rolling lens ring.

Black metal case with nickel-plated fittings.

Size,  $9\frac{1}{2} \times 1\frac{1}{2}$  inches.

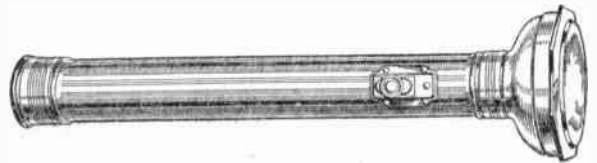
Use unit cell No. 950. Use lamp No. 1162.

Unit package, 1.

No. 2642, without Batteries.....each \$ 2.20

**No. 2645 Eveready Flashlights**

5-Cell, Focusing



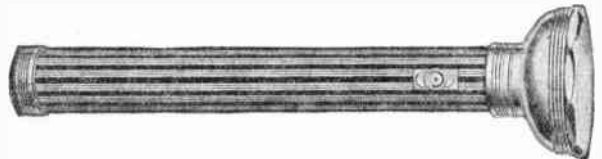
Used wherever exceptional power and range must be combined with portability. A few turns of end cap make light suitable for close up work, beam changing from a narrow penetrating shaft of light to a diffused and widespread ray.

Has beveled plate-glass lens, octagonal non-rolling lens ring, safety-lock switch, ribbon-design case and new ring hanger. Made in nickel-plated finish only. Size  $14\frac{1}{2} \times 1\frac{1}{2}$  inches. Use 5 No. 950 unit cells; No. 1163 bulb.

No. 2645, without Batteries.....each \$ 2.50

**No. 2647 Eveready Special Focusing Flashlights**

2000-Foot Range



This powerful flashlight is ruggedly constructed and low-priced.

Case is silver and black striped.

Uses 5 No. 950 Eveready batteries and Eveready Mazda lamp No. 1168.

Size,  $14\frac{1}{4} \times 1\frac{1}{2}$  inches. Packed in individual cartons.

No. 2647, without Batteries.....each \$ 1.00

**No. 2695 Eveready Mine Safety Flashlights**



A 3-cell safety light, nickel finish. Size,  $9\frac{1}{4} \times 1\frac{1}{2}$  inches.

Classified as permissible by Bureau of Mines, U.S. Department of Commerce, and carries Underwriters Laboratories' approval for use in Methane and air mixtures, and gasoline vapor.

Bulb is spring mounted and is so arranged that if the bulb glass is shattered the electric circuit will be instantly opened before the lamp filament can ignite inflammable or explosive mixtures of gases in the surrounding atmosphere. Fitted with a special lens made of extra heavy glass and a special projecting lens ring.

Unit package, one.

No. 2695, Without Batteries.....each \$ 3.95



## No. 2697 Eveready Boy Scout Flashlights



A 2-cell focusing light finished in khaki and equipped with ring hanger, belt clip and safety-lock switch. It carries the official Boy Scout insignia.

Size  $7\frac{3}{8} \times 1\frac{1}{2}$  inches.

Use two No. 950 unit cells; No. 1161 bulb.  
No. 2697, without Batteries.....each \$1.30

## Eveready Flashlights with Ring Hangers

All Eveready Flashlights, with the exception of pocket and lantern types, are now equipped with the ring hanger.

All Eveready Flashlights, both black and nickel, are furnished with ribbon design cases.

These are exclusive Eveready features.



## Eveready Unit Cells

The hours of service are definitely guaranteed.

No. ....	935	950
Each.....	\$ .10	.10
No. of Cells.....	1	1
Size Cells.....in.	$1\frac{31}{32} \times 1\frac{1}{32}$	$2\frac{27}{64} \times 1\frac{11}{32}$
No. in Unit Package....	12	48



No. 950

## No. 409 Eveready Lantern Batteries

A 4-cell lantern battery for use in railroad lanterns.

Size,  $3\frac{29}{32} \times 2\frac{3}{4} \times 2\frac{3}{4}$  inches.

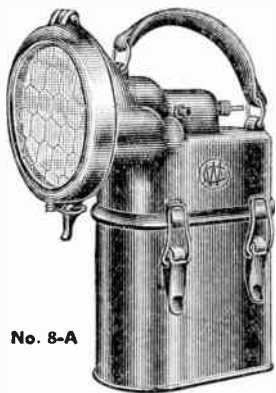
Unit package, 1.

Weight, 22 ounces.

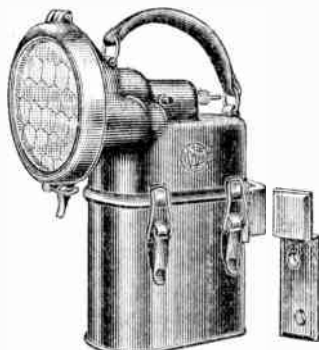
No. 409.....each \$.40



## Excellight Portable Searchlights



No. 8-A



No. 8-B

This weatherproof light gives either a powerful concentrated searchlight effect that will pierce dense smoke or darkness or may be immediately changed to a diffused spreading light. Furnishes a ray of light that will show the way for a distance of 600 feet. The possibility of giving any lighting effect between these two extremes makes this searchlight invaluable.

Height, 11 inches.

Furnished with two No. 6 dry cells.

No. 8-A, Wt.,  $7\frac{1}{2}$  Lbs. ca. \$12.50

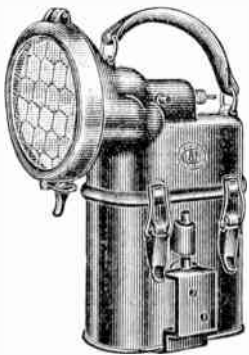
No. 8-B, Wt.,  $8\frac{1}{2}$  Lbs. ea. 14.50

No. 8-C, Wt.,  $8\frac{1}{2}$  Lbs. ea. 14.50

Adjustable Shoulder

Straps.....each 1.50

Extra Bulbs.....each .50



No. 8-C

## No. 3 Eveready Pocket Lights



A press on the button and entire lens slides forward and becomes fully illuminated; depress lens and light goes out.

Polished nickel case decorated with black and red enamel. Size,  $2\frac{1}{2} \times 1\frac{1}{8} \times \frac{5}{8}$  inches. Uses 1 No. 706 Eveready battery and No. 1180 Mazda lamp.

No. 3, without Batteries.....each \$.85

## No. 10 Eveready Spotlight Lanterns



Case is red enameled; bail, switch and reflector are nickel-plated.

Size,  $2\frac{5}{8} \times 2\frac{3}{8} \times 1\frac{3}{8}$  inches.

Uses 2 No. 935 batteries and solid glass spotlight lamp No. 1174.

No. 10, Complete.....each \$.59

## No. 1653 Eveready French Colonial Electric Candles

For use on the dinner table, telephone stand, in the nursery or sick room, etc.

Has a rich satin, silverlike finish, known as Butler finish.

Height, .. inches; width at base, .. inches.

Uses 2 No. 935 Eveready batteries and No. 1173 Mazda lamp.

Unit package, 3.



No. 1653, without Batteries.....each \$1.80

## No. 1654 Eveready Electric Candles

A switch in the base automatically turns the light on or off each time it is picked up or set down. It can be turned on permanently if a permanent light is desired for use on dinner tables, telephone stands, etc.

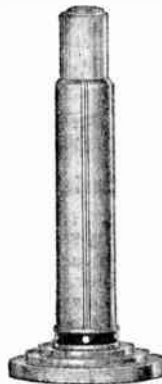
Has a rich satin silverlike finish, known as Butler finish. Bulb is housed in a casing of moonstone glass.

It is equipped with a band containing radium spots so that it can be easily located in the dark.

Height,  $6\frac{3}{4}$  inches. Width at base,  $2\frac{9}{7}$  inches. Use unit cell No. 935. Use lamp No. 1197.

Unit package quantity, 6.

No. 1654, Including Lamp and Batteries.....each \$1.00



## Eveready Wallites

For use any place where regular wired outlets are not desired or are impossible.

Finished in ivory. Unit package, 3.

### No. 4757

Size,  $5\frac{3}{4} \times 3\frac{3}{8} \times 2\frac{1}{4}$  inches. Uses 2 No. 950 Eveready batteries and No. 1166 Mazda lamp.

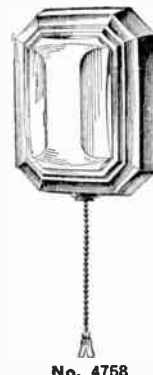
No. 4757, without Batteries....each \$1.30

### No. 4758

Gives twice as much light as No. 4757. Equipped with time-switch which automatically turns off light after a short period, preventing battery waste. Light can also be left on indefinitely if desired.

Size,  $6 \times 4\frac{1}{2} \times 2\frac{1}{2}$  inches. Uses 3 No. 950 Eveready batteries and No. 1167 Mazda lamp.

No. 4758, without Batteries...each \$1.65



No. 4758

**No. 6 Eveready Columbia Ignitor Dry Cell**  
With Screw Connections



A special high grade cell designed for all heavy service. It is particularly adapted for motor ignition. A set of ignitors will keep the engine running smoothly until every bit of current is exhausted.

Equally satisfactory for motor boats, gas engines, and in fact, any service where a reliable, long life battery is needed.

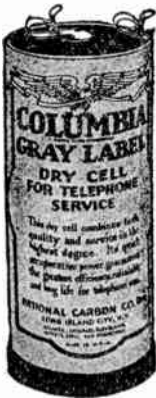
These batteries are carefully packed from fresh stock, and guaranteed to reach their destination in perfect condition.

Voltage, 1½.  
Width, 2½ inches.  
Height, 6 inches.

Packed 25 to a standard package.  
Weight of standard package, 57 pounds.

No. 6.....each \$ .37

**Columbia Gray Label Dry Cell**



This battery is especially designed for telephone work and light-drain service.

Fahnestock spring binding posts are furnished without extra charge when requested.

Voltage, 1½.  
Diameter, 2½ inches.  
Height, 6 inches.

Quantity in standard package, 50.

Approximate weight of standard package, 120 pounds.

Price.....per cell \$ .35

**No. 6 Hercules Dry Cell Batteries**

This battery is reasonably priced and will offer satisfactory service under all conditions.



No. 6.....each \$ .27

**Eveready Columbia Hot Shot Batteries**



Cells are connected by soldered copper strips and encased in a single metal container. The advantages of this new type covering are the ability to withstand rough usage, water-proof, thoroughly insulated to prevent internal short circuits and a woven fabric handle for convenience in carrying.

Cat. No.	Each	Voltage	DIMENSIONS, INCHES			Std. Pkg. Quantity in Box	Approx. Wt. Lbs. Std. Pkg.
			Length	Width	Ht.		
1461	\$1.90	6	10 7/16	2 3/4	6 3/4	6	60
1462	1.90	6	5 3/8	5 3/8	7 1/2	6	64
1562	2.15	7 1/2	7 7/8	5	6 3/4	8	107
1662	2.60	9	7 3/8	5 1/4	6 3/4	8	124

**No. A-600 Eveready Air Cell A Batteries**  
For Air Cell Receivers



An air depolarized constant voltage, non-rechargeable primary battery, especially made only for use as the A battery for air cell receivers.

Capacity is sufficient to operate an approved receiver for at least 1000 hours. Uses liquid electrolyte, but is shipped dry, and so undergoes no depreciation until activated. It is activated

for service by filling with water.

Length, 13 1/2 inches; width, 6 3/4 inches; height over all, 11 inches. Capacity, 600 ampere-hours; maximum load to which battery should be submitted, 650 milli-amperes.

Weight: dry, 25 pounds; filled with water, 37 pounds.

No. A-600.....each \$8.50

**No. 768 Eveready B Batteries**

Horizontal Type, 22 1/2 Volts

Suitable for portable sets where light weight and small size are essential, and for self-contained sets having battery compartments too small to permit the installation of a larger B battery.

It has plus 6, plus 18 and plus 22 1/2-volt taps, which permit of its use as a C battery in connection with power tubes.

Length, 4 1/16 inches; width, 2 9/16 inches; height, 2 3/4 inches.

Weight, 1 pound, 9 ounces.



No. 768.....each \$1.25

**No. 485 Eveready Layerbilt Radio B Batteries**

Vertical Type, 45 Volts, Medium Size

Made of flat layers of current producing elements compressed one against another, so that every cubic inch inside the battery case is completely filled with electricity-producing material.

Equipped with 3 Fahnestock clips giving voltages of 22 1/2 and 45.

This battery is 8 3/16 inches long, 3 1/4 inches wide and 7 1/8 inches high.

Weight, 9 1/2 pounds.

Price, No. 485.....each \$1.95



**No. 486 Eveready Layerbilt Radio B Batteries**

Vertical Type, 45 Volts, Heavy Duty

Made of flat layers of current-producing elements compressed one against another, so that every cubic inch inside the battery case is completely filled with electricity-producing material. For sets of 4 tubes or more.

Equipped with 3 Fahnestock Clips giving voltages of 22 1/2 and 45.

Length, 8 1/8 inches; width, 4 3/4 inches; height, 7 5/16 inches.

Weight, 14 1/4 pounds.

Price, No. 486.....each \$2.50





## Eveready Round Cell Radio B Batteries

### No. 570, Large Size, Vertical Type, 45 Volts



This battery is of cylindrical cell construction.

Length, 8 $\frac{1}{4}$  inches; width, 4 $\frac{1}{2}$  inches; height, 8 inches.

Weight, 13 $\frac{3}{4}$  pounds.

No. 570.....each \$1.80

### No. 572, Medium Size, Vertical Type, 45 Volts

Recommended for self-contained sets where lack of space will not permit the use of large size batteries. Cylindrical cell construction.

Length, 8 $\frac{1}{4}$  inches; width, 3 $\frac{1}{4}$  inches; height, 8 inches.

Weight, 9 pounds.

No. 572.....each \$1.35

## Eveready Round Cell Radio B Batteries

### No. 870, Large Size, Vertical Type, 45 Volts



This battery is of cylindrical cell construction.

Length, 8 $\frac{1}{4}$  inches; width, 4 $\frac{1}{2}$  inches; height, 8 inches.

Weight, 13 $\frac{3}{4}$  pounds.

No. 870.....each \$2.15

### No. 872, Medium Size, Vertical Type, 45 Volts

Recommended for self-contained sets where lack of space will not permit use of larger size batteries. Cylindrical cell construction.

Length, 8 $\frac{1}{4}$  inches; width, 3 $\frac{1}{4}$  inches; height, 8 inches.

Weight, 9 pounds.

No. 872.....each \$1.65

## No. 771 Eveready Radio C Batteries

### Vertical Type, 4 $\frac{1}{2}$ Volts



A 4 $\frac{1}{2}$ -volt unit, containing 3 cells provided with 4 Fahnestock spring clip terminals.

May be used in either the filament or A circuit, the plate or B circuit or the grid or C circuit.

A 4 $\frac{1}{2}$ -volt C battery is sufficient with most tubes when B battery voltages of not over 80 or 90 volts are used, and the signal is ordinarily loud. For

B battery voltages up to 120 volts, from 6 to 9 volts of C battery gives better results.

Length, 4 inches; width, 1 $\frac{3}{8}$  inches; height, 3 $\frac{1}{8}$  inches. Weight, 14 ounces.

No. 771.....each \$3.35

## No. 7111 Eveready Dry Cell Radio A Batteries

### Vertical Type, 1 $\frac{1}{2}$ Volts



A single 6-inch dry cell battery having 2 screw knurls and put up in an attractive round paper jacket.

Connected in various combinations to meet the requirements of WD-11, UV-199 and all other dry cell tubes.

Furnished in round jackets and with screw knurls.

Initial voltage of 1 $\frac{1}{2}$  volts.

Width, 2 $\frac{1}{2}$  inches; height, 6 inches.

Standard package, 25.

Weight, standard package, 57 pounds.

No. 7111.....each \$.40

## Edison Primary Cells

Edison Primary Cells are furnished in capacities ranging from 75 to 1000-ampere hours. The sizes best adapted for telephone work are 75, 250 and 500-ampere hour types, for average conditions, and the 1000-ampere hour cells for heavy duty service or when it is desirable to bring the renewal periods far apart.

The characteristics of this battery, which make it particularly well suited for telephone service, are: Uniform voltage under continuous discharge; extremely low and constant internal resistance; freedom from depreciation when the circuit is open; long life, with no attention between renewals; indicator panels in plates, which accurately show the approach of exhaustion in ample time to arrange for renewal and suitability for either open circuit (intermittent discharge) or closed circuit (continuous discharge) work.

The initial open circuit voltage of all Edison Primary Cells is 0.9. The closed circuit voltage averages 0.60 to 0.65 depending on the rate at which the cells are discharged.

### Use of Cells

Edison Primary Cells are used extensively for the following purposes: Local battery telephone exchange switchboards; telephone train dispatching (talking circuits); intercommunicating telephone systems; small common battery telephone systems; private branch exchange switchboards; pole changers, supervisory lamps and relays; telegraph work (local sounder and main line circuits); railway signals and crossing bells; railway interlocking plants; gas and gasoline engine ignition; low voltage motors; battery dental engines; fire, police and burglar alarms; auxiliary fire alarm systems (closed circuit); mine signals, bell systems and annunciators; program and self-winding clocks; electroplating; highway beacon lighting; chemical analysis and other school work.

### The A. C. Primary System

Edison Primary Cells are regularly used as a standby battery where a.c. power normally energizes low voltage lights or other apparatus. A power off relay throws the load on the battery when the a.c. fails. Uninterrupted operation may be maintained indefinitely because the attendant can always determine, by visual inspection, the available capacity of the standby battery.

### Maximum Recommended Discharge

Ampere Hour Cells	Description	MAX. RECOMMENDED DISCHARGE AMPERES	
		Continuous	Intermittent
75	.....	0.65	1.0
200	All Types	1.00	1.5
250	.....	1.00	1.5
500	All S Types	2.00	3.0
500	All M Types	2.50	3.0
1000	M Type	4.00	6.0

## Type 75 Edison Primary Cells

### Capacity, 75-Ampere Hours



Well suited for telephone work. Adapted to all classes of service where dependable capacity, uniform voltage and reliability are necessary requisites.

With round glass jar. Size overall, 3x7 $\frac{1}{2}$  inches. At a continuous discharge of 100 milliamperes this cell will deliver 80 ampere hours to a cut-off voltage of .6.

When the battery exhausts it is customary to replace with new cells and discard the entire exhausted battery; expensive jars or heat-resisting glass are not used with this type.

Price, Type 75.....each \$.90



**Type S-202 Edison Primary Batteries**  
Capacity, 200 Ampere Hours

Furnished with rectangular heat-resisting glass jar. Size over all, 3 3/8 x 6 x 11 inches. Inside dimensions of jar only, 2 7/8 x 5 1/4 x 9 inches.

Adapted for intercommunicating telephone systems, railway train dispatching systems, stationary gas or gasoline motors, electric clock systems, small motors, etc.

Use five cells for stationary gas or gasoline motors having make and break ignition and eight cells for jump spark. Recommended for stationary work only.



Type	Description	Price, Each
S-202	Complete Cell	\$3.40
S-200	Renewal	1.50
<b>Renewal Parts</b>		
S-200	Element, Assembled	1.35
200	Can Caustic Soda	.24
200	Bottle Battery Oil	.09

**Type S-206 Edison Primary Batteries**  
Capacity, 200 Ampere Hours

Made with heat-resisting glass jar and rubber gasket ring. Size over all, 5 3/4 x 9 3/4 inches. Inside dimensions of jar only, 5 x 7 1/2 inches. Adapted for motor boat ignition. Use five cells for single cylinder make and break engines; six cells for multiple cylinder, high speed make and break engines; eight cells for jump spark. The cover is fitted with a rubber gasket to prevent splashing. Type S-206 supersedes old Type VP cell.

Type	Description	Price, Each
S-206	Complete Cell	\$3.75
S-200	Renewal	1.50
<b>Renewal Parts</b>		
S-200	Element, Assembled	1.35
200	Can Caustic Soda	.24
200	Bottle Battery Oil	.09



**Type S-208 Edison Primary Batteries**  
Capacity, 200 Ampere Hours

With heat-resisting glass jar. Size over all, 5 3/4 x 9 3/4 in. Inside dimensions of jar only, 5 x 7 1/2 inches.

Adapted for stationary gas or gasoline engines, electric motors, burglar alarms, bell systems, program and self-winding clocks, annunciators, electric time stamps, mine signals, intercommunicating telephone systems, etc. Use five cells for stationary engines having jump spark ignition.

Cells have flat cover, without gasket and are recommended for stationary work only.

Type S-208 supersedes old Type Q cell.



Type	Description	Price, Each
S-208	Complete Cell	\$3.55
S-200	Renewal	1.50
<b>Renewal Parts</b>		
S-200	Element, Assembled	1.35
200	Can Caustic Soda	.24
200	Bottle Battery Oil	.09

**Type S-252 Edison Primary Batteries**  
Capacity, 250 Ampere Hours

With rectangular heat-resisting glass jar. Size over all, 3 3/8 x 6 x 12 1/2 inches. Inside dimensions of jar only, 2 7/8 x 5 1/4 x 10 inches.

Type S-252 cells are the most desirable of the smaller sizes, because of the small space occupied, and on account of the element being suspended high in the solution they are particularly efficient. They are designed for stationary work, but when used in trays are semi-portable.

Particularly adapted for telephone transmitter and fire-alarm service.

Type	Description	Price, Each
S-252	Complete Cell	\$3.60
S-250	Renewal	1.70
<b>Renewal Parts</b>		
S-250	Element, Assembled	1.55
250	Can Caustic Soda	.27
250	Bottle Battery Oil	.09



**Type S-305 Edison Primary Batteries**  
Capacity, 300 Ampere Hours

With round heat-resisting glass jar. Size over all, 6 3/4 x 10 1/4 inches. Inside dimensions of jar only 6 x 8 inches.

Adapted for stationary gas or gasoline engines, burglar alarms, bell systems, program and self-winding clocks, auxiliary and industrial fire alarm systems, etc. Also for telephones, including intercommunicating telephones, private branch exchanges, switchboards, railway telephone train dispatching at busy way stations, and similar service.

Type	Description	Price, Each
S-305	Complete Cell, with Heat-resisting Jar	\$3.80
S-300	Complete Renewal	1.90
<b>Renewal Parts</b>		
S-300	Element, Assembled	1.75
300	Can Caustic Soda	.30
300	Bottle Battery Oil	.09



**Types S-502 and M-502 Edison Primary Cells**  
Capacity, 500-ampere Hours

The 500-ampere hour cells are furnished with either multiple or single plate elements. The letter M before the reference number indicates multiple plate, 2 copper-oxide and 3 zinc plates. The letter S indicates single plate, 1 copper-oxide and 2 zinc plates.

The cells are used for telephone and telegraph service; railway signal, fire and burglar alarm systems, highway, beacons, and in many other fields where a high capacity cell is desirable.

For service in which the load frequently goes to 3 amperes, or where the cells are exposed to low temperature, the multiple plate cells are recommended. For service in which the load does not go over 2 1/2 amperes and the cells are protected from the cold, the single plate type will fully meet the requirements. Initial open circuit voltage, 0.9. Average closed circuit voltage 0.6 to 0.65 per cell. Maximum recommended continuous current for single plate types, 2 amperes; for multiple plate types, 2.5 amperes. Maximum recommended intermittent current for either types, 3 amperes.

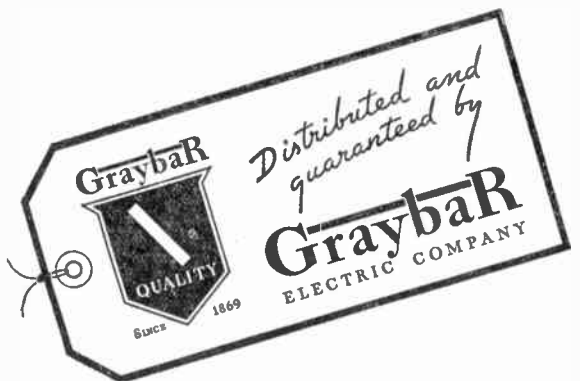
**Type S-502**  
Single Plate Element

With rectangular heat-resisting glass jar. Size over all, 5 3/4 x 6 3/4 x 12 1/4 inches. Inside dimensions of jar only, 5 x 6 x 10 inches.



Type	Description	Price, Each
S-502	Complete Cell	\$4.40
S-500	Renewal	2.15
<b>Separate Parts</b>		
502	Jar	\$2.20
502	Cover	.45
...	Wing Nuts and Washers	per set .20
S-500	Element	1.90
500	Caustic Soda	per can .42
500	Oil	per bottle .09

For Type M-502 cell, renewal and element, add 20 cents. Prices of the other parts are the same.



## Types S-504 and M-504 Edison Primary Cells

Capacity, 500-Ampere Hours

For telephone and telegraph service, railway signal, etc. With barrel-shaped heat-resisting glass jar. Size overall, 7x12¼ inches; inside dimensions of jar, 6x10 inches.



Type	Description	Price Each
S-504	Complete Cell	\$4.00
S-500	Complete Renewal	2.15
<b>Separate Parts</b>		
504	Jar	\$2.10
504	Cover	.55
	Wing Nuts and Washers	per set .20
S-500	Element	1.90
500	Caustic Soda	per can .42
500	Oil	per bottle .09

For Type M-504, cell, renewal and element, add 20 cents.

## Types S-507 and M-507 Edison Primary Cells

Capacity, 500-Ampere Hours

For traffic signals and other classes of work where there is a possibility of rough usage. Has cylindrical enameled-steel jar. Size overall, 7¼x12 inches.

Type	Description	Price, Each
S-507	Complete Cell	\$4.40
S-500	Complete Renewal	2.15

**Separate Parts**

S-507	Jar	\$2.00
S-507	Cover	.55
S-507	Rubber Gasket	.20
S-507	Clamps	set of 3 .75
	Wing Nuts and Washers	per set .20
S-500	Element	1.90
500	Caustic Soda	per can .42
500	Oil	per bottle .09

For Type M-507 cell, renewal and element, add 20 cents.



## Exide Storage Batteries



BTMH Chloride Type

Exide Storage Batteries are made in a wide variety of sizes and types to meet the requirements of various kinds of power applications where a reliable source of direct current at steady voltage is required either constantly, intermittently or to tide over occasional interruptions in the normal power supply. There are three types of Exide Batteries made for these requirements.

The Chloride Type is built primarily for durability. Where long life and freedom from care and attention, together with dependability, are the deciding factors, this type of battery invariably receives the first call.

The Pasted Plate Type furnishes greater capacity in the given space than the Chloride Type.

The outstanding feature of the Ironclad Type battery is its unique positive plate which is totally different in construction from that of any other positive plate. In performance and longevity this type of Exide is second only to that of the famous Chloride.

Types BTMH, CTMH, PTMH, ETMH, BTE and KZHG are furnished in painted wooden crates, all but the first two types being equipped with carrying handles. Each crate assembly contains one cell equipped with pilot balls which roughly indicate the state of charge.

Cells of greater capacity than listed below are available in sealed glass jar assembly up to 1064 ampere hours at the 8-hour discharge rate.

Batteries are shipped charged and filled with electrolyte.

## Type M-1002 Edison Primary Cells

Capacity, 1000 Ampere Hours

The 1000 ampere hour cells are furnished with either rectangular or cylindrical jars. Type M-1001 is the specification for the cell with the cylindrical jar and M-1002 for the rectangular. The prices are the same.

This size was developed to meet demand for a battery that would operate efficiently in classes of service where heavy discharges are required for long periods. In railway signaling these cells are used for operating remote controlled switch movements, color light signals and track circuits. In the general trade for any heavy duty work or where it is desirable to bring the renewal periods as far apart as possible.

Initial open circuit voltage, 0.9 per cell; the average closed voltage, 0.6 to 0.65. The cells can be discharged continuously up to 4 amperes and intermittently up to 6 amperes.

### Type M-1002

With rectangular heat-resisting glass jar. Size over all, 6½x8¾x14 inches. Inside dimensions of jar only, 5x6x12¾ inches.

Type	Description	Price, Each
M-1002	Cell Complete	\$7.75
M-1000	" Renewal	4.25
<b>Separate Parts</b>		
1002	Jar	\$4.80
1002	Cover	.55
	Wing Nuts and Washers	per set .20
M-1000	Element	3.50
1000	Caustic Soda	per can .85
1000	Oil	per bottle .09

### Type M-1001

With cylindrical heat-resisting jar. Prices same as for Type M-1002.



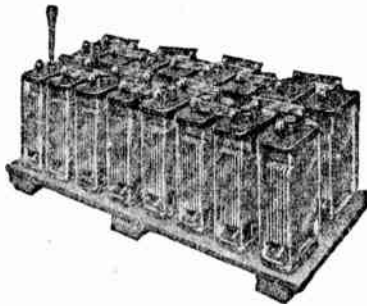
Type	No. of Cells	*Assembled, Sealed and Charged Each	†Cap. per Cell Amp. Hrs.	OVER ALL DIMENSIONS INCHES			Approx. Wt. Packed
				Lgth.	Wdth.	Ht.	
BTMH- 2 1 Row	11	\$44.80	6	26⅝	4⅝	9⅞	81
CTMH- 2 1 Row	11	65.15	12	29⅞	7½	11⅞	156
PTMH- 2 1 Row	11	106.30	24	33⅝	8	16⅝	249
ETMH- 2 2 Rows	11	142.90	36	20⅞	20½	16⅝	368
BTE- 5 1 Crate	11	65.25	14.4	21⅞	12	9⅞	148
BTE- 7 1 Crate	11	75.25	21.6	21⅞	12	9⅞	160
KZHG- 7 1 Crate	11	82.25	26.6	21⅞	12	9⅞	160
BI- 5 Ironclad	2	13.00	14.4	8⅝	3⅝	7⅞	15
BI- 9 Ironclad	2	19.25	28.8	8⅝	4⅝	7⅞	23
DMGO- 3	1	12.00	20	4⅞	8⅞	14⅝	32
DMGO- 5	1	15.75	40	4⅞	8⅞	14⅝	37
DMGO- 7	1	20.00	60	5⅞	8⅞	14⅝	46
DMGO- 9	1	24.50	80	7	8⅞	14⅝	56
EMGO- 5	1	25.50	80	5⅞	10⅞	17¼	69
EMGO- 7	1	33.00	120	7⅞	10⅞	17¼	90
EMGO- 9	1	39.75	160	7⅞	10⅞	17¼	99
FMGO- 9	1	95.25	320	10⅞	14⅞	22	231
FMGO-11	1	109.25	400	10⅞	14⅞	22	246
FMGO-13	1	125.25	480	12⅞	14⅞	22	290
EOGO- 5	1	19.00	80	5⅞	10⅞	16⅝	52
EOGO- 7	1	23.00	120	5⅞	10⅞	16⅝	56
EOGO- 9	1	27.00	160	5⅞	10⅞	16⅝	61
EOGO-11	1	31.75	200	7⅞	10⅞	16⅝	75
EOGO-13	1	35.75	240	7⅞	10⅞	16⅝	80
FOGO-15	1	100.00	532	10⅞	14⅞	22	230
FOGO-17	1	109.00	608	10⅞	14⅞	22	247
FOGO-19	1	118.00	684	10⅞	14⅞	22	255
FOGO-21	1	129.00	760	12⅞	14⅞	22	282
FOGO-23	1	138.00	836	12⅞	14⅞	22	290

\*Prices do not include pilot balls, except on Types BTE, KZHG and BI. One set of these indicators is regularly furnished with these types. Prices of cells of Types DMGO, EMGO, FMGO, EOGO and FOGO include necessary bolt connectors, but do not include intercell connectors.

†At 8-hour rate to 1.75 volts.

**Titan Storage Batteries**

In Sealed Glass Jars



For use in homes, camps and for farm lighting.

Batteries are shipped charged ready for use.

Specific gravity fully charged 1.245.

Type	Amp. Hr. Cap. Intermittent Rate	16 Cells		56 Cells		Normal Charge Rate in Amps.	No. of Plates per Cell	Type of Positive Plate Used
		Ship. Wt. Lbs.	Each	Ship. Wt. Lbs.	Each			
IGS- 25	25	200	\$76.00	710	\$266.00	2.25	3	A
IGS- 50	50	230	97.00	810	339.50	4.5	5	A
IGS- 70	70	530	115.60	1855	404.70	6.25	5	P-22
IGS-105	105	548	144.70	1918	506.30	9.40	7	P-22
IGS-125	125	670	159.00	2345	556.50	11.25	7	P-30
IGS-185	185	860	203.30	3010	711.60	16.85	7	P-40
IGS-250	250	1264	253.80	4424	888.30	22.50	9	P-40
IGS-315	315	1340	287.50	4690	1006.10	28.10	11	P-40
IGS-375	375	1440	349.70	5040	1224.00	33.75	13	P-40
IGS-440	440	1520	375.30	5330	1313.50	39.35	15	P-40
IGS-500	500	1760	432.80	6160	1514.90	45.00	17	P-40
IGS-565	565	1824	537.70	6100	1881.90	50.6	19	P-40

**Jar Dimensions**

Type	Length Inches	Width Inches	Height Inches	Type	Length Inches	Width Inches	Height Inches
IGS- 25	1 3/4	6 1/2	7 7/8	IGS-250	5 3/4	9 3/4	13 1/2
IGS- 50	2 1/2	6 3/4	7 7/8	IGS-315	5 3/4	9 3/4	13 1/2
IGS- 70	3 1/4	7 3/8	10 1/2	IGS-375	6 3/4	9 1/4	13 3/8
IGS-105	3 1/4	7 3/8	10 1/2	IGS-440	6 3/4	9 1/4	13 3/8
IGS-125	4	7 3/4	12 1/2	IGS-500	8	9	13 3/8
IGS-185	3 3/4	9 1/4	13 1/2	IGS-565	8 3/4	9 1/4	13 1/2

**Plate Dimensions**

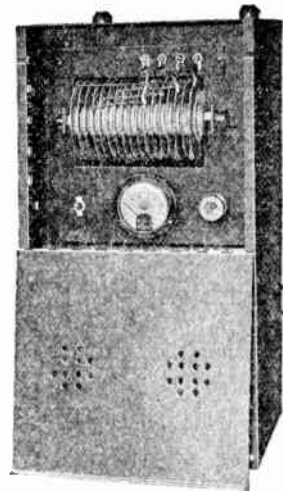
Allow 12 inches above the overall height of jar for height of battery rack to permit inspection with hydrometer.

Type	Width Inches	Height Inches	Thickness Inches
A Positive	5 5/8	4 1/2	7/32
P-22 Positive	5 13/16	5 7/8	7/32
P-30 Positive	5 3/4	7 1/8	7/32
P-40 Positive	7 3/4	7 3/4	7/32

The intermittent rating in amperes is the current the battery will give discharging 4 hours resting 16 hours, discharging 8 hours resting 16 hours, discharging 8 hours resting 16 hours, and discharging 4 hours to 1.7 volts per cell.

This ampere rate multiplied by 24 gives the intermittent ampere hours.

**Square D RectiFilters**



RectiFilter furnishes d.c. of the required purity from an a.c. circuit; designed to fill a long felt need for a reliable source of d.c. requiring no attention. It is only necessary to connect the a.c. line and the d.c. load to the proper terminals.

Used wherever a source of d.c. is required. Applications include furnishing power for telephone systems, signal systems, including fire alarm systems, sound on film equipment, broadcasting and public address equipment and magnetic chucks.

RectiFilter is an assembly of rectifiers, impedances, transformers and condensers, all designed to insure uninterrupted service. No moving parts or batteries to demand constant attention and maintenance.

RectiFilter must be chosen by characteristics of d.c. required and by maximum drain and duty cycle necessary to serve application. A.c. component (a.c. wave or ripple remaining in the d.c.) is shown for each unit, and while values are considered to be well within requirements for the service indicated, it is well to check against requirements for particular application before deciding upon unit.

After choosing the proper group, pick a unit that will give necessary voltage, considering the regulation required, necessary amperage and duty cycle demanded by the application.

**For Telephone Service (Heavy Intermittent Duty)**

Cat. No.	Each	*Volts D.C.	Amperes Continuous Drain	Amperes Heavy Intermittent Duty	Amperes Light Intermittent Duty	Maximum Volts Less Than Full Load	A.C. Component in Volts at Continuous Drain Rating	A.C. Ring Volts
PC-2060	\$30.00	6	.350	.350	.500	8	.020	6-12-18
PC-2120	60.00	12	.500	.500	.750	17	.020	6-12-18
PC-1242	130.00	24	.750	1.0	2.0	27	.020	None
PC-2242	140.00	24	.750	1.0	2.0	27	.020	12-18-24
PC-1244	175.00	24	2.0	4.0	4.0	28	.020	None
PC-1486	339.00	48	3.0	6.0	8.0	52	.040	None

\*At heavy intermittance duty rating for Telephone Units.

**For Signal Service**

PC-6061	*\$40.00	6	1.0	2.0	2.0	9	1.0	None
PC-6121	* 55.00	12	1.0	2.0	2.0	17	2.0	None
PC-6241	85.00	24	1.0	2.0	2.0	34	6.0	None
PC-6242	*125.00	24	2.0	3.0	4.0	36	8.0	None

\*At continuous drain rating for Signal Units.

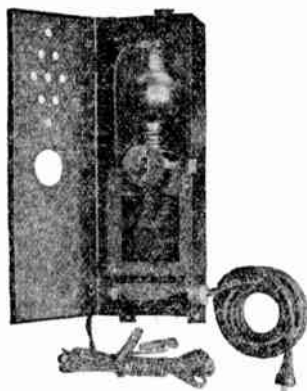
Further information upon application.



## G-E Tungar Battery Chargers

25 to 60 Cycles, 115 to 230 Volts A.C.

### 6-Ampere Type



Form B

For charging 6 or 12-volt storage batteries.

Ideal for small garages and filling stations; private car owners also find this battery charger convenient.

The one "on" and "off" switch is the only moving part of this battery charger. Charges one 3-cell battery as quickly as larger capacity outfits charge several. Uses a full 6-ampere rate or can charge two 6-volt batteries connected in series at 3 amperes. Charging rates fixed in accordance with battery load. Will charge a 6-volt battery at 6 amperes, two 6-volt batteries at 3 amperes.

Prices include one Cat. No. 189048 Tungar bulb.

Cy.	DIMEN. IN.			Shp. Wt. Lbs.	Volts: Normal 115 Limits 105/125		Volts: Normal 230 Limits 210/250	
	Ht.	Width	Depth		Cat. No.	Each	Cat. No.	Each
60	18 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>16</sub>	5	24 <sup>1</sup> / <sub>2</sub>	3126530	\$24.00	3126533	\$32.00
40/50	18 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>16</sub>	5	28 <sup>1</sup> / <sub>2</sub>	3126531	28.00	3126534	36.00
25/30	18 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>16</sub>	5	31	3126532	32.00	3126535	40.00

Cat. No. 189048, Tungar Bulb, Shp. Wt. 3 Lbs. each \$8.00

### 6-Battery Type

For charging six 6-volt batteries (or equivalent) at a 6-ampere rate.

Prices include two Cat. No. 189048 Tungar bulb.

Cy.	DIMEN. IN.			Shp. Wt. Lbs.	Form A Auto-Transformer		Form B Insulated Transformer	
	Ht.	Width	Depth		Cat. No.	Each	Cat. No.	Each
50/60	19 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>4</sub>	9	41	4B1	\$48.00	**4B2	\$60.00
25/40	19 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>4</sub>	9	48	*4B3	56.00	.....	.....

\*Manufactured on order only.

\*\*Shipping weight, 46 pounds.

Cat. No. 189048, Tungar Bulb, Shp. Wt. 3 Lbs. each \$3.00

### 6-12-Battery Type

A medium capacity, one day full wave Tungar will charge six 6-volt batteries at 12 amperes or twelve 6-volt batteries at 6 amperes or equivalent.

Prices include two Cat. No. 189048 Tungar bulbs.

50/60	19 <sup>7</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	9 <sup>5</sup> / <sub>8</sub>	63	6B1	\$100.00	**6B2	\$120.00
25/40	19 <sup>7</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	9 <sup>5</sup> / <sub>8</sub>	78	*6B3	116.00	.....	.....

\*Manufactured on order only.

\*\*Shipping weight, 69 pounds.

Cat. No. 189048, Tungar Bulb, Shp. Wt. 3 Lbs. each \$8.00

### 12-Battery Type

For charging twelve 6-volt batteries at 6 amperes or equivalent.

Prices include one Cat. No. 189049 Tungar bulb.

Cy.	DIMEN. IN.			Shp. Wt. Lbs.	Form A		Form B	
	Ht.	Width	Depth		Cat. No.	Each	Cat. No.	Each
50/60	19 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>4</sub>	9	41	4B5	\$60.00	**4B6	\$80.00
25/40	19 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>4</sub>	9	52	4B7	76.00	***5B2	92.00

Shipping weight: \*\*50 pounds; \*\*\*62 pounds.

Cat. No. 189049, Tungar Bulb, Shp. Wt. 3 Lbs. each \$8.00

### 12-24-Battery Full Wave Type

One day full wave Tungar will charge twenty-four 6-volt batteries at 6 amperes or twelve 6-volt batteries at 12 amperes or the equivalent.

Prices include two Cat. No. 189049 Tungar bulbs.

Cy.	DIMEN. IN.			Shp. Wt. Lbs.	Form A		Form B	
	Ht.	Width	Depth		Cat. No.	Each	Cat. No.	Each
50/60	19 <sup>7</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	11 <sup>5</sup> / <sub>8</sub>	97	6B5	\$136.00	**6B6	\$136.00
25/40	19 <sup>7</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	11 <sup>5</sup> / <sub>8</sub>	90	7B2	136.00	***7B3	136.00

Shipping weight: \*\*103 pounds; \*\*\*120 pounds.

Cat. No. 189049, Tungar Bulb, Shp. Wt. 3 Lbs. each \$8.00

## G-E Full Wave Tungar Battery Chargers

(Noiseless Type) For Telephone Service

Under this classification come outfits designed particularly for use with telephone systems operating on a single battery where it is necessary to charge the battery while it is operating on the telephone circuit.

### 30-Volt .3-5-Ampere Outfit

Intended primarily for continuous trickle charging in a small P.B.X. The full wave bulb Cat. No. 199698 is used. A reactance, or choke, of suitable capacity to filter the output is incorporated. An adjustable resistance in the secondary circuit permits adjusting the charging rate from .3 to .5 ampere on 11 or 12 cells of battery.

Full load efficiency 28%. Power factor 78%.

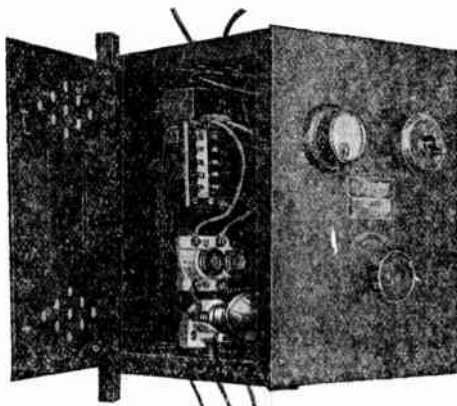
Cat. No.	Each	Volts A.C.	Cy.	DIMENSIONS, IN.			Approx. Shp. Wt. Lbs.
				Ht.	Width	Depth	
244708	\$50.00	*115	60	9 <sup>1</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	20

Available in other voltages and frequencies.

Prices on application.

Cat. No. 199698, Tungar Bulb. Shp. Wt. 1/2 Lb. each \$5.00

### 19-52-Volt 1-3-Ampere Full Wave Outfit



Cat. No. 3049455

Designed primarily to meet the requirements of inter-communicating systems and private branch exchanges. Can be used wherever a full wave filtered output up to 3 amperes is required. Two 2-ampere Tungar bulbs are used, the connections being such that the load is divided equally.

Flexibility is a feature of this Tungar. A terminal board conveniently located just inside the left hand door contains 6 sets of secondary taps and permits adjustment for operation on 9 to 24 cells of battery. A rheostat controlled from the panel gives close adjustment of the charging rate over a range of 1 to 3 amperes. A Type DW scale 0-5 ammeter is provided to indicate the rate.

The 19-52-volt rating is nominal, and was selected as 52 volts is the usual floating voltage of a 24-cell battery. This rectifier actually has sufficient capacity to charge at battery voltages up to 65 but the charging current will taper down to 1.75 amperes at 65 volts.

A suitable filter reactance is incorporated in the unit.

Full load efficiency 45%. Power factor 92%.

Cat. No.	Each	Volts A.C.	Cy.	DIMENSIONS, IN.			Approx. Shp. Wt. Lbs.
				Ht.	Width	Depth	
3049455	\$120.00	*115	60	17 <sup>1</sup> / <sub>2</sub>	12 <sup>5</sup> / <sub>8</sub>	14 <sup>3</sup> / <sub>8</sub>	78

Available in other voltages and frequencies.

Prices on application.

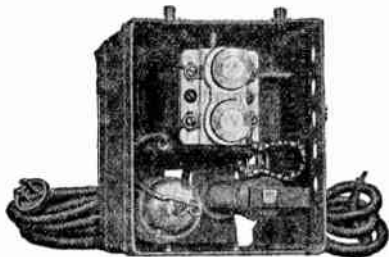
\*Will operate between the limits of 105-125.

Cat. No. 12X825, Tungar Bulb, Shp. Wt. 1/2 Lb. each \$4.00

**G-E Low-Voltage Half Wave Tungar Battery Chargers**

For Miscellaneous Applications  
115 Volts, 60 Cycles

No. 204170—24-30-Volt .5-2.5-Ampere Outfit



Interior View

A simple, compact outfit designed to charge from 9 to 12 cells of lead battery. Two secondary taps on the transformer permit adjusting the rectifier for its maximum output of 2.5 amperes at either 24 or 30 volts. An adjustable resistance of approximately 6 ohms is incorporated in this outfit which permits adjusting the charging rate from a maximum of 2.5 down to a minimum of about .5 ampere. A 2-ampere bulb is used.

Full load efficiency 55%. Power factor 50%.

Will operate between the limits of 105-125 volts.

Height, 9<sup>1</sup>/<sub>16</sub> inches; width, 6<sup>3</sup>/<sub>16</sub> inches; depth, 7<sup>3</sup>/<sub>16</sub> inches.

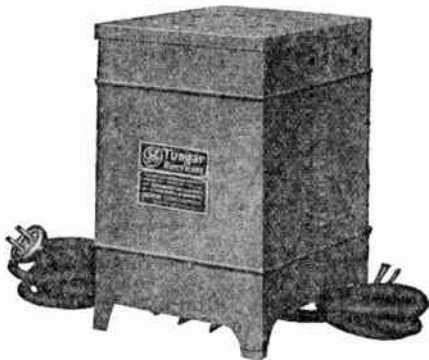
Approximate shipping weight, 25 pounds.

Cat. No. 204170.....each \$39.00

Available in other voltages and frequencies. Prices on application.

Cat. No. 195528, Tungar Bulb, Ship. Wt. 1/2 Lb...each \$4.00

**No. 199717—40-60-Volt .5-2.5-Ampere Outfit**



Similar in general construction to the outfit described above, but has a wider range of d.c. voltage.

There are 3 taps on the transformer secondary which adjust the output to 2.5 amperes at 40, 50 and 60 volts respectively. In addition an adjustable resistance is provided which will regulate the charging rate from 2.5 down to .5 amperes on any one of the taps.

Transformer is so designed that it has considerable inherent reactance regulation, giving rectifier a fairly flat characteristic even when none of the resistance is used. For example, when connected to the 60-volt tap the battery voltage can be increased from 60 to 75 volts and rectifier will continue to charge, the only difference being that charging rate will taper from 2.5 to 1.5 amperes.

A 6-ampere bulb is used providing ample capacity and long life.

Full load efficiency 60%. Power factor 50%.

Will operate between the limits of 105-125 volts.

Height, 9<sup>1</sup>/<sub>16</sub> inches; width, 6<sup>3</sup>/<sub>16</sub> inches; depth, 8<sup>3</sup>/<sub>16</sub> inches.

Approximate shipping weight, 29 pounds.

Cat. No. 199717.....each \$55.00

Available in other voltages and frequencies. Prices on application.

Cat. No. 189048, Tungar Bulb, Ship. Wt. 1 Lb...each \$8.00

**G-E 2-Ampere Tungar Battery Chargers**  
For Charging All Radio A and B and Auto Storage Batteries

Form B—25 to 133 Cycles—115 to 230 Volts A.C.



Designed to take care of all radio and auto battery charging requirements at home. The combination trickle charge and full rate feature is desirable for radio battery charging. No auxiliary devices or attachments are required other than an ordinary Mazda lamp which is essential to provide correct charging rate for radio B batteries only. Lamp may be inserted in external socket contained in terminal board which is mounted on back of casing.

Will trickle charge a 6-volt radio A battery or charge at full rate of 2 amperes.

For permanent connections to A and B batteries; charging may be controlled by merely throwing a switch.

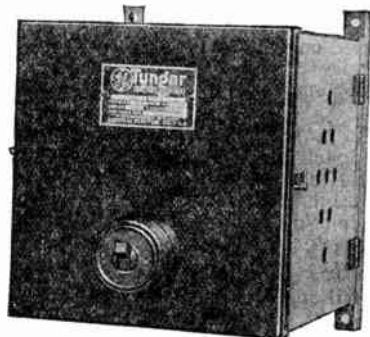
Prices include one bulb, Cat. No. 277465.

Will charge 6-volt battery at 2 amperes or trickle rate of 3/4 ampere; 12-volt battery at 1 ampere; 2 or 4-volt battery at 1 ampere; 24 to 96-volt B battery at 1/10 to 1/4 ampere.

Cycles	DIMENSIONS, INCHES			[Ship. Wt. Lbs.]	Volts: Normal 115 Limits 105/125		Volts: Normal 230 Limits 210/250	
	Ht.	Width	Depth		Cat. No.	Each	Cat. No.	Each
60	7 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	277153	\$14.00	279173	\$20.00
40/50	8	5 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>	14	279171	16.00	279174	22.00
25/30	9	5 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>	17	279172	18.00	279175	24.00

Cat. No. 277465, Tungar Bulb, Ship. Wt. 1/2 Lb...each \$4.00

**G-E Tungar Constant Potential Rectifiers**



A full-wave, highly efficient rectifier with high power factor and good regulation. Furnished in strong, neat appearing steel casing.

Applications—magnetic chucks, electromagnets, small solenoids, small d.c. motors and many others.

For use wherever 2 amperes or less, 115 or 220 volts d.c. is required and only a.c. is available.

Two hinged doors provide easy accessibility to bulb and transformer. All joints in casing are welded, including door hinges and latches. Angle irons welded to rear of casing add ruggedness and provide a means for wall mounting.

A tumbler switch breaks both sides of a.c. line.

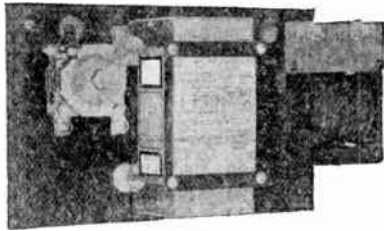
Equipped with a new type mercury barium Tungar bulb. This is a full-wave bulb rated 2 amperes at 250 volts.

Cat. No.	Each	A.C. Volts	Cycles	D.C. Volts	D.C. Amps.	Ship. Wt.Lbs.
3049554	\$60.00	115	60	115	2	..
3126450	60.00	230	60	115	2	..
3049555	90.00	115	60	230	2	..
3126451	90.00	230	60	230	2	..

Cat. No. 16X897, Mercury Tungar Bulb, shipping weight, 3 pounds.....each \$8.00



## G-E Copper Oxide Rectifiers For Telephone Service



Designed to deliver a noiseless d.c. of 6 volts, 0.350 amperes. There is a multitude of applications that come within this rating. A few of them are as follows:

New apartment house interphone systems; replace batteries (dry cell or storage batteries) on existing apartment house interphone systems; school interphone systems that come within rated output of this outfit; to supply power for way station telephones on railroad telephone lines; to supply power for local sounders on railroad telegraph lines—the smooth, humless d.c. obtained from this outfit (oscillograph shows no ripple) is praised by Morse code operators—any general application where d.c. not in excess of the rated output is desired.

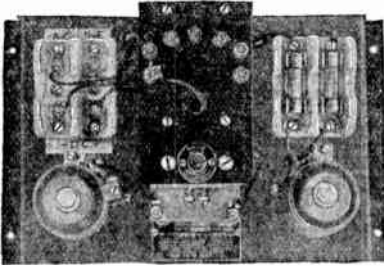
This rectifier consists of a copper oxide rectifying unit, transformer and necessary specially constructed filter (condenser and choke coil) all mounted on a steel base plate and enclosed in a rugged casing. Casing has an attractive crystallized green finish, which will not chip or mar.

Rating: 115 volts a.c.; 60 cycles; 6 volts d.c., .350 ampere d.c.

Approximate shipping weight, 25 pounds.

Cat. No. 6RC61D2.....each \$30.00

## G-E No. 6RC42D7 Copper Oxide Battery Chargers for Fire Alarm Systems 30, 45 or 60 Volts, .150 Amperes



Every municipality with a fire alarm system is a potential customer for a quantity of these battery chargers.

Cycle charging, the method most commonly used at present to supply power to the fire alarm system, requires a "standby" battery for each circuit, and has resulted in overcharging the batteries with a consequent short battery life. Briefly, cycle charging consists of an "A" and "B" battery for each circuit. The "A" battery is charged while the "B" battery is on circuit. The "A" and "B" batteries are interchanged daily.

Trickle charging the battery with a properly designed dependable rectifier eliminates the necessity of the "standby" battery and inherent troubles of charging.

The usual trickle charge will be approximately 100 mils. Model No. 6RC42D7 charger has a capacity of 150 mils, which is sufficient capacity to take care of even unusual conditions. One outfit will be required for each circuit.

A dry type charger; no moving parts, nothing to wear out. Minimum mounting space is required; can be mounted in any convenient out-of-the-way location. Fuse protection in both a.c. and d.c. circuits.

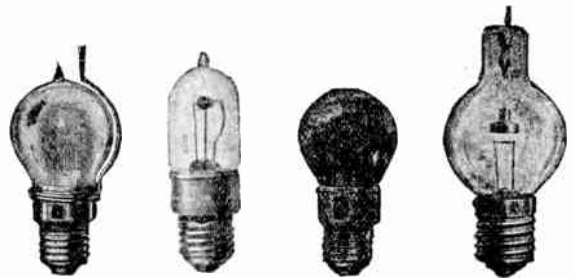
Approximate shipping weight, 50 pounds.

Also furnished for vertical mounting with or without casing.

Model No. 6RC42D7.....each \$32.00

## G-E Tungar Bulbs

### Standard Tungar Bulbs for Bulb Type Battery Chargers



Cat. No. 195528

Cat. No. 289881  
Trickle Bulb

Cat. No. 277465

Cat. Nos. 189048 and 189049

Cat. No. 195528.—For renewal purposes in the old design 2-ampere Tungars. Also adapted for other chargers which are not equipped to use the Cat. No. 277465 bulb which has the three points of contact in the base. A wire adapter permits making connection to plate (anode) at tip of the bulb.

Cat. No. 289881.—Used in standard Tungar Trickle Chargers and also in special trickle-charge Tungar units supplied to battery manufacturers for their combination. A battery and charger power units.

Cat. No. 277465.—All three contacts are made through base. This bulb has capacity for charging a 6-volt A storage battery at 2 amperes and a 120-volt B storage battery at not over .25 ampere.

Cat. No. 189048.—Should not be used where voltage requirements are over 45 volts except when charging B storage batteries at not over .25 ampere.

Cat. No. 189049.—Used with larger Tungars having a charging capacity of 100 volts at not over 6 amperes.

Cat. No.	Each	MAXIMUM RATING		DIMEN., IN.		Approx. Ship. Wt. Lbs.
		Amperes	Volts	Length Tip to Base	Diameter Tube	
195528	\$4.00	2/0.25	7.5/60	4½	2¼	½
277465	4.00	2/0.25	7.5/120	4	2¼	½
189048	8.00	6	7.5/45	6½	3	3
189049	8.00	6	100	6½	3	3
289881	4.00	5	7.5	4½	1¾	½

### Special Tungar Bulbs

Cat. No. 217283.—Used for certain special applications such as rectifiers for motion picture projectors. This bulb is not interchangeable with 6-ampere bulbs used in standard Tungars.



Cat. No. 217283

Cat. No. 199698.—A full-wave Tungar bulb used in a Tungar for charging batteries in telephone supply installations and also in certain types of radio power devices. This bulb delivers an output up to 3 amperes, depending on the nature of the load.



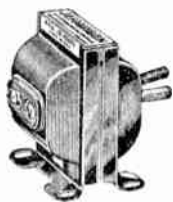
Cat. No. 199698  
Full-Wave Bulb

Cat. No. 12X825.—Similar in construction to the standard Cat. No. 277465 except that it is designed to meet higher voltage requirements. Used in certain special Tungars for charging high-voltage batteries.

Cat. No. 206501.—A high-voltage bulb. Equipped with wire adapter so that it can be used in old style Tungars.

Cat. No.	Each	MAXIMUM RATING		DIMEN., IN.		Approx. Ship. Wt. Lbs.
		Amperes	Volts	Length Tip to Base	Diameter Globe	
12X825	\$4.00	2	75	4	2¼	½
199698	5.00	.5	30	5½	2	½
206501	4.00	2	75	4½	2¼	½
217283	15.00	15	60	9½	3¾	3





**Jefferson Wizard Bell Ringing Transformers**

For residences or small flat buildings. Will operate door bells, buzzers, annunciators, and door openers. For 100-120 volts; 5 watts. Secondary, 10 volts. Size, 2 3/8 x 2 3/8 x 2 3/8 in. Weight, 1 lb. No. 230-101, 50-133 Cycles.....each \$1.25 No. 230-102, 25-40 Cycles.....each 1.50

**Jefferson Nucode Bell Ringing Transformers**

With Round or Square Cover

Mounted on an outlet box cover. Round cover fits 3 1/4 and 4-inch octagon boxes; square cover fits 3 1/4 and 4-inch octagon and 4-inch square boxes. Knockout in cover permits hanging a drop cord from same outlet box. Transformer wires do not interfere with lighting wires. Grounded to prevent shocks or possibility of fires.



No. 230-111

Depth, 2 1/4 inches; width, 2 3/8 inches; height, 2 1/4 inches.

Cat. No.	Each	Style Cover	Capacity Watts	PRIMARY Volts	Cycles	SECONDARY Voltages	Wt. Lbs.
230-111	\$1.50	Round	5	100-120	50-133	10	1 1/4
230-112	2.00	Round	5	100-120	25-40	10	1 1/4
230-141	1.50	Square	5	100-120	50-133	10	1 1/4
230-142	2.00	Square	5	100-120	25-40	10	1 1/4

**Jefferson Tri-Volt Bell Ringing Transformers**



For 100 to 120 volts a. c. Generates 3 secondary voltages; 6, 12 and 18 and will take care of longer leads than Wizard or Nucode. Capacity, 5 watts; dimensions 2x2 1/2 x 3 3/4 inches. Weight 1 pound. No. 230-121, for 60 Cycles.....each \$1.50 No. 230-122, for 25 Cycles.....each 2.00

**Jefferson Heavy Duty Signalling Transformers**



When the current demand is greater than the capacity permitted with the small transformers, the heavy duty types should be used. Examples of such uses are large apartment buildings, hotels, factories, schools, etc. The core and windings are hermetically sealed in a heavy metal case. Standard winding will operate on 100 to 120 volts a.c., 50 to 133 cycles.

**50 Watts**

This transformer is designed for heavier signal work and installations that require more power than is generated by the Nucode or Tri-volt Type. Six secondary voltages; 4, 8, 12, 16, 20 and 24. Weighs 6 pounds.

Cap. Watts	DIMENSIONS, INCHES			No.	60 Cycles		No.	25 Cycles
	Length	Width	Height		Each	Each		
50	4 1/16	3 5/8	3 1/16	231-101	\$5.00	231-102	\$9.00	

**100 Watts**

Heavy duty transformer designed to take care of large installations and operate a greater number of bells and other signal devices than the smaller type transformers. Six secondary voltages; 4, 8, 12, 16, 20 and 24. Weighs 9 pounds.

100	5 1/16	4 1/16	3 5/8	231-111	\$5.50	231-112	\$11.00
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**250 Watts**

Designed for unusually large installations. Secondary voltages; 4, 8, 12, 16, 20 and 24. Supplied with any desired secondary voltages at additional cost. Weighs 15 pounds.

250	5 5/16	5 1/16	4 3/4	231-141	\$8.25	231-142	\$16.50
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**500 Watts**

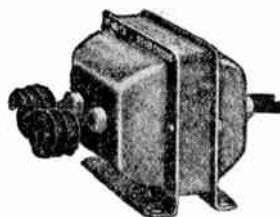
Has an output of 500 watts, secondary voltages; 4, 8, 12, 16, 20 and 24. Furnished with any desired secondary voltages at additional cost.

500	7 3/8	6 3/8	5 1/2	231-151	\$14.50	231-152	\$29.00
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For 220-V. 50 to 133-cycle transformers, add 15 per cent. Twenty-five cycles dimensions slightly larger; prices on application.

**Jefferson Low Voltage Transformers**

Designed for service wherever low voltage a.c. current is necessary, such as the operation of electrically controlled valves, thermostats, magnetic relays, etc. Approved by the Underwriters' Laboratories.



No.	Each	PRIMARY		SECONDARY		Wt. Lbs.
		Volts	Cycles	Watts	Volts	
630-101	\$2.50	100-120	50-133	20	8	1 1/2
637-101	3.00	100-120	50-133	35	8-16-24	2 3/4
637-111	3.50	100-120	50-133	50	8-16-24	2 3/4
637-121	3.75	100-120	50-133	75	8-16-24	3 1/4
637-131	4.50	100-120	50-133	100	8-16-24	4 1/4
637-201	3.00	100-120	50-133	35	24	2 3/4
637-211	3.35	100-120	50-133	50	24	2 3/4
637-221	3.50	100-120	50-133	75	24	3 1/4
637-231	4.50	100-120	50-133	100	24	4 1/4

**Jefferson Universal Toy Transformers**

100-120 Volts; 50-133 Cycles A.C.



No. 535-161

Equipped with an extension cord, separable attachment plug and a slide type voltage control, making it possible to transmit the power in small and uniform steps. All models except No. 3 can be furnished in 25-40 cycles. Prices upon application.

**Little Jeff**

Recommended for operating all narrow gauge American Flyer, Dorfan, Ives and Lionel outfits and Gilbert Toy motors. Delivers 6 secondary voltages ranging from 5 1/2 to 11 1/2 volts in 1.2-volt steps. Cat. No. 535-161, 50 Watts, Weight 3 1/2 Lbs.....each \$3.25

**Midget**

Operates Ives trains, all narrow and small sized wide gauge outfits; American Flyer, all narrow and wide gauge trains Nos. 1471, 1472, 1463 and 1464; Lionel trains, all O gauge and small sized standard gauge. Also operates the Kokomo electricar. Delivers 18 secondary voltages ranging from 5 1/2 to 22 1/2 volts in 1-volt steps, with additional permanent voltages of 6 and 12 volts. Cat. No. 535-171, 75 Watts, Weight 5 Lbs.....each \$5.00

**Model 2**

Operates all American Flyer, Ives, Lionel and other wide gauge trains. Also Christmas lighting outfits up to sixteen 14-volt lamps. Delivers 24 secondary voltages ranging from 5 1/2 to 23 volts in 3/4-volt steps. Additional permanent voltages of 4 1/4, 9 and 13 1/2 volts. Cat. No. 535-181, 100 Watts, Weight 6 1/2 lbs.....each \$6.50

**Model 3**

Operates all types of trains. For use with window or counter display and Christmas tree lighting outfits up to thirty-two 14-volt lamps. Delivers 30 secondary voltages ranging from 1 to 30 volts in 1-volt steps. Additional permanent voltages of 6, 12, 18 and 24 volts. Cat. No. 535-191, 150 Watts, Weight 11 1/4 Lbs... each \$9.00

**Edwards Signaling Transformers**

Primary 110 Volts, 25-40 or 60 Cycles  
Secondary 4-8-12-16-20-24 Volts

**Schedule T**

These transformers adequately cover the signaling device field with a greater range of capacities.

Cat. No.	Each	Cycle	Watts	Wt. Lbs.
88	\$5.15	60	50	3
88	10.30	25-40	50	3
90	6.18	60	100	7
90	12.36	25-40	100	7
94	9.24	60	250	12
94	18.50	25-40	250	12
99	16.50	60	500	15
99	33.00	25-40	500	15



## No. 86 Edwards Steel Case Bell Ringing Transformers

Primary 110 Volts, 25-40 or 60 Cycles

### Schedule E

Correctly designed for the proper operation of all signaling devices.

Cycles	Watts	Std. Pkg.	Wt. Lbs.	Price Each
60	25	50	54	\$1.16
25-40	25	50	54	2.32

For 220-volt primary add 15 per cent to price.



## No. 86ER Edwards Bell Ringing Transformers

Fits on 3 1/4 and 4-Inch Octagon and Square Boxes

Primary 110 Volts, 25-40 or 60 Cycles

### Schedule E

Correctly designed for the proper operation of all signaling devices.

This transformer is of the exact wattage, voltage and other characteristics necessary to eliminate guess work on the part of the contractor or jobber.

For 220-volt primary add 15 per cent to price.



Cycles	Watts	Standard Package	Weight Pounds	Price Each
60	25	50	65	\$1.16
25-40	25	50	65	2.32

## No. 86ES Edwards Bell Ringing Transformers

Fits On 3 1/4 or 4-Inch Octagon and Square Boxes

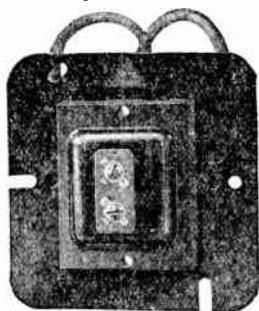
Primary 110 Volts, 25-40 or 60 Cycles

### Schedule E

Correctly designed for the proper operation of all signaling devices.

Cycles	Watts	Std. Pkg.	Wt. Lbs.	Price Each
60	25	50	80	\$1.16
25-40	25	50	80	2.32

For 220-volt primary add 15 per cent to price.



## No. 86T Edwards Steel Case Bell Ringing Transformers

Primary 6-8-14 Volts, 60 Cycles or 110 Volts, 25-40 Cycles

### Schedule E

These transformers are of the exact wattage, voltage and other characteristics necessary to eliminate guesswork on the part of the contractor and jobber.

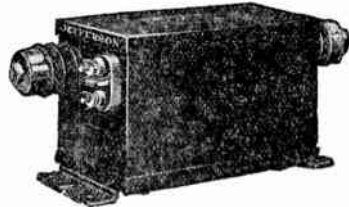
Cycles	Watts	Std. Pkg.	Wt. Lbs.	Price Each
60	25	50	56	\$1.55
25-40	25	50	56	3.10

For 220-volt primary add 15 per cent to price.



## Jefferson Luminous Tube Sign Transformers

Standard Types



Nos. 721-111, 721-121, 721-411

Designed for use in all types of portable or fixed, indoor or outdoor neon signs. The complete assortment of models provides a transformer to meet the most exacting requirements, both as to electrical and mechanical details.

Mid-point grounded, balanced design patented construction and many other improvements insure perfect secondary current regulation regardless to length of tubing operated; high efficiency permitting long tube lengths; cool operation; quietness; long life; neat appearance and lightness in weight.

The case in which transformer is assembled is made of extra heavy rust-resisting steel, flanged construction and with substantial brackets, insuring rugged construction. Binding posts and nuts are cadmium plated to guard against corrosion, while the case is black enameled, baked thoroughly to present a tough and durable finish.

### 110 Volts, 60 Cycles Binding Posts Standard (One at Each End of Case)

Cat. No.	Each	Cap. V.A.	SECONDARY Volts	M.A.	Length	Width	Height	Approx. Wt. Lbs.
721-111	\$15.00	450	15000	30	14 1/4	5 3/8	6	31
721-121	13.00	350	12000	30	14 1/4	4 11/16	6	27
721-131	9.50	180	6000	30	12	3	4 3/4	15
721-141	12.00	250	9000	30	11 9/16	4 3/16	5 1/4	21
721-151	10.50	225	7500	30	11 9/16	4 3/16	5 1/4	21
721-161	8.00	150	5000	30	9 9/16	4	4 7/8	14
721-221	12.00	250	12000	24	11 9/16	4 3/16	5 1/4	21
721-411	22.00	900	15000	60	14 1/4	5 11/16	7 1/4	47
721-421	19.00	720	12000	60	14 1/4	5 7/8	6	39
721-441	16.50	540	9000	60	14 1/4	5 3/8	6	33

### Leads Standard—Narrow Case

721-171	\$7.00	100	3500	30	6 1/16	3 1/8	4 1/2	9
721-191	6.50	90	3000	30	8 1/4	3 1/8	4 3/4	9
721-331	8.00	150	6000	18	12	2 3/4	4 3/4	12
721-341	10.50	190	9000	18	12	3	4 3/4	15
721-351	9.00	150	7500	18	9 9/16	2 11/16	3 17/32	13
721-361	6.50	100	5000	18	6 1/16	3 1/8	4 1/2	9 1/2
721-371	6.25	75	3000	18	6 1/16	2 11/16	4 1/2	9 1/4
721-391	6.00	80	3000	18	8 1/4	3 1/8	4 3/4	8 1/2

### Binding Posts Standard (Both at One End of Case)

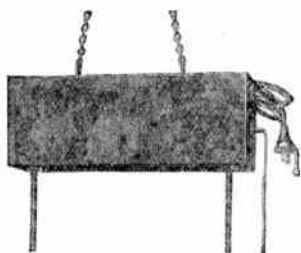
721-111X	\$15.00	450	15000	30	12 1/2	5 9/16	6	31
721-121X	13.00	350	12000	30	12 1/2	5 9/16	6	29
721-141X	12.00	250	9000	30	11	4 1/8	5 3/4	22
721-221X	12.00	250	12000	24	11	4 1/8	5 3/4	22

### High Power Factor Type

Particularly desirable in d.c. districts where it is necessary to use converters.

Cat. No.	Each	Cap. V.A.	SECONDARY Volts	M.A.	Length	Width	Height	Approx. Wt. Lbs.
724-111	\$21.00	250	15000	30	14 1/4	5 3/8	8	37
724-121	20.00	200	12000	30	14 1/4	5 3/8	8	35
724-141	17.00	150	9000	30	11 9/16	4 3/16	7 3/8	26
724-151	15.00	120	7500	30	11 9/16	4 3/16	7 3/8	25
724-161	12.50	90	5000	30	9 1/8	4	6 7/16	16
724-221	17.00	150	12000	24	11 9/16	4 3/16	7 3/8	26

**Jefferson Luminous Tube Sign Transformers**



**Type 726 with Secondary Leads**

**Cabinet Type**

Equipped with primary pull switch and 7-foot primary cord with standard 2-prong plug and approved connector means for grounding. Where conduit or armored cable installation is required, entry may be made by removing the cord and bushing; if entry at top is more practical, a knockout is provided. A plate in the end of the case is removable for making connections from the supply circuit to transformer leads.

For conduit or armored cable installations these transformers may be obtained without the primary cord and plug, at a reduction of \$1.00. Likewise, the primary pull switch may be omitted and the price is reduced \$1.00.

**Cable on Secondary**

Cat. No.	Each	Cap. V.A.	SECONDARY Volts	M.A.	OVERALL DIMEN., IN. Length	Width	Height	Approx. Wt. Lbs.
726-111	\$19.50	450	15000	30	15 <sup>5</sup> / <sub>16</sub>	5	7 <sup>1</sup> / <sub>2</sub>	41
726-121	18.00	350	12000	30	15 <sup>5</sup> / <sub>16</sub>	5	7 <sup>1</sup> / <sub>2</sub>	40
726-141	16.50	250	9000	30	15 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	34
726-161	13.00	150	5000	30	10 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	15
726-221	16.50	250	12000	24	15 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	33
726-351	14.50	150	7500	18	15 <sup>5</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	24
726-361	12.50	100	5000	18	10 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	12

**Leads Standard**

726-131	\$14.50	180	6000	30	15 <sup>5</sup> / <sub>16</sub>	3	7 <sup>1</sup> / <sub>2</sub>	25
726-151	15.00	225	7500	30	15 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	32
726-331	13.00	150	6000	18	15 <sup>5</sup> / <sub>16</sub>	3	7 <sup>1</sup> / <sub>2</sub>	24
726-341	15.00	190	9000	18	15 <sup>5</sup> / <sub>16</sub>	3	7 <sup>1</sup> / <sub>2</sub>	25

**Electrode Housing Standard**

727-111	\$19.00	450	15000	30	15 <sup>5</sup> / <sub>16</sub>	5	7 <sup>1</sup> / <sub>2</sub>	41
727-121	17.50	360	12000	30	15 <sup>5</sup> / <sub>16</sub>	5	7 <sup>1</sup> / <sub>2</sub>	40
727-131	14.00	180	6000	30	15 <sup>5</sup> / <sub>16</sub>	3	7 <sup>1</sup> / <sub>2</sub>	25
727-141	16.00	270	9000	30	15 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	34
727-151	14.50	225	7500	30	15 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	32
727-161	12.50	150	5000	30	10 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	15
727-221	16.00	290	12000	24	15 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	33
727-331	12.50	150	6000	18	15 <sup>5</sup> / <sub>16</sub>	3	7 <sup>1</sup> / <sub>2</sub>	24
727-341	14.50	190	9000	18	15 <sup>5</sup> / <sub>16</sub>	3	7 <sup>1</sup> / <sub>2</sub>	25
727-351	14.00	160	7500	18	15 <sup>5</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	24
727-361	12.00	130	5000	18	10 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	12

All of the above transformers have 110-volt, 60-cycle primaries. Prices for other voltages and frequencies on application.

**Core and Coil**

Particularly adaptable for small portable signs, where space is at a premium and where small sections of tube are to be operated.

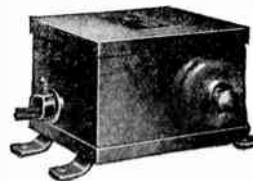
Cat. No.	Each	Cap. V.A.	SECONDARY Volts	M.A.	OVERALL DIMEN., IN. Length	Width	Height	Approx. Wt. Lbs.
720-361	\$4.00	100	5000	18	3 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub>
720-371	3.75	80	4000	18	3 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	5
720-381	3.00	50	2000	18	3 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	4	3 <sup>1</sup> / <sub>2</sub>
720-391	3.50	60	3000	18	3 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>

All of the above transformers have 110-volt, 60-cycle primaries. Prices for other voltages and frequencies on application.

**Jefferson Oil Burner Ignition Transformers**



**Nos. 638-171, 638-251, 638-261 and 638-271**



**No. 638-281**

The introduction of various types of burners has required the development of different types of transformers. This is a transformer for every specific application—5000, 10000, 12000 and 15000-volt ratings; for intermittent and continuous service; grounded, mid-point grounded, balanced mid-point grounded, and insulated secondaries; and in core and shell type designs.

The cool operation is accomplished by exacting requirements, liberal design throughout, plus the use of quality materials of adequate size which results in long transformer life.

Equipped with built-in condensers of proper size and design to eliminate the possibility of objectionable radio interference.

Nos. 638-251, 638-261, 638-271 and 638-171 are assembled in the new stream lined case. This case is of heavy drawn steel of exceptional durability, treated to resist rust and finished in a high lustre long-wearing black enamel. All other types are assembled in similarly rugged and attractive cases of standard design. Universal mounting brackets of sturdy design are provided.

A junction box of liberal proportions is built into the top of the case. Knockouts are provided in two sides and in the end of the case for convenient entrance. Quick and easy splicing results and there is ample space for additional wiring which any installation may require. Primary leads 24 inches long are standard on all types.

**110 Volts; 60 Cycles Primary**

**Grounded**

Cat. No.	Each	Cap. V.A.	SECONDARY Volts	Output M.A.	Type of Core	Max. Gap Setting of Inches	No. Sec.	Approx. Wt. Lbs.
*638-281	\$10.25	125	5000	18	Shell	1/16	1	9

**Insulated**

*638-191	\$10.25	125	5000	18	Shell	1/16	2	9
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**Grounded**

638-171	\$12.50	250	10000	23	Core	3/16	1	14
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**Mid-Point Grounded**

638-251	\$12.50	250	10000	23	Core	3/16	2	14
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**Insulated**

638-261	\$13.25	250	10000	23	Core	3/16	2	14
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**Mid-Point Grounded**

638-271	\$14.00	250	12000	20	Core	1/4	2	14
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**Mid-Point Grounded (2)**

638-291	\$15.50	450	15000	30	Shell	1/8	2	22
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\*Not equipped with radio filter.

The above transformers are designed for operation on 110 volt 60 cycle a.c. They are obtainable in other voltages and frequencies at extra cost. Prices on application.



## Jefferson Double Wound (Insulating) Transformers

50-60 Cycles



This type of air cooled transformer has been very commonly used in railway service for lighting and signaling purposes. In addition it is required for signaling systems of schools, factories, mines, etc., for remote control switching, for lighting purposes, to operate low-voltage equipment from power lines, for insulating circuits from power and lighting supply lines, for

emergency lighting systems, etc.

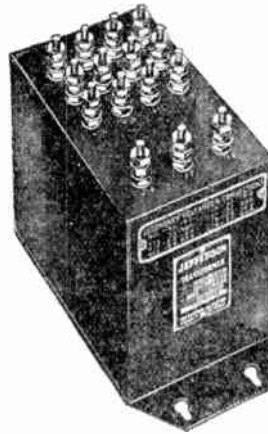
Illustration shows the standard type of double wound transformer which is equipped with wiring compartment for housing primary and secondary splices. Knock-outs are provided for making connections with rigid or flexible steel conduit or for inserting porcelain bushings where open wiring is employed.

The standard line does not comply with the A.R.A. standard, but does comply with the A.I.E.E. specifications. Transformers complying with the A.R.A. specifications can be furnished on special order.

## Jefferson Railway Transformers

Indoor Type

For Signal, Lighting and Rectifier Service



Designed to conform to the testing and constructional specifications of the American Railway Association. Intended for use in the operation of electrical equipment incidental to railway signal systems such as signal lights, battery rectifiers, relays and associated requirements.

This is an air cooled unit designed for wall or shelf mounting.

Windings developing or carrying 115 volts or less are brought out to standard A.R.A. terminals mounted on an attractive bakelite panel. Windings carrying in excess of 115 volts are brought out

of the housing in the form of flexible leads which are terminated in connecting lugs.

Generally, compensating taps are supplied on the primaries, although for some services, special auto transformer taps are furnished. When compensating taps are furnished, they are full of capacity rating.

Primary windings of 115 volts or less and all secondary windings are insulated to withstand a dielectric strength test of 3000 volts. Primary windings in excess of 115 volts are designed to withstand a dielectric strength test of 10000 volts.

Name plates and winding diagrams are furnished with each transformer which give the complete information required by the A.R.A. standards.

The following table outlines a number of the more popular types of transformers furnished for these services. These transformers fulfill practically all signalling system requirements, although in many cases transformers of special specifications are supplied.

### 220-230-240 Primary Volts; 110-115-120 Secondary Volts

Cat. No.	*Each	Cap. V.A.	APPROX. DIMEN., IN.			Approx. Wt. Lbs.
			Depth	Width	Length	
235-101	\$10.50	50	3 3/4	4 1/16	6 11/16	5 1/2
235-111	11.25	75	3 3/4	4 1/16	6 11/16	7
235-121	12.00	100	3 3/4	4 1/16	6 11/16	9
235-131	13.50	150	4 7/8	4 7/8	7 5/8	11
235-141	16.25	250	4 7/8	4 7/8	7 5/8	19
235-151	22.50	500	5 1/2	6 3/8	11 3/8	27
235-161	28.00	750	6 1/4	6 3/8	11 3/8	32

### 220-240 Primary Volts; 115-230 Secondary Volts

235-201	\$34.50	1000	6 5/16	7 1/16	13 3/8	38
235-211	43.00	1500	7 7/16	8 5/16	14 1/4	50
235-221	50.75	2000	8 9/16	8 5/16	14 1/4	65
235-231	64.25	3000	9 9/16	10 7/16	14 1/4	85
235-241	93.50	5000	9 9/16	10 7/16	16	130
235-251	130.00	7500	9 9/16	10 7/16	19	175
235-261	167.00	10000	9 9/16	10 7/16	23	265

### 440 Primary Volts; 110 Secondary Volts

235-501	\$11.25	50	3 3/4	4 1/16	6 11/16	5 1/2
235-511	12.00	75	3 3/4	4 1/16	6 11/16	7
235-521	13.50	100	3 3/4	4 1/16	6 11/16	9
235-531	14.75	150	4 7/8	4 7/8	7 5/8	11
235-541	17.50	250	4 7/8	4 7/8	7 5/8	19
235-551	24.50	500	5 1/2	6 3/8	11 3/8	27
235-561	30.25	750	6 1/4	6 3/8	11 3/8	32

### 550-440 Primary Volts; 110-220 Secondary Volts

235-301	\$12.25	50	3 3/4	4 1/16	6 11/16	5 1/2
235-311	13.00	75	3 3/4	4 1/16	6 11/16	7
235-321	14.75	100	3 3/4	4 1/16	6 11/16	9
235-331	16.00	150	4 7/8	4 7/8	7 5/8	11
235-341	19.25	250	4 7/8	4 7/8	7 5/8	19
235-351	27.00	500	5 1/2	6 3/8	11 3/8	27
235-361	33.00	750	6 1/4	6 3/8	11 3/8	32

### 440-220 Primary Volts; 220-110 Secondary Volts

235-401	\$38.50	1000	6 5/16	7 1/16	11 3/8	38
235-411	45.50	1500	7 7/16	8 5/16	14 1/4	50
235-421	54.00	2000	8 9/16	8 5/16	14 1/4	65
235-431	69.50	3000	9 9/16	10 7/16	14 1/4	85
235-441	101.50	5000	9 9/16	10 7/16	16	130
235-451	142.25	7500	9 9/16	10 7/16	19	175
235-461	182.00	10000	9 9/16	10 7/16	23	265

### 550-600 Primary Volts; 220-110 Secondary Volts

235-601	\$39.25	1000	6 5/16	7 1/16	11 3/8	38
235-611	47.00	1500	7 7/16	8 5/16	14 1/4	50
235-621	55.50	2000	8 9/16	8 5/16	14 1/4	65
235-631	71.00	3000	9 9/16	10 7/16	14 1/4	85
235-641	103.00	5000	9 9/16	10 7/16	16	130
235-651	144.25	7500	9 9/16	10 7/16	19	175
235-661	184.25	10000	9 9/16	10 7/16	23	265

\*For 25 cycle, add 50%.

### 50-100 Cycles; 115-100 Primary Volts

#### Lighting Type

Cat. No.	*Each	Cap. V.A.	No. of Sec.	SECONDARY Voltages and Tap Positions	APPROX. DIMEN., IN.			Approx. Wt. Lbs.
					Cap. Amps.	Ht.	Wall Space	
236-101	\$8.00	50	1	16(12-1-3)	3.0	5 1/2	5 x 5	12
236-111	12.25	100	1	16(12-1-3)	6.0	7 3/4	9 1/4 x 3 3/4	20
236-121	16.50	160	2	15(6-6-1-1-1)	5.3	7 3/4	9 1/4 x 4 3/4	25
236-131	15.75	200	1	15(5-7-3)	14.0	7 3/4	9 1/4 x 4 3/4	26

#### Universal Rectifying Type

236-141	\$17.50	200	4	26(19-1-5)	2.0	7 3/4	9 1/4 x 4 3/4	26
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#### Universal Rectifying and Lighting Type

236-151	\$18.65	240	1	15(4-1-1-1)	{ 10.7 7 3/4 9 1/4 x 4 3/4 27
				25(19-1-5)	
				6(5-1)	

#### Track Type

236-161	\$17.85	300	1	.37-17 in	17.9	7 3/4	9 1/4 x 4 3/4	29
236-171	19.35	300	2	.37-17 in				
236-181	27.50	600	2	45 Equal Steps	9.0	7 3/4	9 1/4 x 4 3/4	30
				.37-17 in				
236-191	31.25	600	4	45 Equal Steps	17.9	9 3/4	10	x 7 1/2
				.49-17 in				
				35 Equal Steps				

\*For 230-200, 460-400 or 575-500 primary volts, add 20%. Can also be furnished in 25-40 cycles. Prices and data upon application.

**Edwards Annunciates**



No. 672

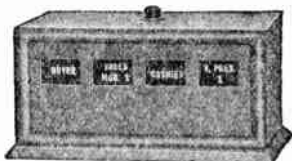
These annunciates have been greatly reduced in size without sacrificing clearness of indication. There are 85 different indications furnished with each annunciate. Buzz audible signal with connectors for buzz or ring extension. Standard, 8 to 12 volts a.c. Can be furnished for d.c. Larger sizes on application.

**No. 672 Flush Manual Reset**

Furnished with wall box. Standard finish, white. Special finishes on application.

No. of Drops	Each	ARRANGEMENT Across	Down	OVERALL DIMENSIONS, INCHES	Height	Width	Depth
2	\$14.50	2	1	4 <sup>5</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	3	3
3	15.50	3	1	4 <sup>5</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	3	3
4	16.50	4	1	4 <sup>5</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	3	3
6	20.50	3	2	4 <sup>5</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	3	3
8	23.50	4	2	4 <sup>5</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	3	3
10	28.50	5	2	4 <sup>5</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>8</sub>	3	3
12	33.50	6	2	4 <sup>5</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>8</sub>	3	3
14	39.50	5	3	6 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	3	3
16	43.50	6	3	6 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	3	3
18	48.50	6	3	6 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	3	3
20	53.50	5	4	7 <sup>7</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>8</sub>	3	3
24	63.50	6	4	7 <sup>7</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>8</sub>	3	3
26	71.50	7	4	7 <sup>7</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	3	3
28	79.50	7	4	7 <sup>7</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	3	3

**No. 673 Desk Manual Reset**



Felt covered base. Positive reset push on top of case. Standard finishes, mahogany, oak, and walnut.

No. of Drops	Each	ARRANGEMENT Across	Down	OVERALL DIMENSIONS, INCHES	Height	Width	Depth
2	\$30.00	2	1	2 <sup>1</sup> / <sub>2</sub>	4	2 <sup>3</sup> / <sub>4</sub>	4
3	35.20	3	1	2 <sup>1</sup> / <sub>2</sub>	4	2 <sup>3</sup> / <sub>4</sub>	4
4	41.60	4	1	2 <sup>1</sup> / <sub>2</sub>	5	2 <sup>3</sup> / <sub>4</sub>	4
6	54.40	6	1	2 <sup>1</sup> / <sub>2</sub>	7	2 <sup>3</sup> / <sub>4</sub>	4
8	67.20	8	1	2 <sup>1</sup> / <sub>2</sub>	9	2 <sup>3</sup> / <sub>4</sub>	4
10	80.00	5	2	3 <sup>3</sup> / <sub>16</sub>	7	2 <sup>3</sup> / <sub>4</sub>	4
12	92.80	6	2	3 <sup>3</sup> / <sub>16</sub>	7	2 <sup>3</sup> / <sub>4</sub>	4
14	105.60	7	2	3 <sup>3</sup> / <sub>16</sub>	9	2 <sup>3</sup> / <sub>4</sub>	4
16	118.40	8	2	3 <sup>3</sup> / <sub>16</sub>	9	2 <sup>3</sup> / <sub>4</sub>	4
18	131.20	9	2	3 <sup>3</sup> / <sub>16</sub>	11	2 <sup>3</sup> / <sub>4</sub>	4
20	144.00	10	2	3 <sup>3</sup> / <sub>16</sub>	11	2 <sup>3</sup> / <sub>4</sub>	4

**No. 82 Surface Manual Reset**



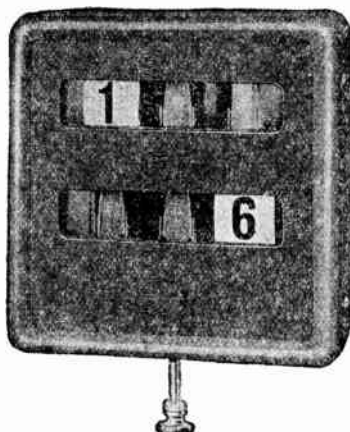
Standard finish, black.

No. of Drops	Each	ARRANGEMENT Across	Down	OVERALL DIMENSIONS, INCHES	Height	Width	Depth
2	\$11.50	2	1	4 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
3	12.50	3	1	4 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
4	13.50	4	1	4 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
6	17.00	3	2	4 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
8	20.50	4	2	4 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
10	25.50	5	2	7 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
12	30.50	6	2	7 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
14	36.80	5	3	7 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
16	40.50	4	4	7 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
18	45.50	5	4	7 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
20	50.50	5	4	7 <sup>3</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>
24	60.50	6	4	7 <sup>3</sup> / <sub>16</sub>	8 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>

**Edwards Dixie and San-Fer-Ann Annunciators**

Hand Reset

6 Volts D.C. or 8 Volts A.C.



Schedule T

All metal case, surface types. No. 80 drop is used. Indication is black on a white background; cards are interchangeable.

Audible signal is a specially designed buzzer.

Standard finish of No. 81, black; No. 91, white.

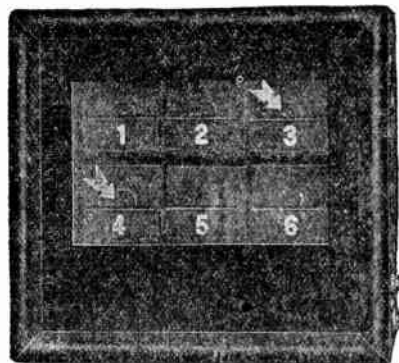
Weight is for annunciator in shelf package.

No. of Drops	No. 81 Dixie Each	No. 91 San-Fer-Ann Each	ARRANGEMENT Across	Down	DIMENSIONS, INCHES	Height	Width	Depth	Wt., Lbs.
2	\$11.50	\$12.08	2	1	4 <sup>3</sup> / <sub>4</sub>	6 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	3	3
3	12.50	13.13	3	1	4 <sup>3</sup> / <sub>4</sub>	6 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	3	3
4	13.50	14.18	4	1	4 <sup>3</sup> / <sub>4</sub>	6 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	3	3
6	17.00	17.85	3	2	7	6 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	4	4
8	20.50	21.53	4	2	7	6 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	4	4
10	25.50	26.78	5	2	7	8 <sup>3</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	5	5
12	30.50	32.03	6	2	7	9 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	5	5

Larger sizes on application.

**No. 403 Edwards Surface Type Annunciators**

Electric Reset  
8 Volts D.C. or 16 Volts A.C.  
Schedule T



An all metal case with best quality of grained wood finish. Standard finish, black; mahogany or oak at no extra charge; special finishes, upon application.

The No. 4 drop is used. The current consumption of the drop for indicating and resetting is below the average. The audible signal is a new type double adjustment buzzer. Reset buttons are regularly furnished on case. Connectors only can be furnished without extra charge.

Weight is for annunciator in shelf package.

No. of Drops	ARRANGEMENT Across	Down	DIMENSIONS, INCHES	Height	Width	Depth	Weight Pounds	Price Each
4	2	2	6 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	3	3 <sup>1</sup> / <sub>4</sub>	\$26.00	
6	3	2	6 <sup>1</sup> / <sub>8</sub>	6 <sup>7</sup> / <sub>8</sub>	3	4	32.00	
8	4	2	6 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	3	5 <sup>1</sup> / <sub>4</sub>	38.00	
10	4	3	8 <sup>3</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>8</sub>	3	6	44.00	
12	4	3	8 <sup>3</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	3	6 <sup>1</sup> / <sub>2</sub>	52.00	
16	6	3	8 <sup>3</sup> / <sub>16</sub>	11 <sup>7</sup> / <sub>8</sub>	3	8 <sup>1</sup> / <sub>4</sub>	68.00	
20	5	4	10 <sup>1</sup> / <sub>4</sub>	9 <sup>5</sup> / <sub>8</sub>	3	10	84.00	
24	6	4	10 <sup>1</sup> / <sub>4</sub>	11 <sup>7</sup> / <sub>8</sub>	3	12	100.00	

Additional Drops..... 5.00



## No. 409 Edwards Flush Type Annunciators

Electric Reset

8 Volts D.C. or 16 Volts A.C.

Schedule T

An all metal case. Standard finish is black; mahogany or oak at no extra charge; special finishes, upon application.

No. 4 drop is used. The current consumption of the drop both for indicating and resetting is below the average.

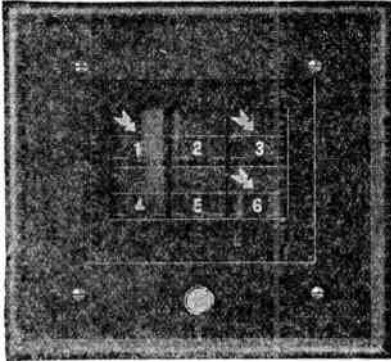
The audible signal is a new type double adjustment buzzer. Reset buttons are regularly furnished on case. Connectors only can be furnished without extra charge.

Add 3 inches to height and width for trim. Six-foot cord included if specified.

Weight is for annunciator in shelf package.

Prices include steel wall box.

No. of ARRANGEMENT			DIMENSIONS, INCHES			Weight Pounds	Price Each
Drops	Across	Down	Height	Width	Depth		
4	2	2	8 <sup>7</sup> / <sub>8</sub>	7	3 <sup>7</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	\$60.00
6	3	2	8 <sup>7</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	5	66.00
8	4	2	8 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>2</sub>	72.00
10	4	3	10	10 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>2</sub>	78.00
12	4	3	10	10 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>4</sub>	86.00
16	6	3	10	13 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>2</sub>	102.00
20	5	4	12	11 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	11	118.00
24	6	4	12	13 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	12 <sup>1</sup> / <sub>2</sub>	134.00
Additional Drops.....							5.00



## No. 807 Edwards High Voltage Annunciators

Hand Reset

110 and 220 Volts, A.C. or D.C.

Schedule T

Has metal case with double micarta backboard on which are mounted No. 80 drops.

Care has been given to insulation of all current carrying parts, eliminating all materials affected by heat or moisture.

Prices include a No. 100 3-inch Recti bell which may be installed adjacent to the annunciator or where desired. Annunciator is wired with marked connectors for this purpose. For central stations there are usually conditions requiring special features. Photographs and descriptions of annunciators for this service will be sent upon request.

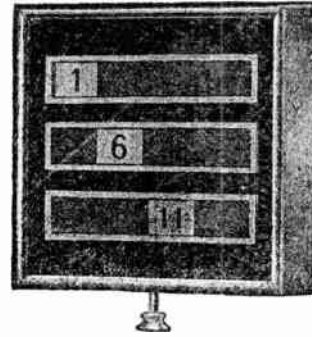
Surface type metal case; standard finish is black. The 110 and 220 volts a.c. or d.c. are standard; other voltages on application.

Special finishes, upon application. Prices shown are for 110 volts a.c. or d.c.

No. of ARRANGEMENT			DIMENSIONS, INCHES			Weight Pounds	Price Each
Drops	Across	Down	Height	Width	Depth		
4	4	1	5 <sup>5</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	7	\$62.00
6	3	2	7 <sup>7</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	8	74.00
8	4	2	7 <sup>7</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	10	91.00
10	5	2	7 <sup>7</sup> / <sub>8</sub>	9 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	12	102.00
12	4	3	7 <sup>7</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	14	124.00

Additional Drops. Add per Drop..... 16.00  
For 220 Volts, Add per Drop..... 2.00

\*Approximate, per article in shelf package.



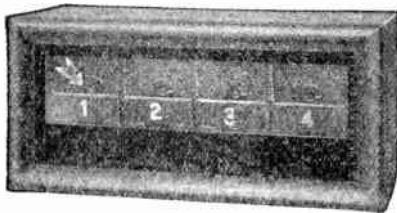
## No. 413 Edwards Desk Type Annunciators

Electric Reset

8 Volts D.C. or 16 Volts A.C.

Schedule T

Standard finish black. No. 4 drop. Felt-covered bottom. Six-foot cord included if specified.



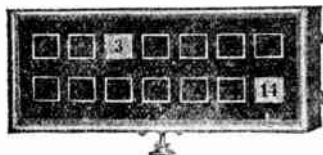
No. of ARRANGEMENT			DIMENSIONS, INCHES			Weight Pounds	Price Each
Drops	Across	Down	Height	Width	Depth		
3	3	1	4	6	3 <sup>1</sup> / <sub>8</sub>	3	\$44.00
4	4	1	4	7 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	52.00
5	5	1	4	9	3 <sup>1</sup> / <sub>8</sub>	4	60.00
6	6	1	5 <sup>1</sup> / <sub>2</sub>	6	3 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	68.00
8	8	1	5 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	84.00
Additional Drops. Add per Drop.....							8.00

## No. 813 Edwards Railway Annunciators

Hand Reset

6 Volts D.C. or 8 Volts A.C.

Schedule T



Metal case, surface type; mahogany finish unless otherwise specified. No. 156 Monitor bell for mounting.

No. of ARRANGEMENT			DIMENSIONS, INCHES			Weight Pounds	Price Each
Drops	Across	Down	Height	Width	Depth		
10	5	2	5 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	\$42.98
12	6	2	5 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	5	51.60
14	7	2	5 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	6	60.18
16	8	2	5 <sup>1</sup> / <sub>2</sub>	14 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	7	68.82
18	9	2	5 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	77.40
20	10	2	5 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	10	85.90
22	11	2	5 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	94.50
24	12	2	5 <sup>1</sup> / <sub>2</sub>	20 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>4</sub>	102.84
Additional Drops, per Drop.....							5.50

## Edwards Annunciators

Special Annunciator Features

Schedule T

### No. 8 Manual Reset Drops

New, efficient drop used in all annunciators.

No. 8.....each \$4.00

### No. 80 Hand Reset Drops

Used in all hand reset annunciators.

No. 80.....each \$4.00

### No. 4 Electric Reset Drops

Used in all electric reset annunciators.

The indication is a white arrow which points directly at the name card. When reset, arrow drops out of sight behind name card. Front is of plain glass and a dull black background, it can be seen from any angle. Cannot shake or jar out of adjustment. Locked in normal position; cannot indicate until current is passed through magnets.



No. 4.....each \$6.00

Extras

Up to 24 volts d.c. or a.c. no charge. For 25 to 40 drops, add per drop, \$1.00.

For special commercial finishes, add per annunciator: 4 to 10 drop, \$6.00; 12 to 24 drop, \$8.00; 26 to 52 drop, \$12.00; over 52 drop, \$16.00. For solid bronze or brass cases, add per annunciator: 4 to 10 drop, \$12.00; 12 to 24 drop, \$20.00; 26 to 52 drop, \$30.00; over 52 drop, \$50.00.

Individual reset, with pushes on case, per push, \$4.00; with terminals only for remote control, per terminal, 60 cents.

Arrangement of drops, same addition as for special finishes.

Special markings, other than number, per drop, 30 cents.

Bell instead of buzzer, each \$3.00.

Switch on case, 1 or 2 point, each \$3.50.



**Edwards Lamp Annunciators**

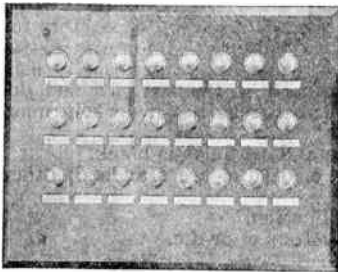
*Schedule T*

OPERATION.—If locking pushes, toggle or push button switches are used, the lamps will remain lighted while the switch is on and will be extinguished while the switch is off. If standard momentary contact pushes are used, relays are supplied in a separate case with the reset button on the annunciator. If specified, relays can be mounted in the annunciator case, which, however, adds greatly to its size and does not improve its appearance.

In ordering, specify exact operating voltage, finish, with or without relays; if with relays, whether they are to be in separate case or in annunciator; if opaque glass type, whether  $\frac{7}{8}$  or  $1\frac{1}{4}$ -inch numerals.

**Bull's Eye Type**

- No. 421, For Surface Wall Mounting
- No. 422, For Flush Wall Mounting
- No. 423, For Desk

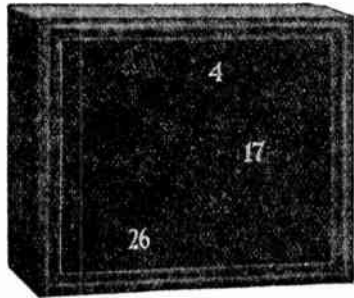


No. 422

anism on back of front plate, which is mounted directly on metal wall box. In larger size annunciators it is advisable for easier installation to have front plate hinged to a trim which fastens directly to metal wall box. This method of construction can be followed if specified.

**Opaque Glass Type**

- No. 424, For Surface Wall Mounting
- No. 425, For Flush Wall Mounting



No. 424

Equipped with  $\frac{5}{8}$ -inch opal signals arranged over card racks. Lamps are easily changed from front by removing opals. All metal case and trim.

Standard finish, brush brass or bronze for flush type; black or mahogany for surface types.

Illustration shows standard method of construction with all mech-

For use where it is advisable to have indications readable from a distance.

Lamps are in individual shield units; when lighted cause numerals to show plainly through opaque glass.

All metal case and trim. Standard finish, black or mahogany.

Made in 2 styles: for  $\frac{7}{8}$  or  $1\frac{1}{4}$ -inch numerals.

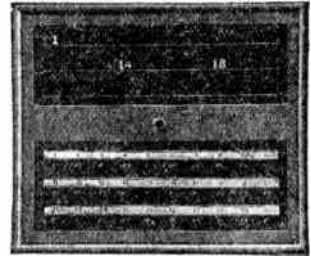
Prices shown are for  $\frac{7}{8}$ -inch numerals.

**No. 10 Edwards Return Call Annunciates**

Hand Reset

Standard Voltage, 8-12 Volts A.C.

*Schedule T*



Used in hotels, institutions, etc. for the purpose of calling the room and receiving acknowledgment from the room that the call has been heard, or vice versa.

Designed to eliminate the large number of wires necessary if the standard annunciator, bells and pushes are used. Presents reduction in size without affecting clearness of indication.

All metal case, surface type, in black, mahogany or oak.

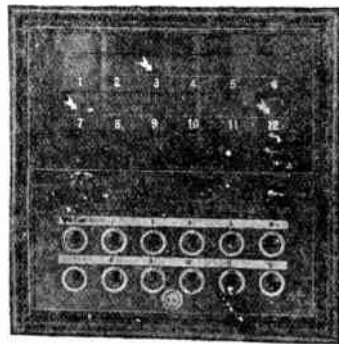
No. of Drops	Each	ARRANGEMENT		DIMENSIONS, INCHES		
		Across	Down	Height	Width	Depth
16	\$140.00	8	2	8 $\frac{5}{8}$	11	3 $\frac{1}{2}$
20	152.00	7	3	11	10	3 $\frac{1}{2}$
25	176.00	9	3	11	12	3 $\frac{1}{2}$
30	197.00	9	4	13 $\frac{3}{8}$	12	3 $\frac{1}{2}$
40	252.00	10	4	13 $\frac{3}{8}$	13	3 $\frac{1}{2}$
50	307.00	10	5	15 $\frac{3}{4}$	13	3 $\frac{1}{2}$
60	351.00	12	5	15 $\frac{3}{4}$	15	3 $\frac{1}{2}$
70	397.00	12	6	18 $\frac{1}{8}$	15	3 $\frac{1}{2}$
80	448.00	14	6	18 $\frac{1}{8}$	17	3 $\frac{1}{2}$
90	495.00	15	6	18 $\frac{1}{8}$	18	3 $\frac{1}{2}$
100	540.00	15	7	20 $\frac{1}{2}$	18	3 $\frac{1}{2}$

**No. 415 Return Call Annunciators**

Electric Reset

8 Volts D.C. or 16 Volts A.C.

*Schedule T*



Used for the purpose of calling the room and acknowledging from the room that the call has been heard and vice versa. With No. 4 drop.

The standard arrangement is one reset for every 20 drops. This annunciator allows the individual resetting of each drop where desired.

Surface type. Standard finish is black; mahogany or oak at no extra charge. Special finishes, upon application.

**Standard up to 32 Volts A.C. or D.C.—Schedule D**

No. of Lamps	Bulls Eye Types		Opaque Glass Types	Add for Relays Each
	Nos. 421 and 422 Each	No. 423 Each	Nos. 424 and 425 Each	
2		\$71.00		\$25.00
4	\$71.00	90.00		41.00
6	91.00	110.00	\$80.00	48.00
9	110.00	140.00	92.00	72.00
12	141.00	170.00	104.00	96.00
16	181.00	200.00	118.00	128.00
20	221.00	240.00	129.00	160.00
25	235.00	310.00	147.30	200.00
30	275.00		171.20	240.00
36	312.00		200.00	288.00
42	341.00		230.00	336.00
48	369.00		260.00	384.00
56	407.00		300.00	448.00

Larger Sizes, Add per Lamp . . . 5.00 . . . . . 5.00 \*8.00

\*Per relay.  
Price on application for 110 volt.  
Larger sizes of No. 423 Desk, prices on application.

No. of Drops	Each	ARRANGEMENT		DIMENSIONS, INCHES			Weight Pounds
		Across	Down	Height	Width	Depth	
25	\$221.00	9	3	16 $\frac{5}{8}$	17 $\frac{1}{4}$	3 $\frac{5}{8}$	23
30	247.00	10	3	16 $\frac{5}{8}$	18 $\frac{3}{4}$	3 $\frac{5}{8}$	25
36	283.00	9	4	20 $\frac{5}{8}$	17 $\frac{1}{4}$	3 $\frac{5}{8}$	28
42	331.00	11	4	20 $\frac{5}{8}$	20 $\frac{1}{4}$	3 $\frac{5}{8}$	33
49	377.00	10	5	24 $\frac{5}{8}$	18 $\frac{3}{4}$	3 $\frac{5}{8}$	37
56	416.00	12	5	23 $\frac{15}{16}$	21 $\frac{3}{4}$	3 $\frac{3}{4}$	41
64	468.00	13	5	23 $\frac{15}{16}$	23 $\frac{1}{4}$	3 $\frac{3}{4}$	46
72	512.00	15	5	23 $\frac{15}{16}$	26 $\frac{1}{4}$	3 $\frac{3}{4}$	52
81	567.00	14	6	27 $\frac{1}{4}$	24 $\frac{3}{4}$	3 $\frac{3}{4}$	57
90	619.00	15	6	27 $\frac{1}{4}$	26 $\frac{1}{4}$	3 $\frac{3}{4}$	62
100	676.00	15	7	30 $\frac{9}{16}$	26 $\frac{1}{4}$	3 $\frac{3}{4}$	69

Additional Drops . . . . . \$7.00

For flush type, add \$13.00 per annunciator.

## Faraday Annunciators

### Electric-Reset, Clover-Leaf-Target, Regular Size

#### All-Metal Cases

Schedule T

Reset buttons are regularly furnished on the case. Connections only can be furnished without additional charge so that annunciator can be reset from a remote point.

Round disc (5/8 inch) indications furnished instead of standard clover-leaf-target indications at same price.

Round-disc-target indications show a round white disc approximately 5/8 inch in diameter. Larger sizes than the standard can be furnished at an additional charge.

Each annunciator is furnished with 85 different markings—black characters on white background. Special markings, black on white background, add per drop, 30 cents.

Can be furnished with automatic-reset features, at no extra charge.

Multiple operation on a.c. or d.c. of not exceeding 3 annunciators, at no extra cost.

**STANDARD RESETTING.**—Electric-reset types are regularly furnished with one reset button for each 10 drops.

**EXTRA GROUP-RESET BUTTONS.**—Electric-reset annunciators are regularly furnished with one reset button for each 10 indications.

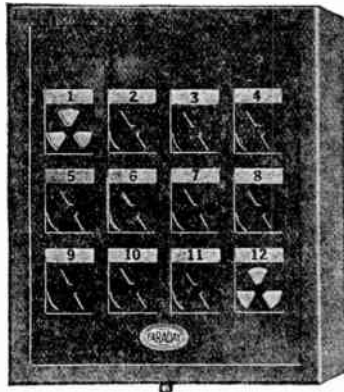
**SEPARABLE DROPS.**—Plug type removable, add to list price per drop, \$2.00.

Standard finishes: Surface type and desk type—black-velvet enamel, mahogany, walnut or golden oak; flush type—black-velvet enamel, white enamel, mahogany, walnut or golden oak.

Standard package, 1.

### Cat. No. 25-RM—Surface Type

For Operation on 18 Volts A.C. or 8 Volts D.C.



Will be wound up to 24 volts a.c. or d.c. at no additional charge.

Black-velvet enamel finish will be shipped unless otherwise specified.

No. of Drops	Black-Velvet of Enamel Each	White Enamel Each
4	\$26.00	\$27.30
6	32.00	33.60
8	38.00	39.90
10	44.00	46.20
12	52.00	54.60
14	60.00	63.00
16	68.00	71.40
18	76.00	79.80
20	84.00	88.20
24	100.00	105.00

Add to List Price for Each Additional Drop... 5.00 5.25

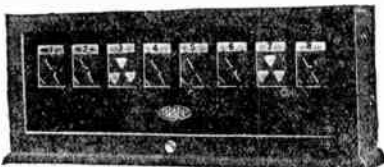
### Cat. No. 15-RM—Flush Type

Furnished complete with back box. White enamel finish shipped unless otherwise specified.

No. of Drops	Black-Velvet Enamel Each	White Enamel Each	No. of Drops	Black-Velvet Enamel Each	White Enamel Each
4	\$60.00	\$60.00	14	\$94.00	\$94.00
6	66.00	66.00	16	102.00	102.00
8	72.00	72.00	18	110.00	110.00
10	78.00	78.00	20	118.00	118.00
12	86.00	86.00	24	134.00	134.00

Add to List Price for Each Additional Drop..... \$5.00  
 For Hinged Door Add to List Price..... 10.00  
 For Omitting Back Box Up to 12 Drops, Deduct.... 1.00  
 For Omitting Back Box 14 Drops and Over, Deduct. 5.00

### Cat. No. 2-RM—Desk Type



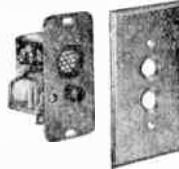
Furnished with 6-foot cord attached and terminal block.

Desk type inclined pattern furnished at same price.

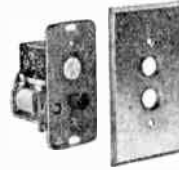
No. of Drops.....	3	4	5	6	8	10
Each.....	\$44.00	52.00	60.00	68.00	84.00	100.00

Add to List Price for Each Additional Drop..... \$8.00

## Edwards Ansercall for Return Call Systems



No. 139



No. 140

This device replaces return call stations except for d.c. operation. Fits any standard single gang switch box 2 3/8 inches deep and takes standard push-button-switch plates.

Buzz audible signal with no contacts, pivots or adjustment. May be varied after installation from loud low tone to a soft high tone through hole in sub-plate.

No. 140 has Annunciette type drop which leaves a visual signal. Operation of push button, when call is answered, automatically resets drop.

Standard, 8 to 12 volts, a.c.

Prices do not include plates.

No. 139, Non-Indicating... each \$4.80  
 No. 140, Indicating..... each 9.30

## No. 136 Edwards Surface Return Call Stations

Schedule T

Designed for installation in existing buildings. Provides a neat appearing plate mounted on a shallow cast box which provides entrance for conduit or open wires as desired. The audible signal is an Edwards Double Adjustment Lungen Buzzer, and the station is completely wired for installation with the special Edwards No. 265 Return Call Push.

The cast box is rubberoid black, the plate is brushed brass or nickel. Special finishes, upon application.

Bakelite plate can be furnished if desired at an additional charge of 25 cents. Weight, 1 1/2 pounds.

Price, No. 136..... each \$6.00

## No. 137 Edwards Flush Return Call Stations

Schedule T

A flush plate of pleasing design for mounting on a standard single gang switch box. The audible signal is an Edwards Double Adjustment Lungen Buzzer, and the station is completely wired for installation with the special Edwards No. 265 Return Call Push.

Standard finish is brushed brass or nickel plate. Special finishes, upon application.

Bakelite plate can be furnished if desired at an additional charge of 25 cents.

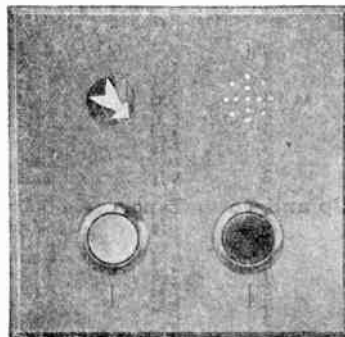
Weight, 1/2 pound.

Price, No. 137..... each \$5.00

## No. 138 Edwards Indicating Return Call Station—Schedule T

For use where it is desirable to indicate that a call has been made to the room during the occupant's absence.

It fits a standard 2-gang switch box. The audible signal is a Double Adjustment Lungen Buzzer. The visible signal is a white arrow outlined through a small round glass window. One push button is for the return call, the other to reset the indicating arrow.



Price, No. 138, Push and Buzzer, Wt. 1 Lb.... each \$12.00



**Edwards Elevator Annunciates**

**Hand Reset**

Standard Voltage, 8-12 Volts A.C. or D. C.

*Schedule T*

Presents a reduction in size without affecting clearness of indication.

Buzz audible signal.

Smooth, sturdy, reliable reset.

No. 130D, the up and down type, is equipped with reset push for each column of indications.

Order and price by number of drops not by number of floors.

Standard finish, black. Mahogany or oak, no extra charge.

Special finishes upon request.



No. 130

No. of Drops	Each	No. 130—Single Row			Each	No. 130D Up and Down Type		
		Height	Width	Depth		Height	Width	Depth
3	\$18.50	7 1/4	2 1/2	2 1/2	.....	.....	.....	
4	19.50	7 1/4	2 1/2	2 1/2	\$23.25	.....	.....	
5	21.40	9 3/4	2 1/2	2 1/2	.....	.....	.....	
6	23.25	9 3/4	2 1/2	2 1/2	27.10	7 3/8	4 2 1/2	
7	25.25	12 1/4	2 1/2	2 1/2	.....	.....	.....	
8	27.25	12 1/4	2 1/2	2 1/2	32.25	7 3/8	4 2 1/2	
9	29.25	14 3/4	2 1/2	2 1/2	.....	.....	.....	
10	31.25	14 3/4	2 1/2	2 1/2	36.25	10 1/8	4 2 1/2	
11	33.25	17 1/4	2 1/2	2 1/2	.....	.....	.....	
12	35.00	17 1/4	2 1/2	2 1/2	42.50	10 1/8	4 2 1/2	
13	40.00	12 7/8	4	2 1/2	.....	.....	.....	
14	45.00	12 7/8	4	2 1/2	52.50	12 7/8	4 2 1/2	

Larger sizes, add per drop, \$4.00.

**Nos. 414 and 414D Edwards Elevator**

**Annunciators**

Electric Reset  
8 Volts D.C. or  
16 Volts A.C.

*Schedule T*

Standard finish, black.

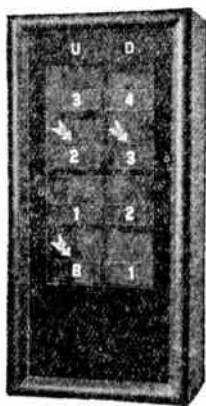
Arrangement: Up to 10 drops single column of drops; over 10, 2 columns of drops; No. 414D in 2 columns, Up and Down.

In ordering No. 414D, give number of drops and marks for drops.

Flush type add \$30.00.



No. 414



No. 414D

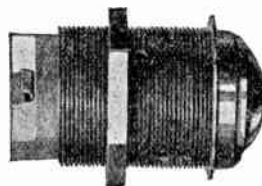
**No. 414—Standard Type**

No. of Drops	DIMENSIONS, INCHES			Weight Pounds	Price Each
	Height	Width	Depth		
4	9 3/4	3 1/2	3	2 1/2	\$36.00
5	11 3/4	3 1/2	3	3	39.00
6	13 1/4	3 1/2	3	3 1/2	42.00
7	15 1/4	3 1/2	3	4	45.00
8	16 3/4	3 1/2	3	4 1/2	48.00
10	20 1/4	3 1/2	3	5 1/2	54.00
12	13 1/4	5 1/2	3	6	62.00
14	15 1/4	5 1/2	3	7 1/2	70.00
16	16 3/4	5 1/2	3	8 1/2	78.00
18	18 3/4	5 1/2	3	8 3/4	86.00
20	20 1/4	5 1/2	3	9 1/4	94.00

**No. 414D—Up and Down Type**

6	8 1/4	5 1/2	3	3 3/4	\$52.00
8	9 3/4	5 1/2	3	5	58.00
10	11 3/4	5 1/2	3	5 3/4	64.00
12	13 1/4	5 1/2	3	6 1/4	72.00
14	15 1/4	5 1/2	3	7 3/4	80.00
16	16 3/4	5 1/2	3	8 3/4	88.00
18	18 3/4	5 1/2	3	9	96.00
20	20 1/4	5 1/2	3	9 1/2	104.00
Additional Drops					7.00

**Kirkland Bulls-I-Units**



A device for effecting visual signals without the usual complex installation and maintenance problems. Unit is a complete annunciator, consisting of a light chamber, terminal block, socket, lens cap (removed from front) and a symbol insert, all in one. Adapted for all kinds of visual signal work,

particularly in the construction of lamp annunciators. For all kinds of control devices, panel boards, etc.

The usual jeweled lens of the beehive type can be supplied in red, green or fiery opal; also in clear white inside frosted type.

Clear type lens employs colored inserts behind lens and until lamp is lighted shows white, regardless of color of insert. When lamp lights, color shows brilliantly and is seen from every angle. Numbers, letters and symbols of the sticker type can be placed between lens and insert and can be seen clearly from a distance when lamp lights, although invisible until then.

To mount it is only necessary to drill a hole for each bulls-eye and slip unit in place, locking nuts on threaded sections in rear of panel or plate.

A variety of lamps can be furnished with No. 600 unit. The G6 or elevator lamp and flashlight lamps can be used for voltages from 3 to 24 volts; S6 lamp for 120 volts.

Style of insert: No. 600, white; No. 601, red; No. 602, green; No. 603, yellow; No. 604, signal blue.

Style of finish: CHR, standard chromium; SRB, statuary bronze; BRA, brass.

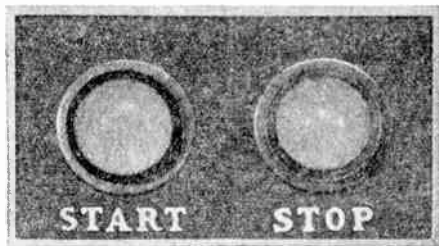
When ordering, give number and finish letters.

Made in two standard sizes. No. 600 has a lens 1 1/8 inch in diameter and requires a 1 3/8-inch mounting hole. Overall length, 2 3/8 inches.

No. 500 is for low voltage elevator T lamps only; has a lens 3/4 inch in diameter and requires a 7/8-inch mounting hole. Prices on application.

No. 600 Unit, with Clear Lens and Insert or Jeweled Lens, as Desired.....each \$1.50

**Kirkland Bulls-I-Plaques**



A practical development for the application of bulls-eye (pilot lights) with lettering or numbering, to panel boards, electrical devices and for all remote control visual indication purposes.

Cast in genuine solid bronze, aluminum or in nickel-silver; size, shape, lettering and numbering to order. Standard lettering or numbering is block type; all letters are raised and polished. Background is stippled and oxidized. Border may be plain, raised single flat-band, raised double flat-band or filed bevel edge. Special shapes or styles of lettering and numbering, trade-marks, monograms, etc., are extra.

Approximate thickness of plaque, 3/16 inch.

Square or Long Type Plaque, Including Raised Letters or Numbers.....per square inch \$1.15  
Minimum Charge for Square or Oblong Plaque.....each 3.30  
Circular Type, 2 1/2 Inch Diameter, Including Raised Letters or Numbers.....each 2.25

Special circular plaques furnished in any diameter. Furnished in brass if desired; add 5% for chromium finish.

When ordering specify: horizontal or vertical type of plaque; number of bulls-eyes to be on plaque; types of lens and color of bulls-eyes; type of border and finish of plaque; lettering or numbering on plaque; type, voltage and capacity of switches; also send rough sketch.



## Faraday Separable Connectors

For Flush or Surface Wall, Floor or Desk Mounting  
Types SCP, SCC, SCWF, SCD, SCDP and No. 922,  
Schedule D—Types SCA and SCB, Schedule T

Designed to provide means for perfect mechanical and electrical connections between the terminals of two cables where it is desired that they be easily disconnected for alterations, testing, etc. This applies especially to connection between rigid cable installed in conduit and flexible cables for annunciators, telephones, push-buttons, etc., either at the floor, wall, or at an office desk.

One half of the separable connector has contact points which are plugged into contact clips of the other half.

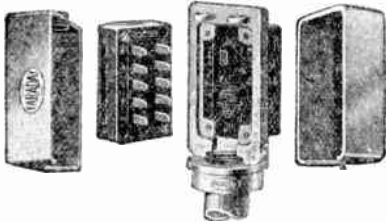
Made of bakelite having embedded therein either 4 or 10 terminal connectors; housed in solid bronze shell.

Standard package, 1.

### Type SCP Connectors Only—Without Bronze Shell

No. SCP-4, 4-Terminal Connector.....each \$8.00  
No. SCP-10, 10-Terminal Connector.....each 10.00

### Connectors with Housings Type SCC—For Floor Connection

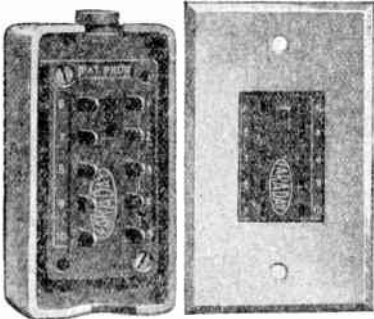


Parts Comprising Type SCC

Standard size nipples for Nos. SCC-4 and SCC-10 are 3/4 inch; over 10 number standard size nipple is 1 inch.

Cat. No. .... SCC-4 SCC-10 SCC-20 SCC-30 SCC-40  
No. of Terminals.. 4 10 20 30 40  
Each..... \$16.00 20.00 34.00 49.00 64.00

### Type SCWF—For Flush Wall Mounting



Cat. No. SCWF-10

Cat. Nos. SCWF-4 and SCWF-10 fit a standard single-gang switch box. Each additional 10 numbers take additional gang switch box.

Cat. No.	Each	No. Terminals
SCWF-4	\$12.00	4
SCWF-10	16.00	10
SCWF-20	30.00	20
SCWF-30	40.00	30
SCWF-40	50.00	40

### Type SCD—With Bushed Hole for Cable

Cat. No.	SCDC-4	SCDC-10	SCDC-20	SCDC-30	SCDC-40
No. Terminals..	4	10	20	30	40
Each....	\$12.00	16.00	26.00	36.00	46.00

### Type SCDP—With Tapped-Conduit Connection

Cat. No.	SCDP-4	SCDP-10	SCDP-20	SCDP-30	SCDP-40
No. Terminals..	4	10	20	30	40
Each....	\$12.00	16.00	26.00	36.00	46.00

### Type SCA—With Duplex Convenience Outlets

Cat. No.	SCA-2	SCA-4	SCA-8
No. of Outlets...	1	2	4
No. Connections..	2	4	8
Each.....	\$10.00	15.00	20.00

### Type SCB—With Desk Buzzer

Type SCB, with Desk Buzzer in SCC-10 Shell.....each \$20.00

## No. 922 Portable Type Connectors

Designed to meet conditions where it is desired that separable connector be portable. Housings are of cast aluminum.

Made in 10-terminal units (5 pairs) only.  
No. 922.....each \$40.00

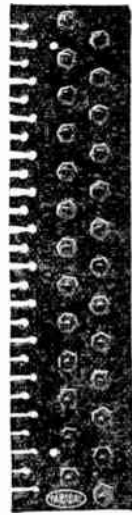


Cat. No. SCA-2

## Faraday Interconnection-Strips

Schedule T

Designed to facilitate cable-terminal-interconnection for annunciators, push buttons, telephones, etc., and to eliminate splices.



No. CS-26

These strips provide time and labor saving means for fanning out and separating the conductors of cables without the costly forming or lacing of old time methods and for attaching them to their respective terminal locknuts in a neat way. By the use of Faraday Interconnection-Strips testing of the wire circuits is greatly facilitated, at any time, and changes in and additions to the wiring may be easily effected.

Height, 7 1/2 inches; depth, 2 3/8 inches. Metal channel space, 1 1/8 inches.

Standard package, 1.

Cat. No.	Each	Description	Width In.
CS-26	\$3.00	Strip Only with 26 Terminals (13 Pairs)...	1 1/8"
CSM-26	7.00	Same as Above, with Metal-Channel Mounting Form and Numbered Forming Strip.....	2 3/8"
CSM-52	12.00	Same as No. CSM-26, but has Strip for 52 Terminals (26 Pairs)...	4 1/8"

## No. CSC-1 Faraday Interconnection-Cabinets

Flush and Surface Types

Schedule T

Cabinets have installed therein a panel upon which is mounted one or more Faraday Interconnection-Strips and the necessary number of 5-point fused battery strips. The black enameled steel cabinet is provided with door and spring lock. May be furnished, at extra cost, with gutters similar to those of lighting panel boxes so that cables may be concealed.

Standard package, 1.

No. CSC-1 Surface Cabinet with One 52-Terminal (26 Pairs) Interconnection-Strip and One 5-Wire Fused Battery Strip.....each \$36.00  
Add for Each Add. 52-Ter. Interconnection-Strip... 13.00  
Add for Each Add. 26-Ter. Interconnection-Strip... 8.00  
Add for Each Add. 5-Wire Fused Battery Strip.... 11.00  
Flush cabinets at same prices as surface cabinets.

## Faraday Fused Battery Strips

Schedule T

Designed to provide fuse-protection on low voltage circuits.

Height, 1 3/8 inches; width, 3 inches. Standard package, 1.

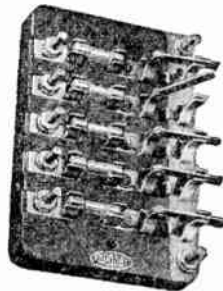
### With Knife Switches

Cat. No.	Each	No. Wires	Lgth. In.
FBS-3	\$8.00	3	3 1/4"
FBS-5	10.00	5	4 5/8"

### With Locknut Connections

Cat. No.	Each	No. Wires	Lgth. In.
FBL-3	\$7.00	3	3 1/4"
FBL-5	9.00	5	5 5/8"

No. FB-100, Renewal Glass-Tube Fuses.....each \$0.06



No. FBS-5

## Faraday Heavy Terminal Strips for Large Size Wires

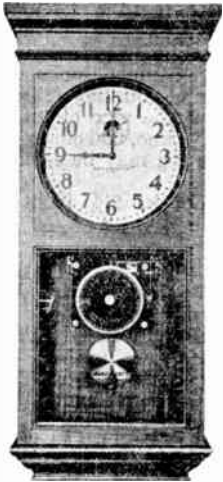
Schedule T

Base is solid 1/2-inch bakelite with extra heavy non-turning brass studs, numbered, as specified. Each wire can pass through a hole opposite its individual post, thus eliminating the use of forming strips. Terminals are 5/16 locknut pattern. Standard package, 1.

Cat. No.	915	916	917	918	919
No. Pairs of Terminals.....	5	10	15	20	25
Each.....	\$5.00	8.00	11.00	14.00	17.00

**Type P-160 Self-Winding Adjustable Program Clocks**

**24-Hour Schedule**



An automatic clock combined with a program device. Used as a master clock to control a system of clocks as well as to operate programmed signal system.

The only clock of this type that can be checked hourly with official time by connection with local Western Union Time Service.

Oak or birch case finished to match trim. Height, 41 1/4 inches; width, 18 1/2 inches; depth, 7 3/8 inches; 12-inch dial. Movement: 80 beat, spring-driven, pendulum-controlled. One hour's reserve power.

Program device sounds 4 second signals any 5 minute period of day. Time of sounding signals easily adjusted by rearranging pins on program disc. Can operate a number of different schedules concurrently. Can be equipped with contact for silencing bells. Operates any number of signals. One-bell installations can be furnished in compact units

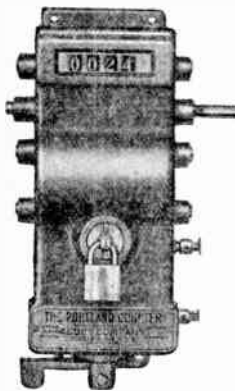
with bell mounted on side of clock case.

Operation: 110 volt a.c. through transformer rectifier, or dry cell batteries direct.

Large installations requiring a number of bells, need additional relay and transformer rectifier to furnish extra power for bells. These are furnished at extra cost.

Complete descriptive bulletins and prices gladly quoted on application.

**Portland Anysset Count Controllers**



A rugged heavy duty instrument designed to automatically maintain a uniform count of production, tallied in predetermined units.

Can be quickly and easily set to any number within the capacity of the instrument so that when desired quantity has been tallied a warning is given, either by bell or light, and a switch is thrown which may be utilized to stop the machine or to perform certain necessary operations at that point. On this particular type of register, resetting is unnecessary to repeat the cycle.

Adapted for speeds up to 500 counts per minute. The electric switch will carry 110 volts; for

higher capacities an additional starter switch is necessary. Brake-stop switches may be used for an instantaneous machine stop. Terminal posts are provided for alarm signals for either bell or light operating from dry cell current.

The controller being automatic in its control features, can be used to operate a battery of machines where a limited counting, timing or measuring operation is necessary.

Size of heavy dustproof case, 10 3/4 x 4 x 3 3/4 inches.

When ordering specify motor ratings. Starting and brake-stop switches are extra. Controller may be obtained for either rotary or reciprocating movements. A right-hand register has actuating shaft on right hand side when facing register as illustrated; left-hand controller has shaft on left. Special fittings to suit individual requirements are designed on request.

- 3-Figure Capacity.....each \$29.25
- 4-Figure Capacity.....each 37.25
- 5-Figure Capacity.....each 45.25

**Edwards Non-Code Fire Alarm Stations**

6 to 110 Volts

Underwriters Approved

**No. 224 Flush Break-Glass Station**



No. 224

With hinged front so test operation is same as actual alarm operation. Size, 3 7/16 x 4 3/8 inches, to fit standard single switch box. Test key, hammer and chain with each station. Open circuit type furnished if not specified. Finish, red enamel.

Weight, 1 pound.

Price, No. 224, Open Circuit.....each \$7.50

Price, No. 224C, Closed Circuit....each 7.50

**No. 225 Surface Break-Glass Station**

Same as above but with cast fitting for surface wiring. Fitting can also be mounted on standard switch box for use with concealed wiring but where it is desired to have stations protrude from wall to be visible from a distance.

Weight, 3 1/4 pounds.

Price, No. 225 Open Circuit.....each \$9.50

Price, No. 225C Closed Circuit.....each 9.50

**No. 77 Surface Break-Glass Stations**

Low Voltage Only



No test. Open circuit only.

Diameter, 3 3/4 inches.

Standard finish, polished brass rim, red center.

Weight, 7 ounces.

Price, No. 77.....each \$2.90

Price, Glass for Any Station...each .44

Price, Hammer and Chain for Any Station.....each .60

**No. 2077 Faraday Surface Type Fire Alarm Boxes**

Open-Circuit, Non-Code-Ringing Schedule D



No. 2077.....each \$2.90

Extra glasses, 44 cents; chain and hammer, 60 cents.

**No. 2024 Faraday Flush Type Fire Alarm Boxes**

Open or Closed-Circuit Schedule D



No. 2024.....each \$7.50

Extra glasses, 44 cents; chain and hammer, 60 cents.

A break-glass box, English vermilion finish; non-conduit installations.

Height, 4 3/8 inches; width, 3 inches; thickness, 3/4 inch.

For systems where it is not required that location of box from which signal originates be indicated by automatic code-ringing of gong and where failure of operative current or derangement of circuits or apparatus is not required to be automatically indicated.

A break-glass box, finished in glossy English vermilion.

Fits a standard outlet box for conduit. Height, 4 3/8 inches; width 3 3/8 inches.

For fire alarm systems where it is not required that location of box be indicated.

Can be furnished hinged hammer type in place of chained hammer type at same price.



## Industrial Fire Alarm Systems

Industrial fire alarm systems are particularly designed and suitable for factories, schools, colleges, public institutions, hotels, theatres, office buildings, department stores, warehouses, apartment houses, etc. in fact for every class of building where life and property should be protected from fire hazard, but with full consideration that such a fire alarm system must be dependable, yet simple and economical, both as to initial cost and maintenance.

Industrial fire alarm systems may be classified in 2 general types:

Electrically-Supervised Closed-Circuit Code and Non-Code Ringing for local drill alarm purpose and for connection to municipal fire alarm systems.

Non-Supervised Open-Circuit Code and Non-Code Ringing Systems.

### Closed-Circuit Systems

Under the closed-circuit systems the following may be furnished:

**PLAIN CODE SYSTEMS** in which the operation of a station lever causes all audible devices such as gongs, horns, etc. to sound a pre-determined code indicating the point of origin of the alarm.

**PRE-SIGNAL CODE SYSTEMS** in which the first operation of a station lever causes a code to be sounded on certain audible signals, known as pilots. The second operation of the station by means of a special key will cause the code to be sounded on all audible devices, both pilots and general.

**POSITIVE NON-INTERFERING CODE SYSTEM** features may be included in either the plain or pre-signal code systems mentioned above. These features prevent the jumbling of the code signal in the event of more than one station being operated at or about the same time.

**MASTER CODE SYSTEMS** in which one standard code is used this code indicating "Fire" but where the exact location of fire is not required.

**INSTITUTIONAL AUXILIARY SYSTEMS** in which the operation of a station lever by a person, equipped with the proper key, causes a code to be sounded on all audible signals within the building for drill purposes. In the event of an actual fire the operation of the station lever will cause an alarm to be sounded on all audible devices within the building, and at the same time will transmit a signal over the municipal fire alarm circuits indicating the building on fire.

**GENERAL ALARM NON-CODE SYSTEMS** on which the breaking of glass in the station operates all signals continuously until glass is replaced or circuit switch is opened.

### Open-Circuit Systems

Under the open-circuit systems the following may be furnished:

**PLAIN CODE SYSTEMS** in which the operation of a station lever causes all audible devices to sound a pre-determined code indicating point of origin of the alarm.

**MASTER CODE SYSTEMS** in which one standard code is used, this code indicating "Fire" but where the exact location of fire is not required.

**GENERAL ALARM NON-CODE SYSTEMS** in which the breaking of glass in station operates all audible signals continuously until glass is replaced or circuit switch is opened.

**ANNUNCIATOR ALARM SYSTEMS** in which the breaking of glass in station operates a corresponding drop on an annunciator indicating point of origin of alarm and also operating audible signals.

### Fire Alarm Boxes

Fire alarm boxes for industrial fire alarm systems are manufactured in 6 types, to meet all conditions of fire alarm service as follows:

Positive Non-Interfering Type Code-Ringing Closed-Circuit.

Plain Type Code-Ringing Closed-Circuit

Pre-Signal Type Code-Ringing Closed-Circuit.

Double-Code-Ringing Type Closed-Circuit.

Shunt-Type Non-Interfering Code-Ringing Closed-Circuit.

Open-Circuit Type Non-Code-Ringing.

Code ringing closed-circuit fire alarm boxes are subdivided into the following groups:

Enclosed Pull-Lever Surface and Semi-Flush.

Break-Glass Pull-Lever Surface and Semi-Flush.

Weatherproof Pull-Lever Surface.

Weatherproof Break-Glass Pull-Lever Surface.

### Sounding Devices

Sounding devices for fire alarm systems are designed with the utmost care to afford the maximum of protection through dependable operation. Dependability is the more important as fire alarm sounding devices may remain idle for long periods of time and yet must be so constructed that, when the need arises, they function instantly and satisfactorily.

Sounding devices are divided into 2 general classes, viz.:

Electrical Sounding Devices.

Mechanical Sounding Devices.

Electrical sounding devices are predominant for use in fire alarm systems and comprise:

Straight Electric Signal Gongs—Single Stroke and Vibrating.

Electro-Mechanical Signal Gongs.

Small Electric Sirens.

Motor-Driven Horns and

Vibrating Horns.

Mechanical sounding devices consist of compressed air horns.

### Fire Alarm Control Cabinets

For regular, pre-signal or dual-operated and double code fire alarm systems.

Fire alarm control cabinets are designed for the control and supervision of Fire Alarm Circuits. They consist of ebony asbestos or slate panels having mounted thereon necessary controller-relays. Trouble-relays, time-limit-cut-outs, meters, terminals, fuses, etc., all being enclosed in heavy pressed steel fireproof cabinets with Yale locked doors. Glass windows are provided in doors to permit ready reading of meters without opening the doors.

### Fire Alarm Apparatus

Fire alarm apparatus is steadily being improved in quality and design from year to year and is guaranteed to be electrically and mechanically perfect. Particular attention, however, is called to the necessity of proper installation and maintenance if every day in the year satisfactory service is to be obtained. Installation suggestions are furnished with each system.

### Engineering Advice

Our engineering department will promptly advise and cordially co-operate with anyone contemplating the installation or use of fire alarm apparatus.



## Hospital Signaling Systems and Equipment

Hospital signaling systems are an absolute necessity in every modern hospital.

### Nurses' Calling Systems

Nurses' calling systems may be of either one of the following 4 types:

**LOCKING-BUTTON TYPE** in which the locking push button, suspended from a flexible, rubber-covered cord contains all the mechanism to actuate the audible and visible signals and to reset these when call has been answered.

**LOCKING-MAGNETIC SWITCH TYPE** in which the contacts of the non-locking push button at the end of a flexible, rubber-covered cord actuate a magnetic switch, protected by a steel case in the wall, the switch operating both audible and visible signals; this locking-magnetic switch type may be used on 110-volt circuits, either a.c. or d.c., or on low-voltage circuits if preferred.

**PULL-CORD-SWITCH TYPE** consisting of special toggle-type switch installed in the wall and operated by a pull-cord. This system is used in hospitals where low initial cost is a deciding factor; the operation of the pull-cord switch requires more effort on the part of the patient, and is sometimes not favored because of this.

**BEDSIDE-SERVICE-PHONE TYPE** permitting direct communication between patient and nurse by means of loudspeaking telephone thus providing greater convenience, and quickest service to patient.

### Nurses' and Maids' Location Systems

These systems indicate the location of nurses and maids in private rooms by an illuminated plug inserted in a receptacle at the door when entering. Upon leaving the room this plug is removed.

### Ambulance and Entrance Signaling Systems

Consist chiefly of the necessary push button, located at doors leading out of the building and a lamp-annunciator having a lamp signal for each location with buzzer as audible signal. Useful for night service.

### Nurses' Home-Calling Systems

These systems provide communication between office and the nurses' and attendants' rooms at their homes. Two types of systems may be used, viz.:

#### Return-Call Annunciator Type

#### Intercommunicating Telephone Type

In the return-call annunciator systems, nurses' or attendants' rooms are provided with a combination buzzer and push button-station while at building office, a combination annunciator and push button board is installed. In this way the office may call the nurse and the nurse may answer the call by operating the corresponding push buttons. Room stations may be provided with indicating drops which in nurses' absence remains visible until reset, indicating that a call has been made.

- In the telephone call system the combination annunciator and push button board is provided with an operator's telephone and the room stations are replaced by telephones. The room telephone may be provided with indicating drop for the same purpose as stated above.

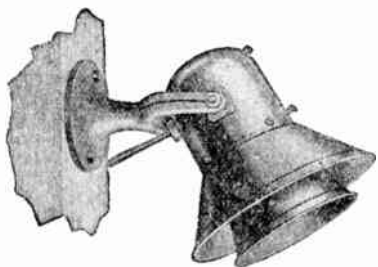
Hospital signaling equipment is approved by Underwriters' Laboratories as well as by the U. S. Government for Veterans' Hospitals, etc.

### Engineering Advice

Our engineering department—specialists in this particular field of signaling—will gladly co-operate with architects, engineers, hospital superintendents, etc., in charge of operation to lay out systems and make recommendations.

There is no charge for this service.

## Type A Federal Sirens



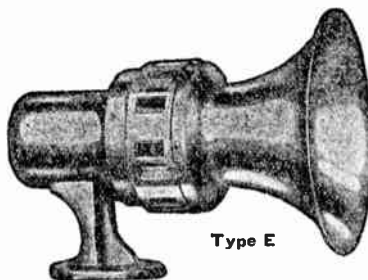
This outdoor Type A Siren takes the place of bells, gongs, whistles, etc., wherever electricity is available. There are no gears or vibrating parts. This siren with double horn gives increased efficiency, greater volume, and pleasing tone.

Length over all, 14 inches; diameter of

horn, 10 inches; diameter of body, 5 $\frac{3}{4}$  inches.  
 Weight, packed in carton, 17 pounds.  
 Price, Type A, with Universal Motor,  $\frac{1}{8}$  H.P., A.C. or D.C., 6 to 250 Volts .....each \$40.00  
 Price, Brass, Copper or Porcelain Enamel Finish, 6 to 250 Volts .....each 45.00

## Federal Apparatus Type Sirens

6 or 12 Volts D.C.



Type E

For every type of emergency vehicle, fire apparatus, etc.

With G-E motor.

All types finished in chromium plate except No. 8 which is finished in black Duco.

Type E is furnished with either standard, bar or dash bracket, switch and cable.

No. C-5, Coaster Siren .....each \$67.50  
 No. C-5, Coaster Siren with Electric Brake .....each 80.00  
 Type E, with Flat or Regular Projector .....each 40.00  
 No. 10, with Long or Short Projector .....each 30.00  
 No. 8, with Short Projector .....each 25.00

## Federal Vertical Electric Sirens



Greater tone volume per horsepower is obtained by the improved vertical design.

This design also assures full weather protection at all times.

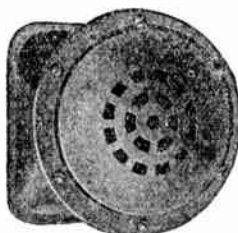
Furnished in sizes 2 to 7 $\frac{1}{2}$  horsepower according to the size of town.

Full details on vertical sirens for general alarm as well as fast code will be sent upon request.

## Edwards Horns and Howlers

Schedule T

No. 311



No. 311, for Indoor Use

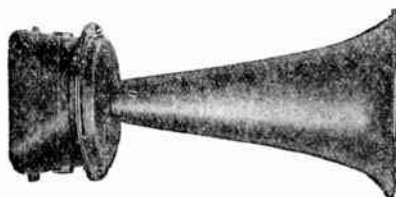
No. 311 is a powerful signal for all indoor uses, in schools, mills, etc. Ideal in noisy locations as dismissal signal or emergency and fire signal.

Its appearance gives it an advantage in schools and fine buildings.

Equipped with a back plate, which mounts directly on wall, 4-inch square box, standard switch box, any outlet box with single gang switch cover, or any single gang conduit or Wiremold Type fitting. Wires are connected to this plate, and the horn easily hung at any later time without inconvenient connections, screws, etc. Approximately 5 $\frac{1}{2}$  inches high, 5 $\frac{1}{2}$  inches wide and 3 inches deep.

No. 311 ..... 311  
 12-30 Volts A.C. ....each \$10.00  
 110 Volts A.C. ....each 11.24

Nos. 312 and 313



No. 312 with Single Projector

No. 312 has same mechanism as No. 311 but equipped with projector for weather protection.

Drilled top, bottom or both for  $\frac{1}{2}$ -inch conduit.

Approximately 6 inches high, 11 $\frac{3}{4}$  inches long. No. 311 is the same as No. 312 except it has a double projector.

No. 312 ..... 312 313  
 12-30 Volts A.C. ....each \$15.00 \$18.00  
 110 Volts A.C. ....each 15.00 18.00

## Approved Mercoid-Triplex Terminal Blocks



With two No. 8-32 steel inserts molded in bottom projecting  $\frac{3}{16}$  inch to provide means for fastening with nuts to panel or housing.

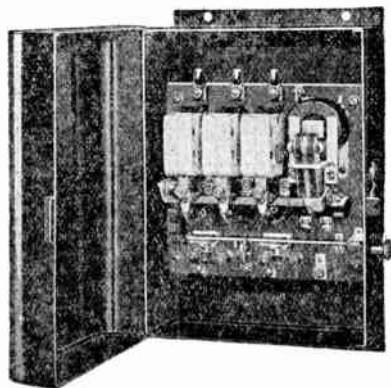
Length, 2 $\frac{1}{2}$  inches; height, 1 $\frac{1}{8}$  inches; depth, 1 inch.

Four copper bus connectors fastened to molded block and separated by  $\frac{1}{16}$ -inch high molded barriers—8 brass screws No. 8-32 furnished to bind wires to connectors.

Each ..... \$ .75

No.	Each	H.P.	Volts	Motor Current	Cycles	Phase
2	\$195.00	2	110-220	Univ. D.C.-A.C.	Any	.....
3	295.00	3	220-440	A.C.	60	2 or 3
3	315.00	3	220	A.C.	60	Single
5	360.00	5	220-440	A.C.	60	2 or 3
5	395.00	5	220	A.C.	60	Single
7	400.00	7 $\frac{1}{2}$	220-440	A.C.	60	2 or 3

## Federal Remote Control Switches

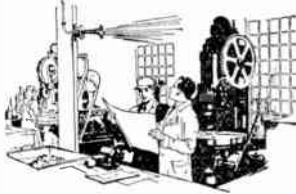


Permits operation of sirens from distant localities. One push button is included.

Remote Control for Any 2-H.P. Siren .....each \$20.00  
 Remote Control with Thermal Cut-Out Relays for Any 3-H.P. Siren .....each 30.00  
 Remote Control with Thermal Cut-Out Relays for 5 or 7 $\frac{1}{2}$ -H.P. Sirens .....each 40.00

**Benjamin Industrial Signals**

For Calls and Warnings in Factories, Yards, Warehouses, Etc.



In Use in a Machine Shop

In the routine of business, getting men when needed at the office or telephone, is frequently difficult.

A well-installed calling system with the right signals in the line, however, makes it possible to reach any executive at once and without disturbance or loss of time to employees.

Benjamin Industrial Howlers have a peculiar pitch and penetrating tone which makes them most effective and satisfactory signals.

They are ruggedly made and perfectly assembled so that daily performance may be expected for years; their maintenance is less than other forms of signals.

Benjamin Howlers are made for either indoor or outdoor use on direct current or alternating current circuits.

These howlers are satisfactory for use as factory superintendent's and foreman's calls; tell-tale or warning, for water tank levels, steam or gas pressures, sprinkler systems, etc.; burglar alarms; traffic warnings for street crossings; draw bridge signals; in mines, municipal fire stations; at railroad crossings; for signaling the opening and closing hours of labor.

**Direct Current Industrial Howlers For Multiple Circuits**

These howlers may be employed successfully on circuits as high as 250 volts.

When six or eight direct current howlers are to be used on one circuit, not less than 32 volts should be used.

Sounding mechanism, vibrator type, has silver make-and-break contact points. An especially constructed condenser across contact points prevents arcing.

Vibrator springs of the best grade spring material are mounted independently of the armature.

Self-locking adjusting screw, reached through projector, regulates tone volume and pitch of note.

**No. 8326-H Heavy Duty Weatherproof Howlers**



Has cast iron body, tapped for 1/2-inch pipe connection. The one-piece, drawn brass, bell type sound projector is rigidly attached to a heavy pressed steel cover.

A gasket between cover and body makes the signal weatherproof.

Finished in baked black enamel.

Cat. No.	Type of Projector	Connection	Voltage	Weight Pounds	Price Each
8326-H	Brass Bell	1/2-in. Conduit	*	5 3/4	\$15.00
8358-A	14-in. Conical	1/2-in. Conduit	*	6 1/2	16.25

\*Standard voltage is 110 volts, direct current, but any voltage from 6 to 250 direct current, inclusive, may be specified at an advance of 50 cents.

Specify voltage when ordering.

**Benjamin Industrial Signals**

**No. 8326-A Heavy Duty Non-Weatherproof Howlers**

Has pressed steel body with approved insulated side entrance for open wiring. The one-piece, drawn brass, bell type sound projector is rigidly attached to a heavy pressed steel cover which also carries the mounting bracket. Wire connections are easily accessible by loosening two screws and removing back. Finished in baked black enamel.

Cat. No.	Type of Projector	Connection	Voltage	Wt. Lbs.	Price Each
8326-A	Brass Bell	Open Wiring	*	2 1/4	\$12.50

\*Standard voltage is 110 volts d.c., but any voltage from 6 to 250 d.c., inclusive, may be specified at an advance of 50 cents. Specify voltage when ordering.

**Alternating Current Industrial Howlers For Series or Multiple Operation**

These howlers may be operated on either multiple or series circuits and will work well even in connection with vibrator or single stroke gongs, etc.

When used in series with other electrical devices special windings are furnished which allow passage of sufficient current to operate the other devices on same line. A 10 per cent variation in voltage will not affect the satisfactory working of the howler. Weatherproof types are recommended when signals are to be used outdoors. Sounding mechanism is of the vibrator type. The vibrations are the result of the alternating current cycles and no make-and-break contacts are required. No adjustments are needed.

**Heavy Duty Weatherproof Howlers**



No. 8346-H

Has a.c. mechanism; construction and finish same as for Cat. No. 8326-H.

Cat. No.	Type of Projector	Connection	Voltage	Wt. Lbs.	Price Each
8346-H	Brass Bell	1/2-In. Conduit	**	4 3/4	\$12.50
8357-A	14-In. Conical	1/2-In. Conduit	**	5 1/4	13.75

\*\*Standard winding is for 60 cycles, 110 volts a.c., but any voltage from 6 to 250 a.c., inclusive, may be specified at an advance of 50 cents. Specify voltage and frequency when ordering.

**Factory Non-Weatherproof Howlers**



No. 8152-L

Has a.c. mechanism; construction and finish same as for Cat. No. 8326-A. Cat. No. 8152-L is exactly like No. 8355-A except that it is equipped with a 9-inch conical sound projector which tends to confine the volume of tone in one direction.

Cat. No.	Type of Projector	Connection	Voltage	Wt. Lbs.	Price Each
8355-A	Brass Bell	Open Wiring	**	2 1/4	\$10.00
8152-L	9-In. Conical	Open Wiring	**	2	8.75

\*\*Standard winding is for 60 cycles, 110 volts a.c., but any voltage from 6 to 250 a.c., inclusive, may be specified at an advance of 50 cents. Specify voltage and frequency when ordering.

**No. 8152-S Mine Type Weatherproof Howlers**

Has pressed steel body and front cover with mounting bracket attached to front cover and a one-piece, drawn brass bell type sound projector. Electrical connections are made to insulated wire leads entering front cover. Made weatherproof by gasket and by sealing wire entrance. Finished in baked black enamel.

Cat. No.	Type of Projector	Connection	Voltage	Wt. Lbs.	Price Each
8152-S	Brass Bell	Open Wiring	**	2 1/4	\$12.50

\*\*Standard winding is for 60 cycles, 110 volts a.c., but any voltage from 6 to 250 a.c., inclusive, may be specified at an advance of 50 cents. Specify voltage and frequency when ordering.



## No. 8161 Benjamin Kode-Kalls

Operated mechanically by a precision-built clock work. For code calling systems of industrial plants, offices, etc. To operate, set dials at code numbers desired and push down on plunger; Kode-Kall then automatically repeats signal 3 times.

Can be used on any kind of signaling system—operated from batteries, lighting circuit or current of any voltage. Any type of signaling device can be used in circuit. Electrical contacts are rated at 100 watts at 110 volts.

Office green crackle lacquer finish, polished metal trim. Has rubber foot pads. Complete with cord and connector.



No. 8161, Wt. 9 Lbs. .... each \$40.00

## Benjamin Single Stroke Bells and Chimes

National Electrical Code Standard

For Series or Multiple Operation

Bells are for code calling in large offices, factories, schools, commercial establishments, etc. Ideal for coded fire alarms or other coded warning signal systems.

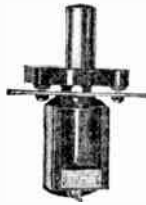
Mechanism is of the solenoid type with only one moving part—the plunger—which responds instantly when coil is energized.

Tone volume is adjustable. Soft, medium or loud tones may be obtained by turning set screw at bottom of casing, which regulates plunger stroke.



Bell

Installation is simplified by special mounting plate which provides a means of direct attachment to Gem Type Outlet Boxes or to any switch or outlet box cover having mounting holes spaced on 3/8-inch centers. In installing, mounting plate is first attached to outlet box or cover by 2 screws. Wires are then brought through large center hole in plate, and looped around binding screws. After wiring, device is attached by 2 screws threading into special mounting plate.



Chime

Plunger is of magnetic iron, with a bakelite striker and moves freely in a bakelite tube. Magnet coil is layer wound, impregnated and not affected by moisture. The chimes are identical in construction to the bells except that a metal chime bar with a wood resonating chamber is provided in place of a gong. All housings are of cast iron; housings, bells and resonating chamber of chimes are finished in black.

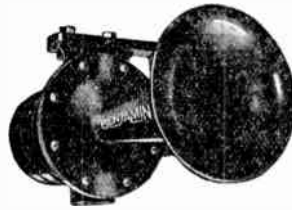
Cat. No.	Each	Description	Voltage	Wt. Lbs.
8110	\$9.70	3-In. Diam. Bell	110 Volts, 60 Cy. A.C.	3
8111	9.70	3-In. Diam. Bell	110 Volts, D.C.	3
8115	15.75	6-In. Diam. Bell	110 Volts, 60 Cy. A.C.	4
8116	15.75	6-In. Diam. Bell	110 Volts, D.C.	4
8117	19.75	8-In. Diam. Bell	110 Volts, 60 Cy. A.C.	6
8118	19.75	8-In. Diam. Bell	110 Volts, D.C.	6
8120	18.00	Chime	110 Volts, 60 Cy. A.C.	5
8121	18.00	Chime	110 Volts, D.C.	5

Standard voltages are listed above.

Special voltages from 6 to 48 volts, a.c. or d.c. may be specified at a reduction of \$2.00 in list price. For voltages over 125 volts, a.c. or d.c., add \$2.00 to list price. Special voltages and frequencies must be specified when ordering.

## Benjamin Motor Driven Signals

For Multiple Circuits



A weatherproof signal of unusual tone and penetration. Used indoors or out where service requirements are exacting. For use in steel mills, railroad shops, foundries and all locations where noise is excessive.

Pitch of signal is correct for cutting through conflicting noise. Suited for coding as there is no lag or coasting of motor to blur the coded signal.

Signal has heavy cast body, weatherproof rubber gaskets, drop-forged, heat-treated alloy steel ratchet and diaphragm anvil, phosphor bronze armature bearings and automatic wick-feed lubrication. Motor is series wound for starting power and has correct r.p.m. to produce penetrating tone. A set screw at rear of housing controls volume and pitch.

Standard voltage: 110 volts, 60 cycles a.c. or 110 volts, d.c. Special voltages up to 250 volts d.c. and 240 volts a.c. and frequencies from 25 to 50 cycles available at advances over prices. Power consumption, 55 watts.

Finished in baked black enamel. Red enamel furnished at an advance of \$1.25.

The double projector type motor-driven signal is used where sound is to be projected in opposing directions from a central location.

Conduit connection, 1/2 inch.

Net weight, 14 3/4 pounds.

Cat. No.	Projector	Voltage	Price Each
8175	Single Cast	110 A.C.	\$35.00
8176	Single Cast	110 D.C.	35.00
8180	Double Bell	110 A.C.	38.75
8181	Double Bell	110 D.C.	38.75

## Weatherproof Double Projector Howlers



No. 8788

The Projector Howler offers an effective and economical means of projecting sound from a central point up and down a passageway or platform.

This howler has cast iron body, with 2 mounting lugs and is tapped at side for 1/2-inch pipe connection. Two drawn brass, bell type sound projectors are attached to pressed steel front cover.

The sounding mechanism for the Double Projector Howler is of the vibrator type, furnished for d.c. or a.c. circuits, and is standard Benjamin Industrial Howler construction. All joints in case are gasketed to make mechanism weatherproof. Finish is baked black enamel. Red enamel finish will be furnished at \$1.00 advance in list price.

Cat. No.	Connection Inches	Voltage	Wt., Lbs. Each	Price Each
8788	1/2 Conduit	†D.C.	8	\$18.75
8790	1/2 Conduit	*A.C.	7	16.25

\*110 volts, 60 cycles is standard on Benjamin a.c. horns. However, any voltage from 6 to 250, and any frequency from 25 to 60 cycles, may be specified at an advance of 50 cents list. Voltages and frequencies must be specified when ordering.

†110 volts is standard for all Benjamin d.c. horns. However, any voltage from 6 to 250 may be specified at an advance of 50 cents list. Specify voltage when ordering.

**Benjamin Weatherproof Fire Alarm Howlers**



No. 8360

Specially built for use on fire alarm systems operating under stringent regulations. The Industrial Commission of the State Department of Labor, New York City, has approved them for use with standard fire alarm boards.

In series, without condenser, eight 14-volt or fourteen 8-volt howlers may be used, but where fourteen 14-volt howlers are used a condenser must be supplied on the panel board. The 110-volt howlers may be used for open circuit work where a time limit fuse or switch is inserted in the circuit. The use of 8-volt and 14-volt signals on one circuit is permitted. D.C. howlers are for use on multiple circuits only. The sounding mechanism for Benjamin Fire Alarm Howlers is of the vibrator type. These signals have cast iron body tapped for 1/2-inch pipe connection. A one-piece, drawn brass, bell type sound projector is rigidly attached to a pressed steel front cover. Signal is made weatherproof by gasket. Finished in red enamel.

Cat. No.	Type of Projector	Connection	Std. Voltage	Wt. Lbs.	Price Each
8360	Brass Bell	1/2-In. Conduit	*110 D.C.	5 3/4	\$16.00
8864	Brass Bell	1/2-In. Conduit	8 A.C.	4 3/4	13.50
8865	Brass Bell	1/2-In. Conduit	14 A.C.	4 3/4	13.50
8866	Brass Bell	1/2-In. Conduit	*110 A.C.	4 3/4	13.50

\*Standard voltage is 110 volts, D.C. or A.C., but any voltage from 6 to 250 inclusive, D.C. or A.C., may be specified at an advance of 50 cents. Specify voltage when ordering.

**Benjamin A.C. Industrial Buzzers**

The sounding mechanism of these buzzers is of the vibrator type. The vibrations are the result of the alternating current cycles and no make-and-break contacts are used. These buzzers will operate indefinitely without adjustment or attention, under all commercial conditions on either multiple or series circuits. Mine buzzer No. 8299-M may be used outdoors as well as indoors.



No. 8299-M

**Heavy Duty Mine Buzzers**

Open wiring type No. 8299-A has heavy stamped steel enameled case and 8-inch wire leads sealed in for outside connection.

Conduit type No. 8299-M has cast brass cover and is tapped for 1/2-inch pipe connection.

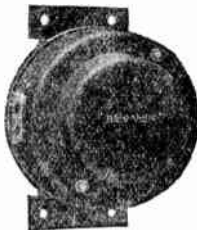
Finish, baked black enamel.

Cat. No.	Type Body	Connection	Std. Voltage	Wt. Lbs.	Price Each
8299-A	Stamped	Open Wiring	†110 A.C.	1 3/4	\$7.50
8299-M	Cast	1/2-In. Conduit	†110 A.C.	1 3/4	11.25

**No. 8297-A Office and Factory Buzzers**

One-piece pressed steel front cover has side opening with approved insulated wire entrance for open wiring.

Back plate is pressed steel, with mounting brackets top and bottom. This is an effective and reliable signal for offices, stock rooms, shipping rooms, etc., where a weatherproof signal is not necessary. Finished in black enamel.



Cat. No.	Type Body	Connection	Std. Voltage	Wt. Lbs.	Price Each
8297-A	Stamped	Open Wiring	†110 A.C.	1 3/4	\$5.75

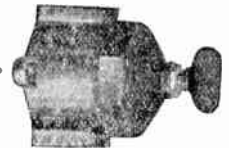
†May be wound for voltages as high as 250 volts a.c. when specified, at no advance in price.

**Benjamin Heavy Duty High Voltage Push Buttons**

Rating: 5 Amperes, 125 Volts



No. 8493



No. 8734

For use with industrial signals. Quick, positive make-and-break mechanism is mounted on base of high heat molded insulating material.

Brass casing with mounting lugs. Casing will be tapped for 1/2 or 3/4-inch pipe, 1 or 2-way, if specified, without extra charge.

Finished in dead black.

**Non-Locking—Single Button**

Cat. No.	Description	Weight Pounds	Price Each
8493	Open Circuit Type	1 1/8	\$3.60
8874	Closed Circuit Type	1 1/8	3.60

**Non-Locking—2-Gang Button**

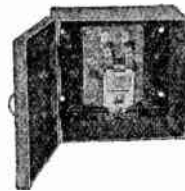
Cat. No.	Description	Weight Pounds	Price Each
8495	Open Circuit Both Buttons	1 3/8	\$5.00
8884	Open Circuit One Button, Closed Circuit One Button	1 3/8	5.00

**Locking Type—Watertight**

Cat. No.	Description	Weight Pounds	Price Each
8733	Closed Circuit Type	1 1/8	\$4.00
8734	Open Circuit Type	1 1/8	4.00

When ordering, specify size and number of outlets required.

**Benjamin Master Relays for Signal Systems**



For use with Benjamin Kode-Kall in operating the more extensive type of signaling installations where connected load is in excess of the 100-watt rating of the Kode-Kall, or where it is not desired to have the Kode-Kall wired into the high voltage signal circuit.

Contacts of relay have a non-inductive rating of 110 volts of 30 amperes

a.c. and 6 amperes d.c.; at 200 volts, 20 amperes a.c. and 3 amperes d.c.

Coil is rated at approximately 7 watts and operates at plus or minus 15% of rated voltages.

Relay is available in following voltages: 110 volts a.c. 60 cycles; 18 volts a.c. 60 cycles. However, the 110-volt a.c. relay operates at 15 to 30 volts d.c. and the 18-volt a.c. relay operates at from 4 to 6 volts d.c.

Relay is front connected and is mounted on a base of high insulating molded composition. Relay must be mounted in a vertical position.

Box supplied with No. 8336 is 6x6x4 inches in size and has 1/2-inch knockouts; finished in black japan.

No. 8335, Complete less Box, Wt. 3 1/2 Lbs. . . . . each \$12.00  
No. 8336, With Steel Knock-Out Box, Wt. 5 Lbs. . . . . each 15.50

**Telecode Relays**

This is a very sensitive, efficient and quick-acting circuit-closing unit standard with open-circuit contacts.

It can be had with back connections for panel mounting, with weatherproof conduit-fitting mounting or with 6x6-inch pressed steel box with knockouts.



No. 8314

No. 8313, with Panel Mounting . . . . . each \$12.00  
No. 8314, with 1/2-Inch Conduit Mounting . . . . . each 14.50  
No. 8315, with 6x6-Inch Steel Box . . . . . each 12.00

## Klaxon Industrial Horns

Electric motor-driven devices for operation on higher voltages. Effective in sounding time signals, fire or special hazard alarms or as warnings on derricks, etc.

For operation on 5 to 250 volts d.c. and on 10 to 460 volts a.c. Weatherproof housings are fitted with brackets for wall mounting and are tapped for conduit.

Types WS, W and WL with fire red lacquer finish; also available with Navy standard finish (baked black enamel over solid brass and copper plate) at \$3.00 extra.

In ordering give type desired, voltage of current supply and if a.c. or d.c.; advise cycle frequency if a.c.



### Type WS

Has a short projector, producing a harsh, piercing note which scatters in all directions. Suited for indoor use under severe noise conditions.

Length, 7½ inches; height, 11¼ inches. Shipping weight, 24 pounds.

Type WS.....each \$30.00



### Type W

With a ram's horn projector which directs its deep tone downward. Ideal for overhead or outdoor use.

Length, 12¼ inches; height, 11¾ inches. Shipping weight, 29 pounds.

Type W.....each \$30.00



### Type WL

With a long projector. Deep penetrating note of great power recommends this horn where long distances are to be covered or where note is to be directed toward a given point.

Length, 14¼ inches; height, 13 inches. Shipping weight, 29 pounds.

Type WL.....each \$30.00

### Type 1278-A

For use only on 110-volt 60-cycle current.

### Type 1281-A

For use only on 110 d. c. current.

Nos. 1278-A and 1281-A are small vibrator type horns for inside or protected outdoor use. Length, 5½ in.; height, 6½ in. including mounting bracket. Ship. weight, 5 pounds.

Red Lacquer Finish.....each \$5.00



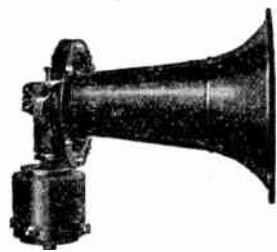
## Klaxon 20 Horns for Marine Use

A detachable swivel mounting bracket and slip terminals make horn easily removable. Has weather-resisting Navy standard finish (baked black enamel over solid brass and copper plate).

Length, 11¾ inches; height without deck bracket, 10½ inches. Shipping weight, 15 pounds.

Type 530, 6 Volts. each \$28.00

Type 542, 6 Volts, with Attached Side Mounting Bracket.....each 25.00



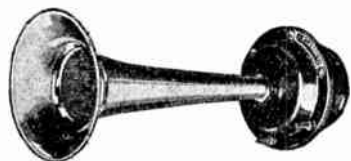
## Klaxon 22 Horns for Marine Use

A high-frequency automotive type horn. Projector, screen and back shell are polished solid brass, collar is rustproofed; black enamel finish.

Length, 14¾ inches. Weight, 6¾ pounds.

Type 1141-A, 6 Volts.....each \$15.00

Type 1142-A, 12 Volts.....each 15.00



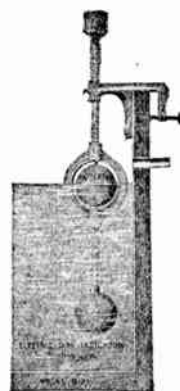
## Patterson Electric Tank Indicators

For Operation on Low-Voltage Transformer or Battery Circuits

Schedule T



No. A-20



No. B-21

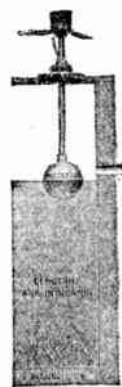
Indicator gives a positive electrical alarm either in connection with a signal-gong or an annunciator, showing when contents of tank have reached a maximum or minimum level, or both.

Has self-cleaning contacts, brass-bushed bearings for vertical movements of rods in pipe. Will not fail when exposed to severe weather conditions; not affected by steam or vapor. All contacts are housed.

Standard package, 1.



No. D-23



No. E-24

Description	For Closed Tank		For Open Tank	
	Cat. No.	Each	Cat. No.	Each
*High and Low Water.....	A-20	\$30.00	B-21	\$30.00
Low Water (with 21" I.P. Stem)	C-22	18.00	D-23	18.00
High Water (with 20" I.P. Stem)	E-24	18.00	F-25	18.00
Add for Conduit-Connection Pattern for Pipe or Armored Conductor.....				each \$6.00

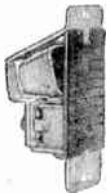
\*Furnished regularly allowing 12 inches between upper and lower balls.

If greater distance between base of flange and ball is required, extra stem will be furnished at the following prices:

	For A-20 and B-21	For C-22, D-23 and E-24 and F-25
Extra Stem up to 8 Feet.....per foot	\$1.44	\$1.00
Extra Stem up to 9 to 16 Feet...per foot	2.40	1.80
Extra Stem up to 17 to 20 Feet...per foot	3.00	2.40



**Edwards Flushcall Signaling Devices**



No. 660  
No. 760  
No. 1060

Flushcall signaling devices fit standard single gang boxes and take standard toggle switch plates. Can be ganged together with 110-volt receptacles, etc., in standard gang box and finished with standard plate.

For a.c. only. No adjustments needed. The uncertainty as to proper resistance, voltage, etc., for various uses has been eliminated.

**For Operation on 8 to 12 Volts, A.C., 60 Cycles**

These devices are suitable for operation of not more than two in multiple on Edwards No. 666 Powacall or No. 86 transformer; three in multiple on No. 88, 50-watt transformer; and four on No. 90, 100-watt transformer. Except No. 663 Melocall which is suitable for single use only.



No. 663  
No. 763

Cat. No.	Each	Description	Std. Pkg.
660	\$1.02	Ringcall, Replacing Bell.....	20
661	.96	Buzacall, Replacing Buzzer....	20
662	1.44	Tucall, Replacing Combined Bell and Buzzer.....	20
663	1.20	Melocall, the Third Call.....	20
668	1.14	Varicall, Adjustable Buzzer, Can be Varied from Loud Low Tone to Soft High Tone	1

No. 666 has 110-volt, 60 cycles primary; 8-volt secondary standard. Special voltages, 220 volts primary or other than 60 cycles, add to list 20 per cent.

666	1.12	Powacall, Replacing Bell Ring-er.....	20
664	.25	Togepush, for Low Voltages A.C. or D.C.....	20

**For Multiple Operation or 24-Volt, A.C. Use**

Suitable for operation of 9 in. multiple on No. 88 50-watt transformer; 15 in multiple on No. 90 100-watt transformer; 36 in multiple on No. 94 250-watt transformer; 72 in multiple on No. 99 500-watt transformer.

760	\$1.32	Ringcall, Replacing bell.....	1
761	1.26	Buzacall, Replacing Buzzer....	1
762	1.92	Tucall, Replacing Combined Bell and Buzzer.....	1

No. 763 Melocall is suitable for operation of 3 in multiple on No. 88 50-watt transformer; 6 in multiple on No. 90 100-watt transformer; 14 in multiple on No. 94 250-watt transformer; and 28 in multiple on No. 99 500-watt transformer.

763	\$1.62	Melocall, the Third Call.....	1
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No. 768 is for operation of 12 in multiple on No. 88 50-watt transformer; 20 in multiple on No. 90 100-watt transformer; 48 in multiple on No. 94 250-watt transformer; and 96 on No. 99 500-watt transformer.

768	\$1.44	Varicall, Adjustable Buzzer, Can be Varied from Loud Low Tone to Soft High Tone.....	1
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**For Operation on 110-Volt, A.C.**

1060	\$6.00	Ringcall, Replacing Bell.....	1
1061	5.85	Buzacall, Replacing Buzzer....	1

Standard barrier boxes, allowing easy inexpensive combination of Flushcall and 110-volt devices, are made by all leading box manufacturers.

**Extension Signals to an Annunciator**

No. 696 Ringcall for ring extension with Edwards No. 88 50-watt (16-volt) transformer for system; and No. 668 Varicall for buzz extension with Edwards No. 666 Powacall for system. Two Varicall extensions in multiple on Edwards No. 88, 50-watt (8-volt) transformer.

No. 696, Ringcall.....	each \$1.32
No. 668, Varicall.....	each 1.14

**Edwards Nubels**

**No. 735 Nubel**

The No. 735 Nubel is a double magnet bell that operates perfectly on battery or transformer. It has phosphor bronze springs, silver contacts and new code binding posts. Grey enamel finish.

Standard package, 100; shipping weight, 45 pounds.

No. 735.....	each \$5.58
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**No. 736 Buzzer**

The No. 736 Buzzer is of the same construction as the No. 735 Nubel.

Standard package, 100; shipping weight, 32 pounds.

No. 736.....	each \$5.55
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**No. 737 Combrel**

The No. 737 Edwards Combrel is a double magnet bell and double magnet buzzer on one frame with the complete mechanism except the binding posts under a neat cover. For the apartment and flat. Has grey enamel finish that may be repainted. Gives excellent operation on battery or transformer.

Standard package, 50; shipping weight, 56 pounds.

No. 737.....	each \$1.13
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No. 735, Nubel

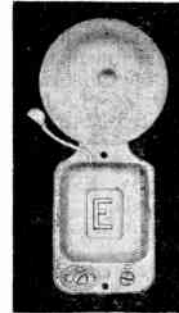
Standard package, 50; shipping weight, 56 pounds.

Standard package, 50; shipping weight, 56 pounds.

No. 737.....	each \$1.13
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**The E Line Bells and Buzzers**

Double magnet bells, buzzers and combinations of the non-adjustable type. Have phosphor bronze springs, silver contacts and new code binding post. Cadimun finish.



No. 740

*Schedule E*

Cat. No.	Per 100	Description	Std. Pkg.
740	\$57.50	2 1/2-Inch Bell.....	100
741	55.00	Buzzer.....	100
742	112.50	Combination.....	50
743	67.50	3-Inch Bell.....	25
744	92.50	4-Inch Bell.....	25
745	135.00	Cowbell.....	*25
746	135.00	Sleighbell.....	*25

\*Can be assorted.

**Edwards Dixie and Cadet Bells**

*Schedule E*

Hammer rod, ball and armature are all 1 piece. Rod is swaged to prevent bending in operation. Hammer ball is under the gong to prevent disarrangement. The armature is pivoted at the nearest point to the cover where there is practically no side motion.

Class C bell is non-adjustable; resistance, 2 ohms only.

Class B bell is adjustable; resistance, 2 ohms only.

Finish, black enamel, nickel trimmings.



Dixie Bell



Dixie Buzzer

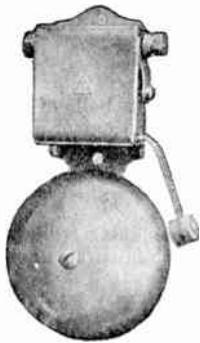
**Dixie, Class C Bell—2 Ohms**

Cat. No.	Size In.	Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Price Each
720	2 1/2	100	\$.92	*725	...	100	\$.89
710	2 1/2	100	\$1.04	*715	...	100	\$1.02
712	3	100	1.18	**	...	50	1.83
714	4	50	1.53	...	...	...	...

\*Buzzer. \*\*Fancy Gong.

## No. 13 Lungen Bells

Standard—8-10 Volts A.C., 6-8 Volts D.C.  
Schedule E



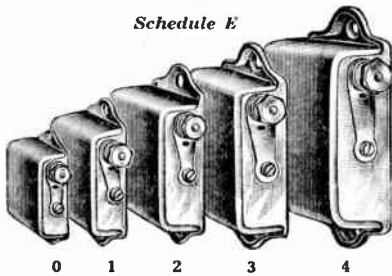
Made of brass heavily nicked; ribbed edges, spring cover. Cast base, screw and locknut adjustment. Price for special finish upon request.

Standard package made up of 10 assorted sizes.

Size In.	Each	Size In.	Each
1	\$2.40	3	\$2.40
1 3/4	2.20	4	3.20
2 1/4	2.30	...	...

## No. 15 Lungen Buzzer

Schedule E



Cover and base sheet steel; pivoted armature; ribbed edge spring cover. All nickel finish.

Standard package, 10, assorted.

Size No.	0	1	2	3	4
Dimen. in.	1 5/8 x 1 1/8	2 1/8 x 1 5/16	2 5/8 x 1 3/4	3 x 2	3 1/2 x 2 1/4
No. 15... each	\$1.90	1.80	1.90	2.00	2.70

## No. 16 Edwards Flush Buzzer

Battery or Transformer Operation

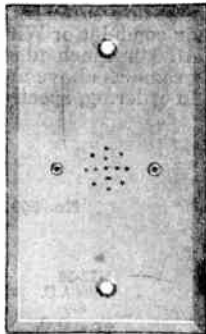
Schedule T

Used in offices, hospitals, residences, where the appearance of the usual surface type buzzer is objectionable. Buzzer is mounted on a sub-plate which fits any standard switch box. Standard switch plate with perforations to emit sound is furnished to cover buzzer and sub-plate.

Standard finish, brush brass; nickel at no extra charge. Special finishes, upon application.

Weight, metal plate, 3/4 pound; bakelite plate, 9 ounces.

No. 16, Metal Plate...	each	\$3.00
No. 16, Bakelite Plate...	each	3.30



## No. 750 Bronx Watchcase Buzzer

Schedule E

A brass case, heavily nickel plated; phosphor-bronze springs, silver-contacts.

Cat. No.	Each	Height Inches	Diam. Inches	Std. Pkg.
750	\$1.80	5/8	1 3/4	10



## No. 5006 Graybar Pull Cord Switches



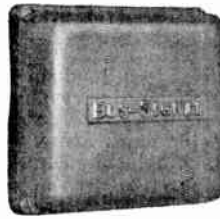
Generally used in parlor car coaches.

Operates bus signal buzzers; also used as a stop light switch.

Overall block dimensions, 1 3/8 x 2 3/16 x 1 3/2 inches deep.

Prices and specifications upon application.

## No. 5003 Graybar Bus Signal Buzzers



Graybar Bus Signal Buzzers are of the totally enclosed type. A steel cover mounted over the mechanism, houses the unit and protects it from dirt and the weather.

All buzzers are thoroughly insulated and tested at a high voltage breakdown. The magnets are wound with enameled wire, assuring protection from moisture and short circuited turns.

For battery operation, either 6 or 12 volts. In ordering, state voltage required. The resistance of the buzzers is made high to utilize a minimum amount of current when operating. For other voltages, prices upon application.

Overall dimensions, 3 3/16 x 3 3/16 x 1 5/8 inches

Resistance, 15 ohms; voltage, 12. Dry or storage battery.

Prices and specifications upon application.

## No. 5000 Graybar Combination Vibrating and Single Stroke Bells

This bell makes it possible to combine 2 signals in one bell. Adaptable for double deck buses, the vibrating action being used for passenger's signal while single stroke action is for conductor's signal.

Guard extends partially over the gong. Supplied with 4-inch diameter gongs; stainless steel covers finished in black.

Overall dimensions, 8 3/4 x 4 inches.

Resistance, 15 ohms; voltage, 6 or 12. Dry or storage battery.

Weight, 2 3/4 pounds.

Specify voltage when ordering.

Prices and specifications upon application.



## No. 5004 Graybar Door Step Light Switches

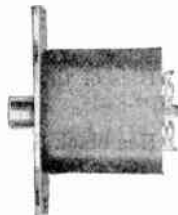
For operating step lights. Heavy gauge bronze face plate, nickel finish. Plunger head is of stainless steel. Electrical contacts are enclosed in bakelite base.

Can be used to make and break circuits carrying as high as 10 amperes.

Dimensions: 2 1/2 inches high; 1 inch wide; 1 1/16 inches deep.

Packed in individual cartons containing switch, mounting screws and bumper plate.

Prices and specifications upon application.



## No. 5005 Graybar Bus Signal Push Buttons

For bus service requirements.

Formed to permit mounting on narrow window posts or installing on moulding. The cover of highly polished nickel finish is fastened to the bakelite base by 2 binding screws.

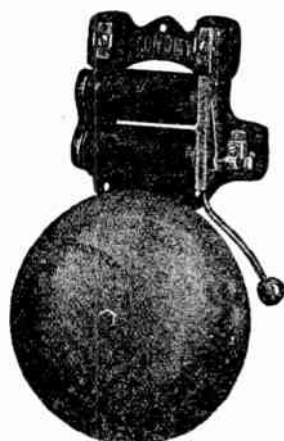
Mechanism is completely insulated. Contact springs are made of genuine phosphor bronze of the double-break, self-cleaning type, insuring positive action at all times.

Buttons are easily wired as terminal screws have large heads with upset ends to prevent their locking out when connections are looped. Connection permits looping of signalling circuit, eliminating splicing and soldering at each push button station. Overall dimensions, 1 1/2 x 1 inch.

Prices and specifications upon application.







## No. 71 Edwards Economy Skeleton Bells

Schedule E

A fully insulated, loud ringing bell for all ordinary purposes.

The outstanding feature of the Economy is the intensified stroke armature.

Size Inches	Each	Std. Pkg. Assorted
3	\$5.55	5
4	6.60	5
6	8.85	5
8	14.35	5
10	21.30	5
12	27.50	5

## No. 17 Edwards Economy Bells

Standard Voltage—8-10 Volts A.C., 6-8 Volts D.C.

Schedule E



This is a covered, double magnet bell for low cost burglar alarm and similar work.

It is the adjustable type.

Bakelite insulation.

Finish, black.

Standard package, 5. Can be furnished assorted.

Size.....inches	3	4	6	8	10
No. 17.....each	\$5.55	6.60	7.80	11.40	15.00

## No. 55 Edwards Bells

Standard Voltage—8-10 Volts A.C., 6-8 Volts D.C.

Schedule E



This single magnet bell is especially designed for low cost burglar alarm and similar work.

It is of the adjustable, non-weatherproof type.

Has black finish with nickel gong.

Standard package, 5. Can be furnished assorted.

Size.....inches	4	6	8
No. 55.....each	\$3.15	3.97	6.67

## No. 156 Edwards Monitor Bells

Battery or Transformer Operation

Schedule T



An entirely self-contained bell that presents a neat appearance.

The hammer rod moves on a straight line and strikes the inside of the gong. This allows the bell to be made weather, bug and dust proof.

The springs are phosphor bronze, the contacts pure

hard-drawn silver. Has a 3-inch gong, nickel, base is finished in black.

Weight, 1¼ pounds.

Price, No. 156, Vibrating.....each \$1.80  
 Price, No. 156, Single Stroke D.C. Only.....each 2.30

## Edwards Vibrating or Single Stroke Adaptabels

For All A.C. and D.C. Voltages

Schedule T



This is a compact bell of the Underdome, Turtle or Monitor Type.

Fits a variety of standard conduit boxes and similar fittings, concealed or surface. Mounting is also simple for non-conduit work.

The gong does not have to be removed for installation—first, mount plate on wall or on switch box, outlet box or any standard type fitting desired; second, connect wires to large convenient binding post; third, hang adaptabel on two strong lugs, then push it home. It snaps solidly into place. A few turns of the screw under the bell locks it in place.

As the electrical connections are made to the mounting plate only, the whole electrical installation can be made, tested and completed before painting and finishing.

The maintenance problem in hard service work, like traffic signals, railroads, etc., is simplified with a few spare adaptabels. Adaptabel is easily detached and a new one attached instead of repairing on the job or the complete electrical installation of a new bell.

The movement is completely enclosed in a cast aluminum housing. Protected against dirt, bugs, etc. When weather-proof is specified, it is protected with gaskets.

The a.c. vibrating mechanism is the polarized, no contact type. There are no coil springs or pivots. No adjustment necessary. Gongs are hot pressed steel, Parkerized to prevent rust.

The d.c. vibrating mechanism is also of the straight line plunger type. Gongs are of hot pressed steel, Parkerized to prevent rust.

All 6 to 12-inch adaptabels mount directly on wall, 4-inch square box, standard switch box or any outlet box with single gang conduit or Wiremold type fitting.

All 3 or 4-inch adaptabels have separable plate for mounting same as above and will also fit ¾-inch octagon boxes.

In ordering, specify voltage desired.

### Vibrating Type

No. 560 for A.C.—No. 561 for D.C.

Size Inches	12-30 Volts A.C. 6-9 Volts D.C. Each	110-130 Volts A.C. or D.C. Each	220-240 Volts A.C. or D.C. Each	Special Voltages or Resistance up to 48 Volts A.C. or D.C. Each
	3	\$9.30	\$11.30	\$13.80
4	10.30	12.50	15.00	11.60
6	15.00	17.20	19.70	16.80
8	18.00	21.00	23.50	19.80
10	27.50	29.70	32.20	29.80
12	33.00	35.50	38.00	35.30

### Single Stroke Type

No. 562 for A.C.—No. 563 for D.C.

Size Inches	10-48 Volts A.C. or D.C. Each	110-130 Volts A.C. or D.C. Each	220-240 Volts A.C. or D.C. Each
	4	\$10.30	\$10.30
6	13.80	13.80	14.40
8	15.80	15.80	16.40
10	19.30	19.30	19.90
12	22.50	22.50	23.10



## No. 551 Edwards Plunger Type Bells

For All A.C. Voltages

Schedule T

A no-contact, polarized bell. For traffic signals, mines, warehouses and all standard signaling purposes.

Binding posts and all parts are completely covered; as hammer rod operates in a straight line, the hole in the cover is but little larger than the rod itself, which makes the bell bug and dust proof. Rustproof gongs are standard equipment, and with the addition of a rubber gasket the bell is weatherproof.

There are no contacts to wear, stick or replace. No pivots, coil springs or points of friction.

No adjustment. The only wearing part is where the hammer strikes the gong and the mechanism automatically adjusts itself to this.

No. 551, Single

Approved by the National Board of Fire Underwriters.

### No. 551 Single Gong Type



Size Inches	12-30 Volts Each	110-130 Volts Each	220-240 Volts Each	Weight Pounds
3	\$9.30	\$11.30	\$13.80	2½
4	10.30	12.50	15.00	3
6	15.00	17.20	19.70	5
8	18.00	21.00	23.50	12
10	27.50	29.70	32.20	14
12	33.00	35.50	38.00	16½
Buzzer	7.70	10.70	13.20	1½

### No. 552 Double Gong Type



Size Inches	12-30 Volts Each	110-130 Volts Each	220-240 Volts Each	Weight Pounds
4	\$11.30	\$13.40	\$15.90	4
6	21.90	24.10	26.60	8
8	25.60	28.00	30.50	16
10	30.00	32.80	35.30	19

For weatherproof type, add \$1.25.

Conduit attachment, add \$1.25 for separable conduit fitting for flush or surface conduit. Furnished at no extra charge on 110-220-volt bells.

### No. 551 F.G. Full Grid Type

Schedule T

Add to Standard bell:

Size Inches	Add Each	Weight Pounds
6	\$7.50	2¼
8	8.00	3¼
10	9.00	5½
12	10.50	7

No. 551 F.G.

Part Grid, No. 551 P. G., same price.

### No. 551Y Yard Type with Protective Hood

Add to Standard Bell for No. 551Y.....each \$25.00  
Special voltages up to 30 volts at no charge.

## No. 510 Edwards Clapper Type Bells

For Transformer and 110-Volt A.C. Lighting Circuits

Schedule T



No. 510 Standard



Conduit Type

These bells are designed with laminated magnets and specially constructed armature for efficient operation on transformer where a bell with contacts is desired. The contacts are silver, having a large area and excellent carrying capacity. They are easily replaceable.

Conduit fittings are made so that they may be installed with conduit and bell placed thereon after the wires are pulled through. Fittings are drilled top and bottom for ½-inch conduit unless ¾-inch is specified. A pipe plug is furnished for use when bell is on end of line.

### No. 510 Standard



Buzzer

Size Inches	Transformer Volts A.C. Each	110 Volts A.C. Each	Weight Pounds
3	\$9.30	\$11.30	2
4	10.30	12.50	2¼
6	15.00	17.20	8½
8	18.00	21.00	11½
10	27.50	29.70	12½
12	33.00	35.50	16
Buzzer	7.70	10.70	1¾

Weatherproof type, add \$1.25 list.

Conduit attachment, for use on all type bells, add \$1.25 list. Furnished at no charge on 110-volt bells.

### No. 510 F.G. Full Grip Type

Schedule T

Add to Standard bell:



No. 510 F.G.

Size Inches	Add Each	Weight Pounds
3	.....	.....
4	\$6.50	1
6	7.50	2¼
8	8.00	3
10	9.00	5½
12	10.50	7¾

### No. 510Y Yard Type With Protective Hood

Schedule T

Add to Standard Bell for No. 510Y

.....each \$25.00



No. 510 Y

**Edwards Plunger Type Recti Bells**

For Battery and D.C. Lighting Voltages

Brass hammer rod is so suspended at the armature that easy operation with no side motion is assured. The striking end of the rod is suspended by the case itself.

Springs of phosphor bronze act as demagnetizer between magnet head and armature when stroke has been made.

Contacts are silver.

Iron case, japanned; with felt gasket, oil treated.

Ball metal gong, finished in black to match the case.

**No. 100, Standard Type**



No. 100

Size In.	6-9 Volts Each	110 Volts Each	220 Volts Each	Wt. Lbs.
3	\$8.80	\$11.30	.....	3
4	10.80	13.30	\$15.80	4
6	15.00	18.12	20.60	6
8	18.80	21.90	24.40	9
10	26.30	29.40	31.90	15
12	31.30	32.50	35.00	18
14	61.60	82.50	103.50	23
16	129.30	159.20	189.10	27
18	146.95	176.90	206.80	31

No. 1001, Conduit Attachment for Use on All Type Bells, Add ..... \$10.00

No. 100Y, Yard Type, with Protective Hood, Add to Standard Bell ..... 25.00

**No. 100 F.G. Full Grid Type**



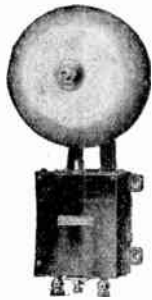
No. 100 F.G.

*Schedule T*

Add to Standard bell:

Size In.	Each	Wt. Lbs.	Size In.	Add Each	Wt. Lbs.
4	\$6.50	1	12	\$10.50	7 <sup>3</sup> / <sub>4</sub>
6	7.50	2 <sup>1</sup> / <sub>4</sub>	14	34.50	12
8	8.00	3	16	45.00	16
10	9.00	5 <sup>1</sup> / <sub>2</sub>	18	56.00	20

**No. 217 High Voltage Type**



No. 217

*Schedule T*

High voltage Recti bell for 300-600 volts d.c.

Has binding posts and contact mechanism on slate. Long, quick break. Operates only with gong up.

Size In.	Each	Wt. Lbs.	Size In.	Each	Wt. Lbs.
6	\$68.30	6	14	\$130.85	23
8	73.25	14	16	193.40	27
10	91.35	15	18	227.50	31
12	107.00	18	.....	.....	.....

**Nos. 220A and 220B Recti Buzzers**



Buzzer

No. 220A has same movement as 3-inch bell; No. 220B, same movement as 6-inch.

No.	For Battery Each	110 Volts Each	220 Volts Each	Wt. Lbs.
220A	\$7.90	\$10.45	.....	2
220B	11.90	17.95	\$24.10	4

**No. 222 Edwards D.C. Clapper Type Bells**

*Schedule T*

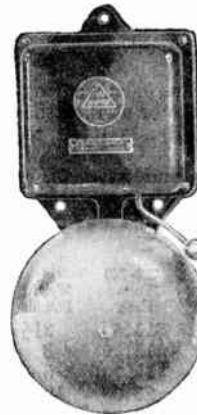
For use in schools, etc.

Two wire entrances are provided; one at the top for surface wiring and one at the back for concealing wiring. Both are sealed with wax which may be knocked out.

Conduit fittings are made so that they may be installed with conduit and bell placed thereon after wires are pulled through. Fittings are drilled top and bottom for 1/2-inch conduit unless 3/4-inch is specified. A pipe plug is furnished for use when bell is on end of line.

**No. 222 Standard 6-9 Volts D.C.**

Size Inches	Each	Weight Pounds
3	\$8.80	2
4	10.80	2 <sup>1</sup> / <sub>4</sub>
6	15.00	8 <sup>1</sup> / <sub>2</sub>
8	18.80	11 <sup>1</sup> / <sub>2</sub>
10	26.30	12 <sup>1</sup> / <sub>2</sub>
12	31.30	16
Buzzer	7.70	1 <sup>3</sup> / <sub>4</sub>



No. 222 Standard

For weatherproof gasket, add \$1.25. Conduit attachment, add \$1.25 for separable conduit fitting for flush or surface conduit.

**No. 222 F.G. Full Grid Type**

**6-9 Volts D. C.**

Size Inches	Each	Weight Pounds
6	\$22.50	3 <sup>1</sup> / <sub>4</sub>
8	26.80	1
10	35.30	17 <sup>1</sup> / <sub>8</sub>
12	41.80	2 <sup>1</sup> / <sub>2</sub>

Part grid type furnished at same prices.

**No. 222Y Yard Type With Protective Hood**

Add to Standard Bell for No. 222Y ..... each \$25.00

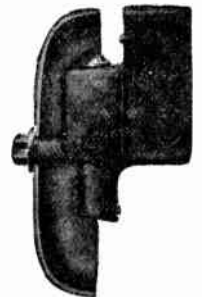
**Edwards Single Stroke Bells**

For Fire Alarm Systems

*Schedule T*



No. 23F (D.C.)  
No. 24F (A.C.)



Showing Movement and Compact Construction

Solenoid type construction, giving a loud, clear ring. Operation is quick and precise, ideal for all coded signaling purposes. The construction eliminates springs and pivots. Entire mechanism is under gong. For surface conduit work a separable box is furnished with knockouts on all sides. Box can be mounted flush and an extension cover is furnished for mounting bell.

Operated either in series or multiple, but will be furnished for the latter unless specified. When conduit type is ordered, flush fitting is supplied unless otherwise specified.

No. 23F (d.c.); No. 24F (a.c.).

Size	4	6	8	10	12
Weight.....pounds	4	5	6	8	11
6-48 Volts.....each	\$18.00	\$24.00	\$27.00	\$32.00	\$36.00
110-125 Volts.....each	18.00	24.00	27.00	32.00	36.00

## Faraday Residence Call-Panels

The Modern Electric Bell  
For Surface Mounting  
Schedule A

An attractive installation harmonizing in color with the tone of the room.

Panel has hollow back-plates formed-up with molded edges, completely covering up the unsightly slack wires, the broken and uneven plaster and the grimy outline of the old style bells and buzzers.

Units are completely covered fully insulated and with adjustable contacts.

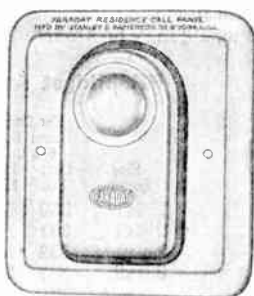
Standard finish: Panels, ivory; covers, jade green, blue or ivory, as specified.

Special color combinations such as blue, jade green or jet black panels with polished cadmium covers will be furnished on special order.

Panels will be furnished on special order with adapter-plates to mount on any standard outlet box, for new building work.

Standard package, 1.

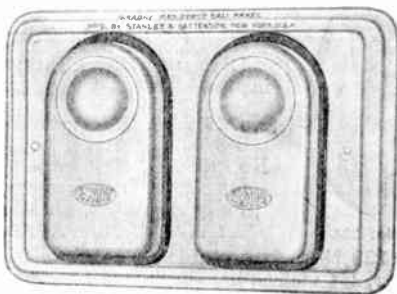
### 1-Unit (Small) Panels



Width, 6 1/4 inches; height, 7 inches.

Cat. No.	Sig-nals	Description of Signal Units on Panel	Each
800	1	1—2 1/2-Inch Buzzer	\$2.80
807	1	1—Buzzer	2.80
802	2	1—Combination Bell-Buzzer	3.20

### 2-Unit (Medium) Panels



Width, 9 1/2 inches; height, 6 1/2 inches.

820	2	1—2 1/2-Inch Bell; 1—Buzzer	\$4.00
*825	2	1—2 1/2-Inch Bell; 1—High-Pitch Buzzer	5.40
821	2	1—2 1/2-Inch Bell; 1—Cow Bell	5.40
822	3	1—Comb. Bell-Buzzer; 1—Buzzer and Musical Tap	6.20
823	3	1—Bell-Buzzer; 1—Cow Bell	5.80
*824	3	1—Comb. Bell-Buzzer; 1—High-Pitch Buzzer	5.90

### 3-Unit (Large) Panels

Width, 12 inches; height, 6 1/2 inches.

830	3	1—2 1/2" Bell; 1—Buzzer; 1—Musical Tap	\$6.90
831	3	1—2 1/2" Bell; 1—Buzzer; 1—Cow Bell	6.90
*832	3	1—2 1/2-Inch Bell; 1—Buzzer; 1—High-Pitch Buzzer	7.00
833	3	1—2 1/2-Inch Bell; 1—Cow Bell; 1—Musical Tap	8.30
834	4	1—2 1/2-Inch Bell; 1—Cow Bell; 1—Buzzer and Musical Tap	9.10
*835	4	1—2 1/2-Inch Bell; 1—High-Pitch Buzzer; 1—Buzzer and Musical Tap	9.20

\*Operate on 8-volt transformer only. All others operate on 8-volt transformer or battery.

## PR Eclipse Small Bells, Buzzers and Bell-Buzzers

Schedule E

All bells and buzzers shown will be furnished in pearl gray finish with polished nickel gongs at no additional charge if so specified. Unless specified, satin-cadmium will be supplied.

### Covered—With Fully-Enclosed Double-Magnet Mechanisms, Binding Posts and Gongs

Non-Adjustable

Cat. No.	Per 100	Description	Std. Pkg.
500	\$63.75	2 1/2-Inch Bell	100
501	55.00	Small Buzzer	100
507	61.25	Large Buzzer	100
502	112.50	Bell-Buzzer	50
512	250.00	Cow Bell	10
513	250.00	Sleigh Bell	10
<b>Adjustable</b>			
600	\$110.25	2 1/2-Inch Bell	50
601	102.00	Small Buzzer	24
607	108.25	Large Buzzer	24
602	159.00	Bell-Buzzer	10
612	300.00	Cow Bell	5
613	300.00	Sleigh Bell	5



Cat. Nos. 500 and 600

For Complete Colored Jade Green, Blue, Ivory or Jet Black Covered Bells, Buzzers and Bell-Buzzers, Add to Price of Satin-Cadmium (Standard Package, 25 of 1 Color)..... \$15.00

For Complete Polished-Cadmium Covered Bells, Buzzers and Bell-Buzzers, Add to Price of Satin-Cadmium (Standard Package, 25)..... 25.00

For Oak, Mahogany or Walnut Finish of Nos. 501 and 601 Small Buzzers, Add to Price of Satin-Cadmium (Standard Package, 10 of 1 Finish)..... 45.00

### Colored Covers

No. 500-C, Jade Green, Blue, Ivory or Jet Black Covers (Standard Package, 25 of 1 Color)..... per 100 \$15.00

No. 500-PC, Polished-Cadmium Covers (Standard Package, 25)..... per 100 25.00

### No. 525 Counter Display Easel

Counter display consists of:

Cat. No.	Each	Description	Finish
500	\$.63 3/4	Bell	Satin-Cadmium
500	.78 3/4	Bell	Jade Green
500	.78 3/4	Bell	Ivory
500	.78 3/4	Bell	Jet Black
507	.76 1/4	Buzzer	Blue
502	1.37 1/2	Comb. Bell-Buzzer	Polished-Cadmium
501	.55	Small Buzzer	Satin-Cadmium
No. 525, Complete..... each \$5.69			

### Exposed Pattern—With Exposed Gongs, Fully-Enclosed Double-Magnet Mechanisms and Binding Posts

Non-Adjustable

Cat. No.	Per 100	Description	Std. Pkg.
509	\$57.50	2 1/2-Inch Bell	100
503	67.50	3-Inch Bell	25
504	92.50	4-Inch Bell	25
505	135.00	Cow Bell	*25
506	135.00	Sleigh Bell	*25
501	55.00	Small Buzzer	100
<b>Adjustable</b>			
609	\$104.00	2 1/2-Inch Bell	50
603	118.00	3-Inch Bell	10
604	153.00	4-Inch Bell	5
605	183.00	Cow Bell	*10
606	183.00	Sleigh Bell	*10
601	102.00	Small Buzzer	24



Cat. Nos. 509 and 609

### Commercial Single-Magnet, Non-Adjustable With Exposed Gongs, Fully-Enclosed Mechanisms and Binding Posts

Standard package, 100.

No. 300, 2 1/2-Inch Bell..... per 100 \$45.00

No. 301, Small Buzzer..... per 100 42.50

\*May be assorted to obtain standard package price.



**PR Exposed Pattern Bells and Buzzers**

*Schedule E*

For 6-Volt Transformer or 6-8-Volt Battery Circuits

With non-adjustable side contacts. Standard resistance, 2 ohms. Satin-cadmium finish.



**Eclipse Double-Magnet Class C—Vibrating**

With Exposed Gongs and Binding Posts, Fully-Enclosed Mechanisms

Standard package, 50.  
No. 201, 2½-Inch Bell..... per 100 \$92.00  
No. 200, Buzzer..... per 100 89.00

Above bells and buzzers will be furnished in pearl grey finish with polished nickel gongs at no additional charge if so specified. Unless specified, satin-cadmium will be shipped.

**PR XXX Adjustable Exposed Pattern Double-Magnet Bells and Buzzers**

*Schedule E*

**Class B—With Exposed Gongs and Binding Posts, Fully-Enclosed Mechanisms**

For 6-Volt Transformer or 6-8-Volt Battery Circuits

With adjustable double-lock side contacts. Standard resistance, 2 ohms.

Finished in pearl gray with nickel gong.



Cat. No.	Per 100	Description	Std. Pkg.
211	\$104.00	2½-Inch Bell.....	50
212	118.00	3 -Inch Bell.....	10
213	153.00	4 -Inch Bell.....	5
215	183.00	Cow Bell.....	*10
218	183.00	Sleigh Bell.....	*10
210	102.00	Buzzer (Pearl Gray)	24

\*May be assorted to obtain standard package price.

**PR Marlo Exposed Pattern Double-Magnet Bells and Buzzers**

*Schedule E*

**Class A—Double-Lock-Adjustable—With Exposed Gongs, Outside and Inside Binding Posts and Fully-Enclosed Mechanisms**

For 6-V Transformer or 6-8-V Battery Circuits

With pivoted armatures, back-tension-adjustment and insulated mechanisms.

Standard package, 10; may be assorted.

*No. 221, 2½-Inch Bell.....	per 100	\$164.00
*No. 222, 3-Inch Bell.....	per 100	181.00
*No. 223, 4-Inch Bell.....	per 100	219.00
*No. 227, Cow Bell.....	per 100	250.00
*No. 228, Sleigh Bell.....	per 100	250.00
*No. 229, Dome Bell.....	per 100	250.00
No. 220, Buzzer (Black).....	per 100	163.00
No. 220-N, Buzzer (Pol.-Cad.).....	per 100	163.00

\*Black with nickel gong; with polished-cadmium covers at no extra cost.

**No. 238 PR 3-Inch Monitor Bells Double Magnets for 6-Volt Transformer or 6-8-Volt Battery Circuits**

*Schedule T*



This bell is designed for special requirements where a self-contained round bell is wanted. Standard resistance is 2 ohms. Furnished to any special resistance up to 200 ohms, inclusive at a standard list addition.

Base is provided with mounting holes. Finish is polished nickel gong with black enamel base.

Size gong, 3 inches. Standard package, 1.

Price, No. 238.....each \$1.80

**PR Marlo Adjustable Double-Magnet Transformer Bells and Buzzers**

*Schedule E*

For 6-Volt Transformer Circuits

Outside and inside binding posts, enclosed mechanisms. With laminated magnet cores, carbon contacts, reed type armatures, back tension adjustments, insulated mechanisms.

Black base and cover, nickel gong.

Furnished to operate on 12-18-volt transformer or 6 to 12-volt d.c. circuits, if so specified at prices shown below.



Cat. No.	Each	Description	Std. Pkg.
231	\$6.15	2½-Inch Bell.....	6
232	6.30	3-Inch Bell.....	6
233	6.75	4-Inch Bell.....	6
257	8.55	Cow Bell.....	1
258	8.55	Sleigh Bell.....	1
259	8.55	Dome Bell.....	1
260	6.00	Buzzer.....	6

**Bells and Buzzers**

*Schedule E*

Polished-cadmium finish. Standard package, 10; may be assorted to obtain standard package price.

**PR Midget Adjustable Buzzers**



Cat. No. 331

Size Inches	For Battery and D.C. 6-8 Volts		*No-Contact Type for Transformer 8-24 Volts	
	Cat. No.	Each	Cat. No.	Each
1½x1⅛	330	\$1.90	330-AC	\$1.90
2½x1⅞	331	1.80	331-AC	1.80
2⅞x1¾	332	1.90	332-AC	1.90
3 x2	333	2.00	333-AC	2.00

\*Adjustable tone, fully insulated.

**PR Midget Bells**

6-8 Volts D.C., 8-10 Volts Transformer

Cat. No. ....	334	335
Size Gong.....inches	1¾	1
Each.....	\$2.20	2.40

**No. 261 Monitor Round Adjustable Buzzers**

Diameter, 2¼ inches; height, 1⅞ inches.

No. 261, For Battery and D.C., 6-8 Volts..... each \$1.80

No. 261-AC, No-Contact Type for A.C. Transformer Only, Fully Insulated, 8-24 Volts..... each 1.80



Cat. No. 334

**No. 239 Non-Adjustable Watchcase Buzzers**

Diameter, 1¾ inches; height, ⅝ inch.

No. 239, For Battery and D.C., 6-8 Volts..... each \$1.80

No. 239-AC, No-Contact Type for A.C. Transformer Only, Fully-Insulated, 8-24 Volts..... each 1.80

**Faraday Flush Residence Call-Panels**

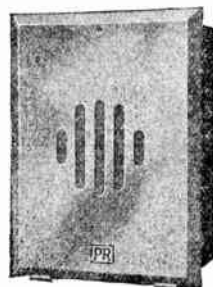
*Schedule A*

Consists of signalling device mounted in steel outlet box (5" wide, 7¼" high, 2¾" deep), covered by hinged plate (6" wide, 8" high); plate is provided with sound-openings, closed from back by a wire mesh. Standard package, 1.

In jade-green, blue or ivory. For polished cadmium, add \$1.00 to list.

To Operate on 8-Volt Transformer or Battery.

Cat. No.	Each	No. Slg.	Description
536	\$5.00	2	Comb. Bell-Buzzer
921	5.75	2	One 2½-Inch Bell, One Cow Bell
962	7.00	2	One Buzzer, One Musical Tap
To Operate on 8-Volt Transformer Only			
963	\$7.15	2	One 2½-Inch Bell, One High-Pitch Buzzer
961	10.00	3	Buzzer and Musical Tap, High-Pitch Buzzer



## Faraday A.C. Signal Gongs

### Neck Pattern

N.E.C. Standard—Schedule T

Vibrating, Clapper, Contact Type, Weatherproof Enclosed Type

For Transformer and A.C. Light and Power Circuits

Mechanisms are fully protected from dust, dampness and mechanical injury. With laminated cores, carbon contacts and bakelite insulation throughout. Standard package, 1.

### Model AT—Non-Guarded Gongs

Cat. No. and Size Gong	12-18V Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
AT- 4	\$13.40	\$23.45	\$32.75
AT- 5	22.10	36.00	49.20
AT- 6	24.10	38.85	52.75
AT- 8	29.55	46.75	63.05
AT-10	51.00	70.60	88.55
AT-12	58.15	77.80	95.75

### Model BT—Half-Grid-Guarded Gongs

Cat. No.	12-18V Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
BT- 4	\$20.15	\$30.15	\$39.50
BT- 5	29.30	43.20	56.40
BT- 6	31.40	46.05	59.90
BT- 8	39.25	56.45	72.80
BT-10	64.75	83.35	101.30
BT-12	75.30	95.00	112.95

### Model CT—Full-Screen-Guarded Gongs

Cat. No.	12-18V Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
CT- 4	\$31.35	\$41.40	\$50.70
CT- 5	43.05	56.95	70.15
CT- 6	45.15	59.80	73.70
CT- 8	55.70	72.90	89.25
CT-10	83.95	103.50	121.50
CT-12	100.00	119.70	137.65

### Model AT—With Rectangular or Cow-Gongs Non-Guarded

Cat. No. and Size Gong	12-18V Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
AT-112	\$15.90	.....	.....
AT- 23	15.90	\$25.95	\$35.25
AT- 35	29.10	43.85	57.75
AT- 46	39.55	56.75	73.05

### Model AT—With Sleigh Gongs—Non-Guarded

AT-111	\$15.90	\$25.95	\$35.25
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### Model AT—With Dome-Gongs

AT- 21	\$15.90	\$25.95	\$35.25
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### Model YT Yard-Type Gongs with Protective Hood

Cat. No. and Size Gong	12-18 V. Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
YT- 4	\$38.40	\$48.45	\$57.75
YT- 5	47.10	61.00	74.20
YT- 6	49.20	63.85	77.75
YT- 8	54.55	71.75	88.05
YT-10	76.00	95.60	113.55
YT-12	83.15	102.80	120.75

For surface and flush-conduit installation furnished with separate conduit-box-backs, having combination 1/2-inch and 3/4-inch knockouts, add \$10.00 to prices.

Rectangular or cow-gongs can be furnished on Models AT and YT. Add \$5.00 to price of AT-6 or YT-6 for 3 1/2 x 5-inch gong and specify Cat. Nos. AT-35 or YT-35 respectively. Add \$10.00 to price of AT-8 or YT-8 for 4 1/4 x 6-inch gong and specify Cat. Nos. AT-46 or YT-46 respectively.

Lower-priced half-grids or full-grids can be furnished at the following additions to prices of Model AT:

Size.....inches	6	8	10	12
Each.....	\$7.50	8.00	9.00	10.50

## Faraday A.C. Signal Gongs and B buzzers

N.E.C. Standard—Schedule T

Vibrating, Polarized Plunger Type, Dust-Proof, Enclosed, No Contact, Non-Sparking, Non-Weatherproof

For Transformer and A.C. Light and Power Circuits

High grade no-contact, non-sparking vibrating polarized mechanisms. Will stand up under practically continuous a.c. service of the most severe sort.

Bakelite insulation throughout. Standard package, 1.

### Model ATL Neck Pattern—Non-Guarded Gongs

Cat. No. and Size Gong	12-30 V. Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
ATL- 3	\$9.30	\$11.30	\$13.80
ATL- 4	10.30	12.50	15.00
ATL- 6	15.00	17.20	19.70
ATL- 8	18.00	21.00	23.50
ATL-10	27.50	29.70	32.20
ATL-12	33.00	35.50	38.00
ATLB Buzzer	7.70	10.70	13.20

For half-grids (Cat. No. BTL) and full-grids (Cat. No. CTL) add to price of Model ATL:

Size In.	Each	Size In.	Each	Size In.	Each
3	\$5.00	6	\$7.50	10	\$9.00
4	5.50	8	8.00	12	10.50

For yard-type protective hoods, add \$25.00 each.

Rectangular or cow-gongs can be furnished as follows: Add \$5.00 to price of ATL-6 for 3 1/2 x 5-inch gong and specify Cat. No. ATL-35; add \$10.00 to price of ATL-8 for 4 1/4 x 6-inch gong and specify Cat. No. ATL-46.

### Model ATLD Double-Gong Pattern Non-Guarded Gongs

Cat. No. and Size Gong	12-30 V. Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
ATLD- 3	\$10.30	\$12.30	\$14.80
ATLD- 4	11.30	13.40	15.90
ATLD- 6	21.90	24.10	26.60
ATLD- 8	25.60	28.00	30.50
ATLD-10	30.00	32.80	35.30

For half-grids and full-grids, add to price:

Size.....inches	3	4	6	8	10
Each.....	\$10.00	11.00	15.00	16.00	18.00

Furnished W.P. for outside use at an addition of \$1.25.

### Model MTL Monitor Pattern—Non-Guarded Gongs

Specify voltage desired when ordering.

Cat. No. and Size Gong	12-30 V. Trans. Each	110-125 V., A.C. Each	220-250 V., A.C. Each
MTL- 4	\$10.30	\$12.50	\$15.00
MTL- 6	15.00	17.20	19.70
MTL- 8	18.00	21.00	23.50
MTL-10	27.50	29.70	32.20
MTL-12	33.00	35.50	38.00
MTL-14	55.20	65.20	75.20
MTL-16	122.85	132.85	142.85
MTL-18	140.50	150.50	160.50

For half-grids, MBTL, and full-grids, MCTL, add to price of MTL:

Size.....inches	6	8	10	12
Each.....	\$7.00	8.00	9.00	10.00

For half-grid-guarded-weatherproof add to prices of non-guarded non-weatherproof:

Size.....inches	8	10	12	14	16	18
Each.....	\$15.00	17.00	19.50	43.40	53.90	68.90

For full-screen-guarded-weatherproof, add to prices of non-guarded non-weatherproof:

Size.....inches	8	10	12	14	16	18
Each.....	\$33.00	35.00	37.50	72.90	89.90	107.90

CONDUIT BELLS.—Adapter-plate allows any bell to be mounted on standard 4-inch square box or extension cover. Also fits single or double-gang conduit. Adapter-plate furnished as standard with 110 or 220-volt bells. On low voltage bells specify "conduit bell" if desired and add \$1.25. Cast wall box can be furnished at \$1.25 list addition to 110 or 220-volt bells; \$2.50 list addition to low voltage bells.

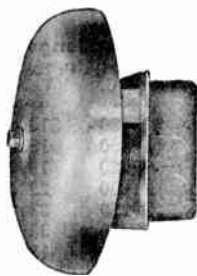
**Model KTS Faraday A.C. Signal Gongs**  
Monitor Pattern  
Schedule T

Single-Stroke, Solenoid-Plunger Type,  
Non-Weatherproof, Non-Guarded Gongs  
For Transformer and A.C. Light and Power Circuits

For general use and for paging systems of the code-calling type. Not suitable for closed-circuit-approved fire alarm systems where Underwriters approved gongs of 5150 or 5120 pattern should be used.

Regularly provided, without extra charge, with separable conduit-box-backs, adaptable to both surface and flush conduit installations. Boxes regularly have 1/2-inch knockouts; with 3/4 inch, when specially ordered.

Standard package, 1.



Cat. No. and Size Gong	12-30 V. Trans. Each	110-125 V. A.C. Each	220-250 V. A.C. Each
KTS- 4	\$10.30	\$10.30	\$13.50
KTS- 6	13.80	13.80	14.40
KTS- 8	15.80	15.80	16.40
KTS-10	19.30	19.30	19.90
KTS-12	22.50	22.50	23.10

For full-grids add to list prices:

Size.....inches	4	6	8	10	12
Each.....	\$5.50	7.50	8.00	9.00	10.00

**Faraday A.C. Single-Stroke Fire Alarm Gongs**  
Schedule D

Listed as standard by National Board of Fire Underwriters. A.C. fire alarm gongs are arranged to be wired in series. Not more than 10 gongs can be used on any 110-125-volt a.c. circuit.

Specify the number of gongs required on each circuit and the voltage of the circuit.

Regularly provided, without extra charge, with separable conduit-box-backs, adaptable to both surface and flush conduit installations. Boxes regularly have 1/2-inch knockouts; furnished with 3/4-inch knockouts when so ordered.

Standard package, 1.

No. 5150 Monitor Pattern—Non-Guarded					
Size.....inches	4	6	8	10	12
No. 5150.....each	\$18.00	24.00	27.00	32.00	36.00

No. 5120 Neck Pattern					
Size.....inches	4	6	8	10	12
No. 5120.....each	\$18.00	24.00	27.00	32.00	36.00

**Model MTTL Faraday A.C. Traffic-Signal Gongs**

Monitor Pattern  
Schedule T

Vibrating, Polarized, Weatherproof Enclosed,  
Non-Guarded Gongs

For Operation on A.C. Transformer or 100-110 Volt and 220-250 Volt Light and Power Circuits, 60 Cycles

Mechanism is polarized, no-contact non-sparking plunger-pattern with special hardened steel bearings, etc., to guarantee dependable signal operation where the work is practically continuous.

Mechanism is protected from dust, dampness and mechanical injury. Bakelite insulation throughout.

When ordering, specify cycles.

Regularly provided, without extra charge, with separable conduit-box-backs, adaptable to both surface and flush conduit installations. Boxes regularly have 1/2-inch knockouts but will be furnished 3/4 inch when specially ordered.

Standard package, 1.

Cat. No. and Size Gong	18-30 V. Trans. Each	100-110 V. A.C. Each	220-250 V. A.C. Each	Cat. No. and Size Gong	18-30 V. Trans. Each	100-110 V. A.C. Each	220-250 V. A.C. Each
MTTL-6	\$27.00	\$30.75	\$33.75	MTTL-10	\$42.00	\$45.75	\$48.25
MTTL-8	32.00	35.75	38.25	MTTL-12	52.00	55.75	58.25

Neck pattern Cat. No. ATTL can be furnished at same price if desired.

For BTTL half-grid guarded, add:

Size.....inches	8	10	12	14	16	18
Each.....	\$15.00	17.00	19.50	43.40	53.90	68.90

For CTTL full-screen guarded, add:

Size.....inches	8	10	12	14	16	18
Each.....	\$33.00	35.00	37.50	72.90	89.90	107.90

**Model ATN Faraday-Marlo A.C. Transformer Signal Gongs and Buzzers**

Neck Pattern

N.E.C. Standard—Schedule T

Vibrating, Clapper, Contact Type, Non-Weatherproof,  
Non-Guarded, Gongs Enclosed

For Transformer and A.C. Light and Power Circuits, 50-60 Cycles

Black enameled cases with bauer-barff finished gongs, polished nickel binding posts.

Standard package, 1.

Specify Cat. No. and voltage when ordering.



Cat. No. and Size Gong	6-9 V. Trans. Non-Conduit Each	WITH ADAPTER-PLATE FOR CONDUIT—	
		110-125 V. A.C. Each	220-250 V. A.C. Each
ATN- 3	\$9.30	\$11.30	Not Made
ATN- 4	10.30	12.50	Not Made
ATN- 6	15.00	17.20	\$41.25
ATN- 8	18.00	21.00	44.50
ATN-10	27.50	29.70	53.65
ATN-12	33.00	35.50	78.25
ATN-B Buzzer	7.70	10.70	31.20

For half-grids and full-grids add:

Size.....in.	6	8	10	12
Each.....	\$7.50	8.00	9.00	10.50

For yard-type protective hoods, add \$25.00 each.  
CONDUIT BELLS.—Adapter-plate permits mounting of any bell on standard 4-inch square box or extension cover. Also fits single or double-gang conduit. Adapter-plate furnished regularly at no extra charge with 110-130-volt bells. If desired on low-voltage bells specify "conduit-bell" and add to list \$1.25. Cast wall-box can be furnished, if desired; add \$1.25 to list of 110-volt bells and \$2.50 to list of low-voltage bells.

Rectangular or cow-gongs can be furnished as follows: Add \$5.00 to price of ATN-6 for 3 1/2x5-inch gong and specify Cat. No. ATN-35; add \$10.00 to price of ATN-8 for 4 1/2x6-inch gong and specify Cat. No. ATN-46.

Model ATN gongs furnished weatherproof at \$1.25 extra.

**Model XMTS Faraday A.C. Single-Stroke Special-Toned Gongs and Buzzers**

N.E.C. Standard—Schedule T

For Transformers and 60-Cycle A.C. Circuits

Standard package 1.



No. XMTS-20

Cat. No.	Soft-Toned Gong		
	12-24 V. Trans. Each	110-125 V. A.C. Each	220-250 V. A.C. Each
XMTS-20	\$18.00	\$27.10	\$35.20
XMTS-30	\$25.00	\$27.50	\$30.00
XMTS-40	\$24.00	\$33.10	\$41.20
XMTB-50	\$14.80	\$23.00	\$31.20

**No. 2502-A Faraday A.C. Trouble-Bells**

N.E.C. Standard—Schedule D

For Operation on 110-125 Volts, 60 Cycles A.C.



A high grade, dependable vibrating gong for use with fire or sprinkler or burglar alarm control cabinets to indicate by continuous ringing, failure of operating current, breaking of circuit wires, etc.

Standard package, 1.

When ordering bells to operate on 100-110 volts a.c., specify frequency (number cycle) of circuit.

No. 2502-A.....each \$30.00



## Faraday D.C. Signal Gongs

### Neck Pattern

N.E.C. Standard—Schedule T

Vibrating, Clapper, Contact Type, Weatherproof, Enclosed Type

For Battery and D.C. Light and Power Circuits

Mechanisms are fully protected from dust, dampness and mechanical injury. Bakelite insulation throughout. Standard package, 1.

### Model A—Non-Guarded Gongs



Cat. No. and Size Gong	Battery 6-9 V. Each	110-125 V., D.C. Each	220-250 V., D.C. Each
A-1 3/4	\$6.60	.....	.....
A-2	7.25	.....	.....
A-2 1/2	7.80	.....	.....
A-3	8.85	.....	.....
A-4	10.85	\$19.05	\$27.30
A-5	15.80	27.90	40.00
A-6	17.80	30.50	43.25
A-8	22.00	36.95	51.90
A-10	36.95	54.90	72.85
A-12	49.90	67.80	85.80
A-14	61.60	82.50	103.50
A-16	129.25	159.15	189.10
A-18	146.90	176.85	206.75

### Model A—With Rectangular or Cow-Gongs

Cat. No. and Size Gong	Battery 6-9 Volts Each	110-125 V., D.C. Each	220-250 V., D.C. Each
A-112	\$11.35	.....	.....
A-23	13.35	\$21.55	\$29.80
A-35	22.80	35.50	48.25
A-46	32.00	46.95	61.90

### Model A—With Sleigh Gongs—Non-Guarded

A-111	\$13.35	\$21.55	\$29.80
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### Model A—With Dome-Gongs

A-21	\$13.35	\$21.55	\$29.80
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### Model B—Half-Grid-Guarded Gongs

B-4	\$17.60	\$25.80	\$34.05
B-5	22.95	35.10	47.20
B-6	25.00	37.70	50.40
B-8	31.70	46.70	61.60
B-10	49.65	67.60	85.55
B-12	67.10	85.05	103.00
B-14	101.20	122.15	143.10



### Model C Full-Screen-Guarded Gongs

Cat. No. and Size Gong	Battery 6-9 V. Each	110-125 V., D.C. Each	220-250 V., D.C. Each
C-4	\$28.80	\$37.00	\$45.20
C-5	36.75	48.85	60.95
C-6	38.75	51.45	64.20
C-8	48.15	63.15	78.10
C-10	69.85	87.70	105.75
C-12	91.80	109.75	127.70
C-14	128.85	149.80	170.75



### Model Y Yard-Type Gongs With Protective Hood

Cat. No. and Size Gong	Battery 6-9 V. Each	110-125 V., D.C. Each	220-250 V., D.C. Each
Y-4	\$35.85	\$44.05	\$52.30
Y-5	40.80	52.90	65.00
Y-6	42.80	55.50	68.25
Y-8	47.00	61.95	76.90
Y-10	61.95	79.90	97.85
Y-12	74.90	92.80	110.80
Y-14	86.60	107.50	125.50

For separable conduit-box backs, having combination 1/2 and 3/4-inch knockout, add \$10.00 to above prices.

Rectangular or cow-gongs furnished on Models Y-6 and Y-8 at following prices: Add \$5.00 to A-6 or Y-6 for 3 1/8"x6" gong; add \$10.00 to A-8 or Y-8 for 4 1/4"x6" gong.

For lower-priced half-grids or full-grids add to prices of Model A:

Size.....inches	4	6	8	10	12
Each.....	\$5.50	7.50	8.00	9.00	10.50

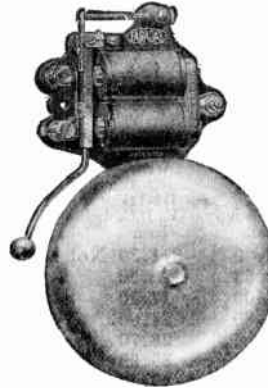
## Vibrating Bells

Regular Gongs, Sched. E—Fancy Gongs, Sched. T

Clapper Type, Non-Weatherproof

### Model O Faraday Skeleton Bells

For Battery Circuits Only



Designed to meet the requirements of good signal gongs with exposed mechanisms; high power patented pivoted armatures. Breakage of tension springs cannot disable gongs.

Contacts regularly Platinoid; platinum contacts, at an extra price. Bakelite insulation.

Wound to any special resistance at standard list additions; furnished converted-single-stroke when ordered at \$2.50 net extra. For important single-stroke work, standard single-stroke gongs are recommended.

For yard-type protected hoods, add \$25.00 each.

### With Regular Gongs

Cat. No. and Size Gong	Each	Resistance Ohms	Std. Pkg.	Cat. No. and Size Gong	Each	Resistance Ohms	Std. Pkg.
O-2 1/2	\$5.70	3	5 Ass't.	O-10	\$24.85	5	5 Ass't.
O-3	6.05	3	5 Ass't.	O-12	31.00	5	5 Ass't.
O-4	7.10	3	5 Ass't.	O-14	62.00	5	5 Ass't.
O-5	9.35	4	5 Ass't.	O-16	123.70	8	5 Ass't.
O-6	10.55	4	5 Ass't.	O-18	143.25	8	5 Ass't.
O-8	16.00	5	5 Ass't.	.....	.....	.....	.....

### With Fancy Gongs

Cat. No.	Each	Type	Frame No.	Size In.	Std. Pkg.
O-112	\$9.05	Cow or Rectangular	1	1 3/4 x 2 1/2	1
O-23	9.20	Cow or Rectangular	1	2 x 3	1
O-35	15.55	Cow or Rectangular	2	3 1/8 x 5	1
O-46	26.00	Cow or Rectangular	3	4 1/4 x 6	1
O-111	9.05	Sleigh.....	1	1 1/2 x 1 3/4	1
O-21	9.05	Dome.....	1	2 1/2 x 1 1/4	1

### Model Z Faraday-Ekla Skeleton Bells

For Battery Circuits Only

With back adjustment reed-type armatures and adjustable side contacts. Pure silver contacts. Bakelite insulation.

Wound to any special resistance at standard list additions; furnished converted-single-stroke when ordered at \$2.50 net additional, but for important single-stroke work, standard single-stroke gongs are recommended.

For yard-type protected hoods, add \$25.00 each.

Cat. No. and Size Gong	Each	Resistance Ohms	Std. Pkg.	Cat. No. and Size Gong	Each	Resistance Ohms	Std. Pkg.
Z-2 1/2	\$5.25	3	5 Ass't.	Z-6	\$8.85	4	5 Ass't.
Z-3	5.55	3	5 Ass't.	Z-8	14.35	5	5 Ass't.
Z-4	6.60	3	5 Ass't.	Z-10	21.30	5	5 Ass't.
Z-5	7.80	4	5 Ass't.	Z-12	27.50	5	5 Ass't.

### Model EA Faraday-Ekla Covered Bells

For Transformer or Battery Circuits

Reed-type armatures with back tension adjustments and adjustable side contacts. Heavy pressed steel frames and covers. With extra large double-magnets. Bakelite insulation.

For yard-type protected hoods, add \$25.00 each.

Standard package, 5 assorted.

Cat. No. and Size Gong	EA-3	EA-4	EA-6	EA-8	EA-10	EA-12
Model EA.....each	\$5.55	6.60	7.80	11.40	15.00	21.20

### PR Model Q Single-Magnet Commercial Covered Bells

For Transformer or Battery Circuits

With covered mechanisms, exposed gongs and binding posts. Made with pressed steel frames.

The 4 and 6-inch sizes are designed for operation on 3-6-volt battery or 6-8-volt transformer; 8-inch size for 6-volt battery or 12-volt transformer.

Finished in black; polished nickel gong and posts.

Standard package, 5 assorted.

Cat. No. and Size Gong	Q-4	Q-6	Q-8
Model Q.....each	\$3.15	4.00	6.70

**Model AN Faraday-Marlo D.C. Signal Gongs**

**Neck Pattern**

*N.E.C. Standard—Schedule T*

**Vibrating, Commercial Grade, Clapper, Contact Type, Non-Weatherproof, Non-Guarded Gongs, Enclosed**

**For Battery and D.C. Light and Power Circuits**

Black enameled cases with bauer-barff finished gongs, polished nickel binding posts.

Standard package, 1.

Specify Cat. No. and voltage when ordering.



Cat. No. and Size Gong	Battery 6-9 V. Non-Conduit Each	WITH ADAPTER-PLATE FOR CONDUIT	
		110-125 V., D.C. Each	220-240 V., D.C. Each
AN-3	\$8.80	\$11.30	Not Made
AN-4	10.80	12.50	\$15.80
AN-6	15.00	17.20	20.60
AN-8	18.80	21.00	24.40
AN-10	26.30	29.70	31.90
AN-12	31.30	35.50	35.00
AN-B Buzzer	7.70	9.50	24.10

For half-grids and full-grids add:

Size.....in.	4	6	8	10	12
Each.....	\$5.50	7.50	8.00	9.00	10.50

For yard-type protected hoods, add \$25.00 each.

**CONDUIT BELLS.**—Adapter-plate permits mounting of any bell on standard 4-inch square box or extension cover. Also fits single or double-gang conduit. Adapter-plate furnished regularly with 110-125-volt bells. If desired on low-voltage bells specify "conduit bell" and add \$1.25 to list price. Cast wall-box can be furnished if specified with 110-volt bells at \$1.25 addition to list price and low-voltage bells at \$2.50 addition to list price.

Rectangular or cow-gongs can be furnished on Cat. Nos. AN-6 and AN-8 at the following prices: Add \$5.00 to price of AN-6 for 3½x5-inch gong; add \$10.00 to price of AN-8 for 4½x6-inch gong.

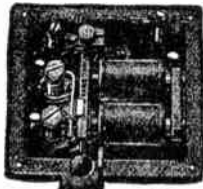
Model AN gongs furnished weatherproof at \$1.25 extra.

**Faraday Signal Buzzers**

*N.E.C. Standard—Schedule T*



**Enclosed Type**



**Open Type**

These buzzers never fail to give a signal.

Close fitting, rubber-gasketed covers protect mechanisms. All current-carrying parts mounted on bakelite pads, completely insulating same from frame. Contacts regularly Platinoid; pure platinum, extra. Standard package, 1. ;

**For Transformer and A.C. Light and Power Circuits**

Cat. No.	Type	12-18 V.	110-125	220-250	Dimen. In.
		Trans. Each	V., A.C. Each	V., A.C. Each	
93-T	Encl.	\$7.75	.....	.....	2½ x 2½ x 1½
*99-TD	Encl.	3.50	\$4.00	.....	.....
99-T	Encl.	8.75	.....	.....	3½ x 3½ x 1¾
101-T	Encl.	10.00	20.00	\$29.30	3½ x 4½ x 2¼
94-T	Encl.	12.00	22.00	31.30	4¼ x 4¾ x 2¼
†94-TB	Encl.	14.00	24.00	33.30	.....
89-T	Open	7.25	.....	.....	2 x 2 x 1½
91-T	Open	8.25	.....	.....	2½ x 2½ x 1½

**For Battery and D.C. Light and Power Circuits**

Cat. No.	Type	Battery 6-9 V.	110-125	220-250	Dimen. In.
		Each	V., D.C. Each	V., D.C. Each	
93	Encl.	\$7.75	.....	.....	2½ x 2½ x 1½
99	Encl.	8.75	.....	.....	3½ x 3½ x 1¾
101	Encl.	10.00	\$20.00	\$29.30	3½ x 4½ x 2¼
94	Encl.	12.00	22.00	31.30	4¼ x 4¾ x 2¼
†94-B	Encl.	14.00	24.00	33.30	.....
89	Open	7.25	.....	.....	2 x 2 x 1½
91	Open	8.25	.....	.....	2½ x 2½ x 1½

\*Diaphragm type, no contacts. †With 1¼-inch gong.

**Faraday Watertight Signal Gongs and Buzzers**

*Schedule T*

**For Operation on A.C. and D.C. Circuits**

**Vibrating, Cast Bronze Case**

Designed for marine work, mines, chemical factories and such places where it is necessary to protect the contacts of bells from water, gas fumes, etc.

Standard finish—boxes, natural brass; covers and gongs, black-nickel.

Specify exact voltage required, when ordering.

Regularly furnished with cast bronze cases; with cast aluminum cases in accordance with U. S. Navy specifications, if so specified, at an addition of 15% to list. Standard package, 1.



**Nos. WA-6 and WTA-6**

Cat. No. and Size Gong	A.C., Enclosed Type			Cat. No. and Size Gong	D.C., Monitor Type		
	18-30 V. Trans. Each	100-125 V. Each	220-250 V. Each		4-47 V. Each	48-125 V. Each	220-250 V. Each
WTA-3	\$16.65	\$18.40	\$20.60	WA-3	\$17.25	\$18.25	\$20.75
WTA-4	18.95	20.60	23.00	WA-4	19.50	20.75	23.00
WTA-6	21.25	23.00	25.30	WA-6	21.75	23.00	25.25
WTA-8	25.85	27.60	29.30	WA-8	26.50	27.75	30.00
WTA-10	30.45	32.20	34.50	WA-10	31.00	32.25	34.50
WTA-12	35.05	36.80	39.10	WA-12	35.75	37.00	39.25
WTA-Cow	23.55	25.30	27.60	WA-Cow	24.25	25.50	27.75
WTA-Buzzer	16.65	18.40	20.60	WA-Buzzer	16.00	17.25	19.50

**Single-Stroke, Cast Bronze Case**

For a.c. or d.c. enclosed type gongs, deduct \$1.00 from prices shown above.

**Faraday Single-Stroke Musical Chimes**

*N.E.C. Standard—Schedule T*

Pressed steel housing covers mechanism beneath musical bar. Standard package, 1.

**Model RTS**

**For Transformer and 60-Cycle A.C. Circuits**

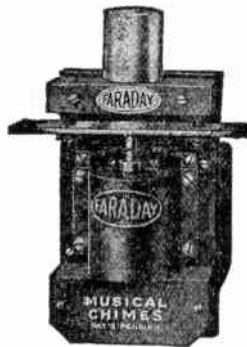
18-30 V. Trans.....	each	\$27.50
110-125 V., A.C.....	each	30.00
220-250 V., A.C.....	each	32.50

**Model RS**

**For Battery and D.C. Circuits**

Battery 6-9 Volt....	each	\$27.50
110-125 V., D.C.....	each	30.00
220-250 V., D.C.....	each	32.50

When specially ordered, can be furnished with round brass-gong equipment; prices on application.



**Model XMS Faraday D.C. Single-Stroke Special-Toned Gongs and Buzzers**

*N.E.C. Standard—Schedule T*

**For Battery and D.C. Circuits**

These gongs and buzzers are regularly provided without extra charge, with standard separable conduit-hox-backs adaptable to both surface and flush conduit installations.

Standard package, 1.



**No. XMS-30 XMB-50**

Cat. No.	Type	Soft-Toned Gong	110-125	220-250
		Battery 6-9 V. Each	V., D.C. Each	V., D.C. Each
XMS-20	Encl.	\$20.00	\$27.10	\$30.00
XMS-30	Encl.	\$25.00	\$27.50	\$30.00
XMS-40	Encl.	\$24.00	\$33.10	\$41.20
XMB-50	Encl.	\$9.35	\$17.55	\$25.75

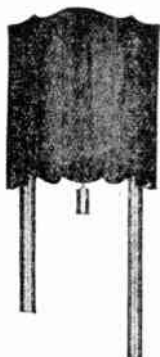
## Square D Electro Chimes Guest Announcers



**No. A-1 Hallboy**

Has compact walnut case with chime rods inclosed. Operated by solenoid and rings from 4 to 8 times.

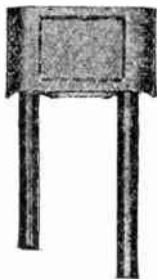
Is 15 inches high, 6½ inches wide, 3 inches deep. No. A-1.....each \$20.00



**No. B-1 Longboy**

Walnut case and polished brass chime tubes. Mechanism similar to No. A-1.

Is 53 inches long, 8 inches wide, 3 inches deep. No. B-1.....each \$21.00



**No. C-2 Windsor**

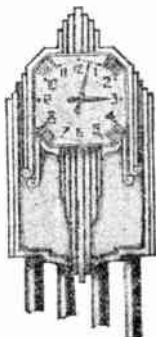
Bronze colored metal front. Polished brass tubes. One ring back door signal, two rings front door.

Is 53 inches long, 7¼ inches wide, 3 inches deep. No. C-2.....each \$14.00

**No. D-2 Tudor**

Same as No. C-2, but with shorter bronze colored tubes.

Is 42 inches long, 7¼ inches wide, 3 inches deep. No. D-2.....each \$12.00

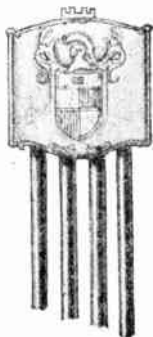


**No. G-3 De Luxe**

A 4-tube Westminster chime, chromium and black finish with chromium chime tubes. Motor operated. Electric clock.

Same dimensions as F-1. No. G-3.....each \$155.00

For 3-tube chimes in the F and G Models, deduct \$5.00 from list price. For 5-tube models, add \$15.00 to list price. If back door signal is required, add \$5.00 to price.



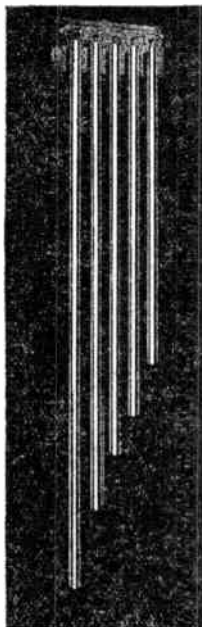
**No. F-3 Kensington**

Same as No. F-1 and F-2, except case and chime tubes finished in bronze. No. F-3.....each \$65.00

**No. F-4 Essex**

Same as No. F-3.

## Deagan Door Chimes



Chimes are chromium-plated and are suspended from a black bakelite wall plate. Lustrous-gold finish tubes optional.

Nos. 505, 504, 503 and 502 with Telechron motored chiming device and 16 to 24-volt transformer.

**No. 505—5-Tone Model**

Plays all 5 tones at each pressure on push button. Six different sequences or arrangements of notes.

Overall dimensions, 12¾x55 inches. No. 505.....each \$70.00

**No. 504—4-Tone Model**

Plays all 4 tones at each push button pressure. Plays different sequence of notes each time—no repetition until seventh sequence.

Overall dimensions, 10¾x55 inches. No. 504.....each \$62.50

**No. 503—3-Tone Model**

Plays 4 notes each time and plays 6 different sequences.

Overall dimensions, 8¾x55 inches. No. 503.....each \$55.00

**No. 502—2-Tone Model**

Has only 2 tones but plays 3 notes at each pressure on push button. Six different sequences or melodies.

Overall dimensions, 6¾x55 inches. No. 502.....each \$47.50

**No. 501—Single-Tone Model**

Dimensions, 4¾x48 inches. With transformer. No. 501.....each \$17.00

Prices are based on a.c., 110 volts, 50 or 60 cycles. Prices for a.c., 25 or 33 cycles or for d.c., on request.

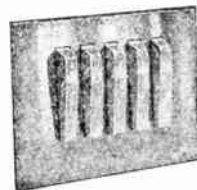
**No. 514**



These chimes have a soft mellow harp-like tone. Bars are jap bronze; base is walnut finished. Telechron motored chiming device plays 4 tones in each of 6 different sequences. Furnished with transformer. Dimensions, 11¾x16¾ inches.

No. 514.....each \$67.50

## Keyboards for Deagan Dinner Chimes



An attractive keyboard for manually playing the individual tones. An ideal means of announcing meal time, summoning servants, etc.

Has chromium-plated base and ivory composition keys with graphalloy contacts.

Model.....	5 Tone	4 Tone	3 Tone	2 Tone	1 Tone
Each.....	\$15.00	12.50	10.00	7.50	5.00
For Chimes No. . .	505	504, 514	503	502	501



**No. 197 Edwards Bakelite Directory Desk Pushes**



*Schedule E*  
Has phosphor bronze scrapping contacts and is fully insulated.  
Base is covered with soft sponge rubber.  
Has changeable name cards.  
Standard color, black. Mahogany, oak or walnut, no extra charge.  
Standard package, 5 assorted.

No. of Buttons	With 6-Foot Cord and Connector Each	With 6-Foot Cord Only Each	Without Cord Each	*Wt., Oz.
1	\$4.40	\$3.30	\$2.50	4
2	5.26	4.10	3.00	4
3	6.44	5.20	3.50	5
4	7.44	6.10	4.30	6
5	10.00	8.50	5.80	7
6	12.06	10.30	7.30	8

\*Weight of push only.

**No. 195 Edwards Combination Desk Pushes and Buzzers**

*Schedule T*

A buzzer is included within the push itself. Standard finish is black; mahogany or oak, at no extra charge.

There must be 2 more conductors than buttons.

No. of Buttons	Without Cord Each	With 6-Ft. Cord Attached Each	No. of Buttons	Without Cord Each	With 6-Ft. Cord Attached Each
1	\$9.90	\$10.44	6	\$22.50	\$25.58
2	11.00	12.32	8	30.00	33.96
3	13.00	14.76	10	37.50	42.34
4	15.80	18.00	12	45.00	50.70
5	19.00	21.64			

For Larger Sizes, Add per Button..... \$2.50  
For Flexible Cord Only, per Foot per Conductor..... .08  
Over 100 Feet, per Foot per Conductor..... .06  
Can be furnished with connector. Price on application.



**No. 190 Edwards Wood Desk Pushes**

*Schedule T*

Weighted, felt-covered base. Standard finish, oak and nickel; mahogany and brass, no extra charge. Black buttons.

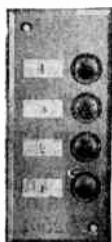
No. of Buttons	Without Cord Each	With 6-Foot Cord Attached Each	Wt., Oz.	No. of Buttons	Without Cord Each	With 6-Foot Cord Attached Each	Wt., Oz.
1	\$3.90	\$4.40	6	6	\$10.80	\$13.88	13
2	5.30	6.62	8	8	13.70	17.66	16
3	6.60	8.36	10	10	16.40	21.24	19
4	8.10	10.30	11	12	20.25	25.97	21
5	9.40	12.04	12				

Can be furnished with connector. Price on application.

**No. 191 Edwards Directory Plates**

Furnished without wood mat.  
For flush mounting in desk or wall.  
Standard finish is nickel-plate; brush brass at no extra charge.

Same price as No. 190, without cord.



**Edwards Cast Bronze Desk Pushes**

Names are interchangeable. No. 143 is wound for 6 volts, d.c. or 8 volts a.c. Up to 24 volts, no extra charge.  
Width, 2 3/4 inches. Height, 1 1/8 inches.

Standard finish, bank bronze.



Buttons	No. 142 Without Buzzer		No. 143 With Buzzer	
	Each	Lgth. In.	Each	Lgth. In.
1	\$9.90	2 1/2	\$15.00	3 1/8
2	11.00	3 1/8	16.00	3 13/16
3	13.00	3 1/8	18.00	3 13/16
4	15.80	3 13/16	21.00	5 1/8
5	19.00	5 1/8	23.70	5 1/8
6	22.50	5 1/8	30.00	3 13/16
*8	30.00	3 13/16	37.50	5 1/8
*10	37.50	5 1/8	45.00	5 1/8
*12	45.00	5 1/8	.....	.....

\*Width, 3 3/8 inches.

**No. 146 Edwards Push Button Blocks With Numbered Pushes**

Of genuine molded Bakelite, with a removable weighted base and a sponge rubber pad. Flush, numbered, midget pushes are supplied with block. Can be mounted on the side of a desk with the use of a concealed mounting hole provided for that purpose. It will not scratch, mar or deteriorate.

Standard finish is black; mahogany or walnut no extra charge. Special engraving, initials or names, 25 cents per letter.



No. of Buttons	Price Each	No. of Buttons	Price Each
1	\$2.15	4	\$3.65
2	2.50	5	4.50
3	3.20	6	5.25

Over 6 buttons add 90 cents per button.

**No. 145 Edwards Push Button Blocks Without Pushes**

Made of molded bakelite with a removable weighted base and sponge rubber pad. Can be mounted on the side of a desk with the use of a concealed mounting hole provided for that purpose.

Drilled for 5/8-inch pushes. Standard finish is black; mahogany or walnut at extra charge.



No. of Buttons	Each	No. of Buttons	Each
1	\$1.90	4	\$2.65
2	2.00	5	3.25
3	2.45	6	3.75

Over six buttons add 65 cents per button.

**Edwards French Table and Pendant Pushes**

For bedrooms in better class residences and apartments. Rims are gold or silver-plated. Centers are cast colored glass matched with precious stone colors. Furnished complete with 8 feet of white silk cord attached.

No. 150 is 2 1/16 inches in diameter; 1 1/8 inches high. No. 70 is 1 1/4 inches in diameter; 2 1/8 inches long.



No. 150



No. 70

Add to Cat. No.	Body	Center	Rim
A	Rose Quartz	Blue	Silver
B	Green Quartz	Violet	Silver
C	Green Quartz	Yellow	Silver
D	Yellow Quartz	Violet	Gold
E	Light Onyx	Black	Gold
F	Ivory	Red	Silver
No. 150, Table Type	.....	each	\$3.50
No. 70, Pendant Type	.....	each	3.50

## No. 620 Midget Edwards Push Buttons

Fully insulated, frame not grounded and at no time carries current. Phosphor bronzed scraping contacts. Self-forming binding posts take any size wire and facilitate connecting. Non-turnable pearl center. Standard finish, nickel. Brass, no extra charge. For 5/8-inch hole. Standard package, 50.



No. 620 ..... each \$ .35  
Black Centers, Additional..... each .12

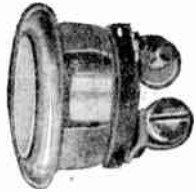
## No. 59 Midget Edwards Push Buttons

Frame is not insulated. Non-turnable pearl center. Self-forming binding posts take any size wire.

Standard finish, nickel. For 3/4-inch hole.

Standard package, 50.

No. 59..... each \$ .75

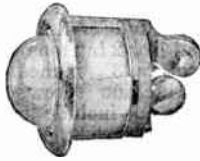


## No. 625 Edwards Colored Center Push Buttons

*Schedule E*

For 5/8-inch hole. Has a raised center of white, black, red or blue. White is standard. Center protrudes and spring is softened. Nickel finish; brass at no extra charge. Std. package, 50.

Luminous centers, 50 cents extra.  
No. 625, Wt., 1 lb..... each \$ .44



## No. 621 Dixie Jr. Edwards Push Buttons

Turned from brass rod, a high grade push of heavy construction. The center is condensite and protrudes 3/16 inch.

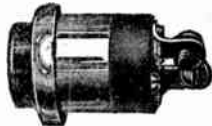
For 5/8-inch hole. Standard finish, nickel. Standard package, 1.

No. 621..... each \$ .65



## No. 116 Slow Break Edwards Push Buttons

Used in automobile controller handles, etc. Turned from brass rod. Wiping phosphor bronze contacts. Phosphor bronze springs. Condensite center. Contact member molded into condensite. For 1/2-inch hole. Standard finish, nickel. Standard package, 1. Price, No. 116..... each \$1.30



## No. 622 Dixie Escutcheon Edwards Push Buttons

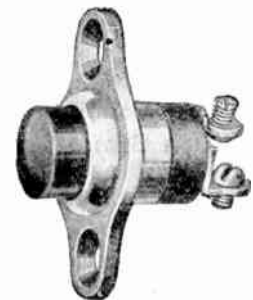
*Schedule E*

Turned from brass rod, of heavy construction. The center protrudes 3/16 inch. Equipped with a retaining escutcheon. Side springs are unnecessary.

Fully insulated, frame not grounded and at no time carries current. Phosphor bronze scraping contacts. Self forming binding posts take any size wire and facilitate connecting. For 1/2-inch hole.

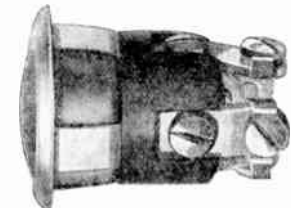
Standard finish, nickel.  
Standard package, 10.

No. 622..... each \$ .90



## No. 265 Return Call Edwards Push Buttons

The frame is not grounded. A return signal to signify that call has been heard may be installed, using three wires instead of the usual four. For 3/4-inch hole. Std. pkg., 1.  
Price, No. 265..... each \$1.90



## Edwards Quick-Make Quick-Break Pushes

*N. E. C. Standard*



No. 84

**No. 84 High Voltage Push**  
1 Amp., 125 V.; 1/2 Amp., 250 V.  
Requires a 27/32-inch hole.

Standard finish, nickel plate. Brush brass, no extra charge. Other finishes at extra cost.  
No. 84..... each \$2.65



No. 840

**No. 840 Pendant Type**  
This is the complete No. 84 screwed into a black bakelite shell.  
No. 840..... each \$4.50

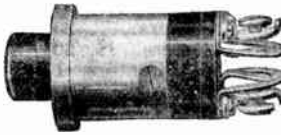
**No. 841 Weatherproof Type**  
Of special construction for extra weatherproof installation.

Standard finish of push and plate is bronze. No extra charge for brass. Other finishes at slight additional cost.

Rubber gasket for use between plate and wall furnished.  
No. 841..... each \$5.60

## Edwards High Voltage Push Buttons

*Schedule E*



A quick break push with heavy contacts.  
Standard finish, nickel; brush brass at no extra charge.

Cat. No.	Voltage	Description	Std. Pkg.	Wt. Oz.	Price Each
85	110	Standard Type, Fits 3/8-Inch Hole....	10	1	\$2.40
85A	220	Standard Type, Fits 1 1/8-Inch Hole...	1	3	6.20
85P	110	Escutcheon Type, Fits 3/8-Inch Hole..	1	3	3.15
85AP	220	Escutcheon Type, Fits 1 1/8-Inch Hole	1	5	6.95
85L	110	Locknut Type, Fits 3/8-Inch Hole....	10	3	2.65
85C	110	Closed Circuit Type, Fits 1 1/8-Inch Hole.....	1	3	7.85
850	...	Hard Rub. Bushing for No. 85.....	1	1	1.40
850A	...	Hard Rub. Bushing for No. 85A.....	1	1	1.65

## Edwards 4-Contact Push Buttons

*Schedule E*

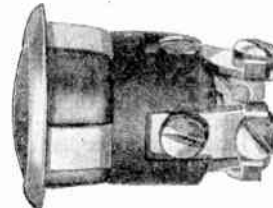
**No. 260**

Will close 3 circuits at once. For use where annunciators, bells and other devices are to be operated at same time but it is not desirable to operate them in multiple. By strapping contacts it is often used on single circuits to obtain additional current carrying capacity of multiple contacts. Fits 3/4-inch hole. Phosphor bronze springs.

Standard finish, nickel; brush brass, no extra charge.  
Price, No. 260, Weight 2 Ounces..... each \$1.40

**No. 260C**

Same as No. 260. Closed circuit; for 3/4-inch hole.  
Price, No. 260C, Weight 2 Ounces..... each \$2.05



## Edwards Flush Push Escutcheons

*Schedule E*

For use on plaster or where larger than the midget push is required. The iron plate is first secured to the wall. There being a number of screw holes, it is always possible to engage a latch. The brass plate is then placed over the iron plate and the push button pressed into place.

The spring clips on side of button grip the iron plate securely, holding the button and top plate in place.

Standard finish, nickel; brass at no extra charge.

Standard package, 25. Weight, 12 ounces.



Price, No. 60, For 5/8-Inch Push..... each \$ .30  
Price, No. 61, For 3/4-Inch Push..... each .30



**Faraday Perfection Midget Push Buttons**

Made in 5/8 and 3/4-inch sizes, fully insulated. With self-cleaning wiping contacts of phosphor-bronze and terminal lugs. Shells of buttons carry no current, permitting mounting in metal.

Buttons have 4 spring clips, guaranteeing firm locking in proper size holes—either 5/8 or 3/4 inch.



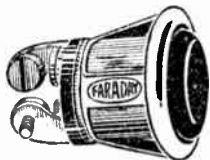
**Flat-Top Pattern, 5/8-Inch Standard**

Cat. No.	Each	Description	Std. Pkg.	Sched.
5-A	\$.38	Pearl Centers	50	E
5-B	.50	Black Centers	20	E

**Raised-Center Pattern, 5/8-Inch Standard**

Extreme height of center above level of edge is 1/8 inch, and from that, sloping off to level of rim.

Can be furnished with yellow or other standard colored centers at no additional charge, if so specified.



Cat. No.	Each	Description	Std. Pkg.	Sched.
8-A	\$.44	White Centers....	20	E
8-B	.44	Black Centers....	20	E
8-C	.44	Blue Centers....	20	E
8-D	.44	Red Centers....	20	E
8-E	.94	Luminous Centers	1	T
9-A	.65	Black Centers, Protruding 3/16"	10	E



**3/4-Inch Standard**

Cat. No.	Each	Description	Std. Pkg.	Sched.
7-A	\$.75	Pearl Centers	20	E
7-B	.87	Black Centers	20	E

**3/4-Inch Size, with Bakelite Body, Extra Heavy Contacts**

With solid molded bakelite bodies in which metal inserts are securely anchored.

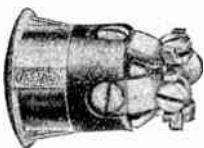
Cat. No.	Each	Description	Std. Pkg.	Sched.
16-A	\$1.40	Black Centers.....	1	T
16-B	1.40	White Centers.....	1	T
16-C	2.05	Black Centers, Closed-Circuit..	1	T

**3/4-Inch Size, Special Purpose, with Bakelite Body, Extra Heavy Contacts**

No. 11-A buttons will close 3 circuits at once; useful where bells, annunciators and other devices are to be operated at same time, but where it is not desired to operate them in multiple. By strapping the contacts it is often used on single circuits to obtain the additional current carrying capacity of multiple contacts.

No. 15-A buttons are made so that they open one circuit and close another. For return-call systems using two common wires and one return they are invaluable.

With black centers. Standard packages, 1.



Cat. No.	Each	Description	Sched.
11-A	\$1.40	4-Contact Open-Cir....	T
12-A	2.05	4-Contact Closed-Cir....	T
13-A	2.05	3-Contact Closed-Cir....	T
14-A	1.40	3-Contact Open-Cir....	T
15-A	1.90	Return-Call.....	T

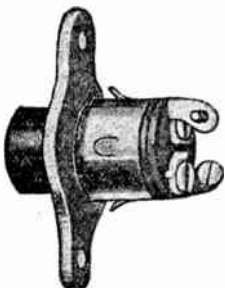
**With 5/8-Inch Escutcheon**

Fills the requirements where a flange mounting is necessary.

No. 10-B has an etched circular nameplate with lettering around the button reading "To Signal Chauffeur—Press This Button." Other lettering supplied to order.

Polished nickel or satin-brass finishes.

Standard package, 10.



Cat. No.	Each	Description	Sched.
10-A	\$.90	Black Centers	E
10-B	On App.	Pearl Centers	E

**Edwards Push Button Plates**

Schedule E

**No. 157 Plates**



No. 157D

Diamond or square. For 5/8 or 3/4-inch push. Bevel edge, drilled for one button.

No. 157D (diamond) size between points is 2 1/8 x 3 1/16 inches. No. 157S (square) size, 1 7/8 inches.

When ordering, state size of push to be used.

Assortment permitted to make standard package.

A 5/8-inch hole is furnished unless otherwise specified.

Standard finish is nickel; brass at no extra charge. Standard package, 10. Weight, 1 7/8 pounds.

Price, No. 157.....each \$.60

**No. 158 Switch Box Plates**

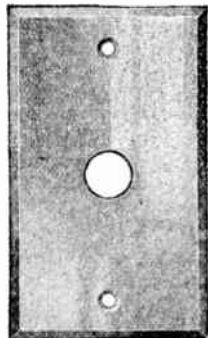
For standard switch box. Drilled for 1, 2 or 3 buttons, 5/8-inch and 1 or 2 buttons 3/4 inch. Screw hole centers, 3/16 inches.

Machine screws furnished. Price does not include buttons.

In ordering, state size of buttons to be used. A 5/8-inch hole will be drilled unless otherwise specified.

Standard finish of metal plate is nickel; brass at no extra charge.

Standard package, 1. Weight, 2 ounces.

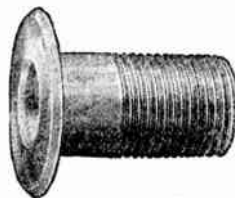


Metal Plates

No. 158

Price, 1-Button.....each \$.35  
 Price, 2-Button.....each .50  
 Price, 3-Button.....each .75  
 Add for Bakelite Plate......25

**No. 262 Edwards Conduit Push Buttons**

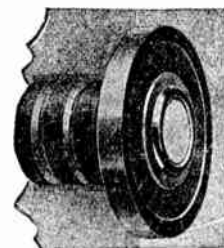


Furnished complete with attachment as illustrated, to fit 1/2-inch conduit. The attachment is so made as to allow the installation to be vapor proof and is used by hotels and apartment houses for bathrooms, etc. Inside the threaded brass pipe is a vertical rod which enables the attachment to be screwed on to conduit with a pair of pliers, piece of slotted pipe, etc., eliminating the use of a Stilson wrench. A special adaption of the No. 621 push, with a wider flange and other features arranged for this attachment, is used. This is numbered 621C.

Standard finish, nickel. Standard package, 1.

No. 262, Complete.....each \$4.00  
 No. 621C, Push Button Only.....each 2.00

**No. 261 Edwards Flush Push Stone Escutcheons Only**



No. 261 Stone Escutcheon is a plain flanged casting for cementing into stone or tile work.

Drilled for 3/4-inch push. The No. 260 is recommended.

On this escutcheon the standard finish is Bauer Barff.

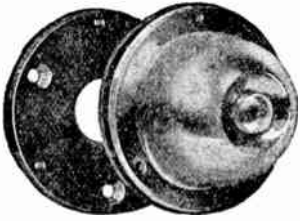
Standard package, 1.

No. 261.....each \$3.50



## No. 1786 Edwards Watertight Pushes

Schedule T



For surface mounting. Solid cast polished brass finish. Slow break type, for low voltage. Rubber gaskets make case watertight; pigskin diaphragm covers center. Has silver contacts.

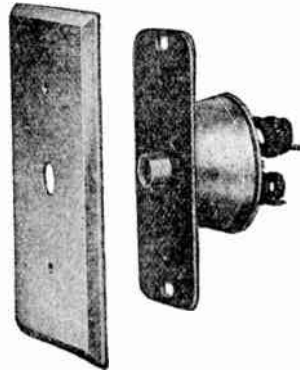
Diameter of base  $2\frac{3}{8}$  inches; body  $1\frac{5}{8}$  inches. Depth,  $1\frac{3}{16}$  inches.

Standard package, 1; shipping weight, 8 ounces.

No. 1786.....each \$3.50  
 No. 1786-C, Conduit Plate Threaded for  $\frac{1}{2}$ -Inch Conduit.....each 5.50

## No. 1787 Edwards Flush Watertight Pushes

For Low Voltages



Complete contact mechanism enclosed in cast brass shell covered with pig-skin diaphragm. This is tightly fastened to subplate with bronze plunger protruding through subplate. Wire leads are brought out through tight bushings.

Complete unit is watertight.

Fits any standard single gang switch box or fitting.

Gasket furnished for use between face plate and wall.

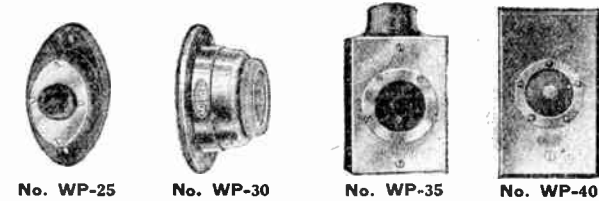
Complete with face plate. Standard finish, bronze.

No. 1787.....each \$5.60

## Faraday Watertight Push Buttons

Surface and Flush Types

Schedule T



No. WP-25

No. WP-30

No. WP-35

No. WP-40

These push buttons are of the diaphragm pattern having a waterproofed pigskin diaphragm over the center making it impossible for water or fumes to penetrate to the mechanism which is 100 per cent bakelite insulated.

Dependable for outside of buildings and places where dampness and water are a menace.

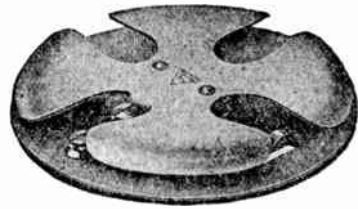
Nos. WP-25, WP-30, WP-40 and WP-55 furnished with rubber gaskets for mounting.

Standard finish, statuary bronze. For polished chromium, add \$1.00 to list. Other special finishes, on application. Standard package, 1.

Cat. No.	Description	Each
WP-25	Surface Pattern, Polished Bakelite Case....	\$3.00
WP-30	Surface Pattern, Heavy Bronze Case with Screw-Top-Front.....	3.50
WP-35	Surface Conduit Pattern, Solid Brass Front Plate, Heavy Cast Iron Back-Box Drilled and Tapped for $\frac{1}{2}$ -Inch Conduit.....	7.50
WP-40	Flush Switch Box Pattern, Solid Brass Front Plate, Fits Standard Single-Gang Switch Box (Switch Box Not Included in Price)..	5.60
WP-50	Surface Pattern, Heavy Bronze Case with Screw-Top-Front with Conduit Plate Attached, Drilled for $\frac{1}{2}$ -Inch Conduit.....	5.50
WP-55	Surface Pattern, Same as WP-30 but Mounted on Single-Gang Switch Plate.....	5.60

## No. 290 Dixie Floor Treads

Schedule E



Double heavy brass contact plates, felt covered bottom

Standard package, 10.

Price, No. 290.....each \$1.50

## No. 206 Edwards Table Clamps



May be used in connection with floor push or wall plug. Button and contact built in to spring clamp base. Wire connections easily made. Nickel finish.

Cat. No.	Std. Pkg.	Price Each
206	10	\$1.25

## No. 235 Edwards Floor Push Buttons



The No. 235 Floor Push Button is of an entirely new construction, more substantial, smaller and neater than previous designs.

Equipped with removable plug and extension attachment for connecting flexible cord with lamp, etc.

Brush brass finish.

Standard package, 10; weight, 2 pounds.

No. 235.....each \$9.95

## Edwards Push Button Plates

Schedule E

### No. 158-235 Wall Plate and Plug



No. 158-235

Fits a standard switch box. Standard finish is brush brass; nickel at no extra charge.

Standard package, 1. Weight, 5 ounces.

Price, No. 158-235.....each \$1.60

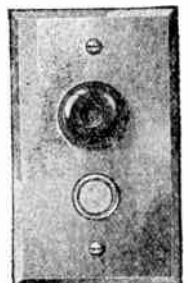
## No. 204 Wall Plate

With plug and push. Fits a standard switch box. Equipped with No. 620 push and No. 235 detachable extension plug.

Six feet of flexible cord with pear push attached, furnished if specified, for which add to price, \$1.75.

Standard finish is brush brass; nickel at no extra charge. Standard package, 1.

Price, No. 204, Weight 6 Ounces.....each \$3.00



No. 204

**Edwards Round Bronx Push Buttons**



Has a black composition center. The mechanism is insulated and is recessed to allow the use of No. 14 wire. Standard finish, satin brass. Standard package, 100.

No. ....	600	603
Diameter .....	inches 2 1/4	1 3/4
Each .....	\$ .15	.15

**No. 606 Edwards Bronx Push Buttons**

*Schedule E*



A one-piece type, all metal construction. Size, 1 3/8 x 2 3/8 in. Finished in satin brass. Other finishes at increased prices. In individual boxes. Standard package, 20; weight, 3 1/2 pounds.

Price, No. 606 ..... each \$ .25

**Edwards Bronx Card Holder Push Buttons**



No. 601

An all-metal, one-piece type push button. Card racks are arranged so that a slot for inserting card is at each end of rack.

Mechanism is insulated and recessed to allow use of No. 14 wire and still leave room between screws and wall. Wire is fastened directly to same screw that holds one side of contact spring; pushing the button makes a contact on one screw only.

Standard finish, satin brass.

Packed with screws in individual boxes.

Cat. No.	Each	Description	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.
601	\$.25	Single Card Holder.....	2 1/2 x 2 1/4	50	5
602	.45	Double Card Holder.....	2 x 4 3/8	20	8 1/2

**No. 605 Edwards Bronx Pushes**

This is an all-metal 1-piece type push, of excellent construction, well insulated.

Size, 1 1/8 x 3 1/4 inches.

Standard finish is satin brass. Other finishes at increased prices.

Packed, with screws, in individual boxes for convenient shelf use.

Standard package, 20.

Weight, standard package, 3 3/4 pounds.



Price, No. 605 ..... each \$ .35

**No. 67 Edwards Bakelite Pear Pushes**

*Schedule E*



Keeps its finish indefinitely, will not warp, check or crack. With No. 620 push. Standard package, 10, one color.

No. 67, Black, Oak or Mahogany. each \$ .60  
No. 67, White Enamel. .... each .75

**No. 604 Edwards Bronx Plate Type Push Buttons**



The dimensions of the No. 604 push are small enough to allow its use in many places where the common plate type of push is too large to be adaptable. It is 3 5/8 inches long and 1 1/8 inches wide.

The mechanism is entirely insulated and is recessed to allow the use of No. 14 wire and still leave plenty of room between the screws and the wall, there being no chance of grounding. The wire is fastened directly to the same screw that holds one side of the contact spring; pushing the button makes a contact on one screw only, thereby assuring a positive contact. Standard finish, satin brass. Standard package, 20.

Price, No. 604, Bronx ..... each \$ .35

**No. 609 Edwards Bronx Push Buttons**

*Schedule E*

This push button is of excellent construction and is well insulated. All-metal, one-piece type.

Standard finish is satin brass. Other finishes at increased prices.

Size, 2 x 4 1/2 inches.

Packed in individual boxes, with screws.

Standard package, 20. Weight, 8 pounds.

Price, No. 609 ..... each \$ .40



**No. 610 Edwards Bronx Pushes**

*Schedule E*



This push is of the all-metal, one-piece type. It is of excellent construction, well insulated.

Packed, with screws, in individual boxes for convenient shelf use.

Standard finish is satin brass. For oxidized copper, add 5 cents each list. For all other commercial finishes, add 10 cents each to list. Satin brass and oxidized copper can be shipped from stock.

Size, 1 9/16 x 6 3/4 inches. Standard package quantity, 10. Weight of standard package, 1 pound.

Price, No. 610 ..... each \$1.75

**No. 650 Edwards 1-Piece Forged Brass Push Buttons**



A solid forged brass push button. Mechanism is securely riveted to solid brass case, making the push all one piece. Entirely insulated and can be mounted on metal trim. Oval head brass wood screws, 3/4-inch No. 6, are furnished. Height, 3 3/8 inches. Width, 1 1/8 inches. Depth, 5/8 inches. Standard package, 10.

No. 650, Standard Finish Brush Brass with Antique (Black) Mat.....	each	\$1.10
No. 650-A, Polished Brass.....	each	1.15
No. 650-B, Verde Antique.....	each	1.20
No. 650-C, Bauer Barff (Black).....	each	1.20
No. 650-D, Swedish Iron.....	each	1.25
No. 650-E, Polished Bronze.....	each	1.25
No. 650-F, Polished Copper.....	each	1.25
No. 650-G, Chromium.....	each	1.75



## No. 9 Edwards Door Openers

Economy, Mortise Type, Solid Nose

Schedule T

Made of heavy pressed steel, heavily brass plated. Used extensively for apartments.

Fits same size mortise as same shape openers of other manufacturers. Width,  $3\frac{5}{8}$  inches; depth,  $1\frac{3}{4}$  inches; thickness, 1 inch; nosing opening,  $1\frac{3}{8}$  inches; face plate,  $5\frac{1}{8} \times 1\frac{1}{4}$  inches.

Price includes No. 89 pushout spring.

May be used on either right or left hand doors. Regular resistance is two ohms.

Special resistance up to 20 ohms, add to price \$1.00; 21 to 50 ohms, \$1.25; 51 to 75 ohms, \$1.50.

Standard package, 50.



No. 9.....each \$3.00

## No. 154 Edwards Door Openers

Mortise Type, Roller Nose

This type is suitable for heavy doors. It requires a smaller mortise than the Economy.

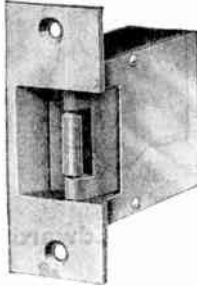
Width, 2 inches; depth,  $2\frac{7}{8}$  inches; thickness,  $1\frac{1}{8}$  inches. Nosing opening,  $1\frac{1}{4}$  inches. Face plate,  $1\frac{1}{4} \times 3\frac{3}{8}$  inches. Brass finish.

Price includes No. 79 pushout spring.

Can be supplied with a release check permitting the use of door opener where air checks are employed; add to price, \$2.00.

May be used on either right or left hand doors. Regular resistance is two ohms. Special resistance up to 20 ohms, add to price, \$1.00; 21 to 50 ohms, \$1.25; 51 to 75 ohms, \$1.50. Standard package, 10.

Price, No. 154.....each \$5.65



## No. 153 Edwards Door Openers

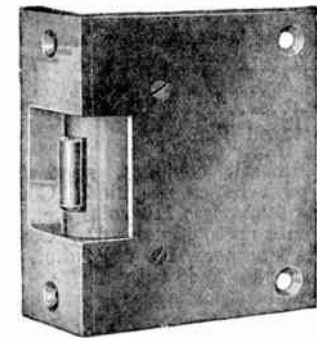
Plate Type, Roller Nose

Designed for doors too thin to take a mortise. Brass finish.

Width  $1\frac{1}{4}$  inches. Depth  $3\frac{7}{8}$  inches. Nosing opening  $1\frac{1}{4}$  inches. Face plate  $1\frac{1}{4} \times 3\frac{3}{8}$  inches. Side plate  $3\frac{3}{8} \times 2\frac{3}{4}$  inches.

Price includes No. 79 Push-out Spring.

Standard package, 1.



Price, No. 153.....each \$8.50

## No. 1541 Edwards Mortise Type Door Openers

Schedule E

Has roller nose. Face plate is extended to provide space for mortise for dead bolt.

When ordering, a sketch or template must be furnished to show exact location of dead bolt and screw holes. There cannot be less than  $\frac{5}{16}$  inch space between nosing and dead bolt openings. If no sketch is sent, standard door opener, as illustrated, will be furnished.

Height, 2 inches; depth,  $2\frac{7}{8}$  inches; thickness,  $1\frac{1}{8}$  inches. Nosing opening,  $1\frac{1}{4}$  inches; face plate,  $1\frac{1}{2} \times 6\frac{3}{8}$  inches.

Finish, brass.

Standard package, 1. Weight,  $1\frac{1}{4}$  pounds.

Price, No. 1541.....each \$10.30



## Faraday Control Cabinets for Burglar Alarm Systems

Surface Pattern

Schedule D



Cat. No. BO-373

Faraday Burglar Alarm Systems are in demand for private homes, country homes and estates and business establishments.

Faraday Burglar Alarm Control Cabinets are highly developed, scientific master-control units, performing functions that are invaluable for the protection of person and property.

Master control cabinets have, mounted on instrument panels, all the necessary relays, instruments, etc., to give an alarm by ringing bells, sounding sirens, etc., switching on interior lights (if so specified) floodlighting the outside of building or grounds, either in the entire protected area or any selected section thereof, etc.

At slight additional cost, relay control switches can be mounted on panel, so that by special arrangement with police department and telephone exchange, help may be automatically summoned.

Closed-circuit cabinets are furnished with electric-reset indicators.

Open-circuit cabinets are furnished with hand-reset indicators.

Standard finish: White enamel, golden oak, walnut or mahogany on steel will be furnished at no additional charge if so specified.

### With Automatic Clock-Control

Cat. No. BC-25 Closed-Circuit Type with Electric-Reset

No. of Sections.....	Drops			
	6	8	10	12
Cat. No. BC-25.....each	\$525.00	625.00	725.00	825.00
Add for Each Additional Section.....	\$50.00			

Cat. No. BO-373 Open-Circuit Type with Gravity Drops

No. of Sections.....	Drops			
	6	8	10	12
Cat. No. BO-373.....each	\$300.00	330.00	360.00	390.00
Add for Each Additional Section.....	\$15.00			

### Without Automatic Clock-Control

Cat. No. BC-259 Closed-Circuit Type with Electric-Reset

No. of Sections.....	Drops			
	6	8	10	12
Cat. No. BC-259.....each	\$270.00	340.00	410.00	480.00
Add for Each Additional Section.....	\$30.00			

Cat. No. BO-3730 Open-Circuit Type with Gravity Drops

No. of Sections.....	Drops			
	6	8	10	12
Cat. No. BO-3730.....each	\$190.00	220.00	250.00	280.00
Add for Each Additional Section.....	\$15.00			

For flush cabinets add 20 per cent to above lists.

In addition to the audible alarm which is regularly furnished, all of the above burglar alarm control cabinets can be furnished with relay control switches to close a 110-125-volt electric lighting circuit thereby lighting a number of incandescent lamps.

For 110-125-Volt Relay Maximum Capacity of Contactors 125 Watts, Add to List Price..... \$33.00

For 110-125-Volt Relay Maximum Capacity of Contactors 500 Watts, Add to List Price..... 55.00

For 110-125-Volt Relay Maximum Capacity of Contactors 1000 Watts, Add to List Price..... 80.00



**Edwards Burglar Alarm Springs**

*Schedule E*

Window springs should be placed in the frame several inches above the lower end of the upper sash—and the same distance below the upper end of the lower sash. Each sash should be mortised so that the nosing of the spring will be set in the recess when the window is closed. The mortise should be continued (beyond the necessary point) to permit the opening of the window for ventilation. It is advisable (although not necessary) that this system of installation be followed. Without the mortise anyone trying to enter the house and knowing of the window springs can easily open the window gradually, and hold the spring depressed with the finger.

The Edwards Springs when used properly as described are classified as follows:

Open circuit window springs—nosing in normal position contact is broken.

Closed circuit window springs—nosing in normal position contact is established.

Open circuit door springs—plunger in normal position contact is established.

Closed circuit door springs—plunger in normal position contact is broken.

**Open Circuit Springs**



No. 28



No. 30

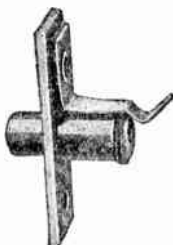


No. 32

No.	Description	Size Plate Inches	Standard Package	Weight Pounds	Price Each
28	Window	2 1/2 x 2 1/2	50	2 3/4	\$ .54
30	Window	3 3/8 x 5/8	50	5 1/2	.85
32	Transom	2 1/4 x 1	25	3 1/2	1.55



No. 34



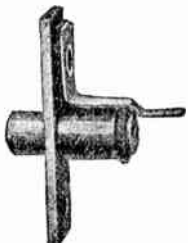
No. 38



No. 236

No.	Description	Size Plate Inches	Standard Package	Weight Pounds	Price Each
34	Door	2 x 5/8	50	3	\$ .35
38	Make and Break	2 x 5/8	50	3	.46
236	Door Trip	2 x 5/8	25	2	1.03

**Closed Circuit Springs**



No. 39



No. 42



No. 42A

No.	Description	Size Plate Inches	Standard Package	Weight Pounds	Price Each
30C	Window	3 3/8 x 5/8	50	5 1/2	\$1.03
39	Door	2 x 5/8	50	3	.46
32C	Transom	2 1/4 x 1	50	3 1/2	1.95
42	Safe (No Plate)	.....	50	2 1/2	.48
42A	Plate for No. 42	1 3/4 x 3/4	50	1 1/4	.20

Assortment of 100, all styles to make standard package.

**Edwards Burglar Alarm Traps**

*Schedule E*



Installed with cord or wire stretched across entrances, open spaces or attached to doors, windows, etc. Slightest movement of cord or wire operates trap which makes and holds contact causing continuous ringing of bell without additional devices.

**Covered Type**

Standard package, 10. Can be assorted. No. 27, For Open Circuit..... each \$1.50

No. 27-C, For Closed Circuit..... each 1.50

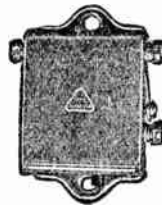
**Uncovered Type**

Standard package, 20. Can be assorted. No. 29, For Open Circuit..... each \$3.36

No. 29-C, For Closed Circuit..... each .36

**Edwards Constant Ringing Drops**

*Schedule T*



Especially designed for use in burglar alarm systems. With momentary closing of protective circuit this device causes bells to ring continuously, irrespective of subsequent opening of protective circuit. Plunger resets mechanism.

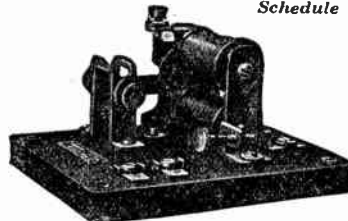
No. 26-B for ordinary use, 8-12 volts a.c., 6-8 volts d.c. No. 26-C recommended for battery systems where alarm may ring for several hours. Cuts own magnet out of circuit. Standard up to 24 volts a.c. or d.c. Standard package, 1.

No. 26-B.....each \$2.70

No. 26-C.....each 2.70

**Edwards Burglar Alarm Relays**

*Schedule T*

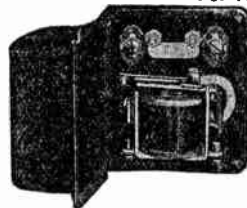


**No. 1238 Open Type For D.C. Only**

Adjustable for open or closed circuit operation. Pure hard drawn silver contacts. Contacts 1 ampere; 250 ohms recommended for closed circuit systems. Standard package, 1.

20 Ohms.....	each \$6.00
250 Ohms.....	each 7.00
251 to 600 Ohms.....	each 8.00

**No. 1239 Enclosed Type For A.C. or D.C.**



A small, compact, open or closed type as specified. Contacts 3 amperes 110 volts a.c., 6 amperes up to 48 volts d.c. Contacts 1 ampere, 110 volts d.c., 2 amperes up to 48 volts d.c. Standard package, 1.

8-24 Volts.....	each \$6.00
25-48 Volts.....	each 6.75
110 Volts.....	each 8.00

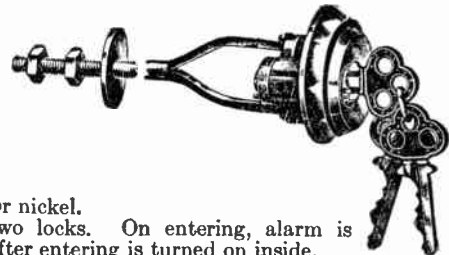
**Edwards Burglar Alarm Lock Switches**

No. 95.—Lock switches to be placed on the outside of the door so persons having key may enter without giving alarm. Polished brass or nickel.

No. 95A.—Two locks. On entering, alarm is turned off and after entering is turned on inside.

No. 95B.—Same as No. 95, with rod to go through door, fastened by nuts inside.

Price, No. 95, Standard Package, 1.....	each \$6.50
“ “ 95A “ “ 1.....	“ 13.00
“ “ 95B “ “ 10.....	“ 7.95
“ Extra Keys, “ “ 1.....	“ .80



## Graybar Inter-Phone Systems

### System No. 1

#### Selective Ringing—Selective Talking

For use in business organizations, industries, stores, institutions, etc., where frequently, more than one conversation will take place at the same time, and where instantaneous connections without loss of time are necessary.

By pressing a button each station can selectively ring and talk with any other station without disturbing the rest of the stations in the system and as many separate conversations can be carried on simultaneously as there are pairs of Inter-Phones. For example, in a system of six Inter-Phones, three conversations can be carried on at the same time.

For each station in the system, one push button key is required in each Inter-Phone.

Available in standard sizes of 6, 12, 16, 20, and 24 buttons; and in Nos. 1324 and 1355 Wall Type Inter-Phones, No. 6016 Desk Sets, and No. 6016HR Hand Sets.

#### Cable

For connections between the various stations, cable specially designed for Inter-Phones can be supplied. This cable includes the necessary number of wire conductors (two pairs for battery leads and one pair for each station in the system) and is furnished in three different types to suit various locations and conditions:

No. of Stations.....	6	12	16'	20	24
No., Fireproof Braid....	134B	141B	157B	158B	136B
No., Brown Cotton Braid	155B	156B			
No., Lead Covered.....	134B	141B	157B	158B	136B

These cables are listed in detail elsewhere.

#### Cable Terminals

A cable terminal should be used wherever a junction is to be made between cables. For example: Where an outside lead-covered cable is connected to an interior cable, or wherever a branch is taken off from the main cable. In cases where the cable can be run direct to the Inter-Phone, no cable terminal is necessary. The number of cable terminals required should be determined by the installer. For 6 and 12-button systems use the No. 19A cable terminals. For 16, 20 and 24-button systems use the No. 19B cable terminals.

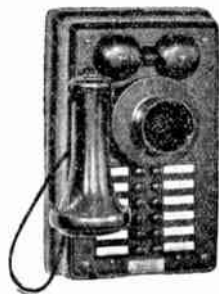
#### Batteries

Not more than 12 dry cells will be necessary for operating the system. (Five cells for the talking circuit; 4 to 7 cells for the ringing circuit, depending upon length of line.)

A Recti-Filter may be used for battery supply.

### No. 1324 Type Wall Inter-Phones

#### Surface Mounting



An all metal set having a hinged face plate, movable transmitter and hand receiver. The face being hinged, makes it possible to easily inspect all connections and apparatus without disturbing the installation.

Black with nickel trimmings.

Code No.	No. of Buttons	Height Inches	Width Inches	Depth Inches
1324C 6	6	10	6 <sup>3</sup> / <sub>8</sub>	3
1324C-12	12	10	6 <sup>3</sup> / <sub>8</sub>	3
1324C-16	16	14 <sup>5</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>8</sub>	3
1324C-20	20	14 <sup>3</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>8</sub>	3
1324C-24	24	14 <sup>3</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>8</sub>	3

### No. 1355 Type Wall Inter-Phones

#### Flush Mounting



A flush mounting set having a steel face plate on which is mounted all of the talking and signalling apparatus and a sheet steel outlet box arranged for 3/4-inch conduit. The outlet box can be separated from the set and built into the wall during the construction of the building.

The face plate is hinged at the bottom, making all terminals easily accessible for installation or inspection.

Dull black with nickel trimmings.

Code No.	No. of Buttons	Height Inches	Width Inches	Depth Inches
1355C-16	16	14 <sup>1</sup> / <sub>2</sub>	6 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
1355C-20	20	14 <sup>1</sup> / <sub>2</sub>	6 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
1355C-24	24	14 <sup>1</sup> / <sub>2</sub>	6 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>

## Graybar Inter-Phones

### For System No. 1

#### No. 6016 Type Desk Set

Code No.	No. of Buttons	Desk Stand	Cord Feet
6016D- 6	6	1140BE	5 <sup>1</sup> / <sub>2</sub>
6016D-12	12	1140BE	5 <sup>1</sup> / <sub>2</sub>
6016D-16	16	1140BE	5 <sup>1</sup> / <sub>2</sub>
6016D-20	20	1140BE	5 <sup>1</sup> / <sub>2</sub>
6016D-24	24	1140BE	5 <sup>1</sup> / <sub>2</sub>



#### Hand Sets



No. 6038C-12

The hand set is made of black molded Bakelite.

The switch-hook box can be installed on the side of the desk, on the wall, or any vertical surface.

No. 6016HR-12

No. 6016HR TYPE			No. 6038C TYPE		
Code No.	Hand Set	Hook	Code No.	Hand Set & Switch-Hook Box	No. of Buttons
6016HR- 6	1003R	141A	6038C- 6	1038C	6
6016HR-12	1003R	141A	6038C-12	1038C	12
6016HR-16	1003R	141A	6038C-16	1038C	16
6016HR-20	1003R	141A	6038C-20	1038C	20
6016HR-24	1003R	141A	6038C-24	1038C	24

#### No. 6016CH Cradle Type Hand Sets



The cradle or mounting for supporting this hand set consists of a metal base finished in black.

Code No.	No. of Buttons	Hand Set and Cradle	Cord Feet
6016CH- 6	6	1016CH	6
6016CH-12	12	1016CH	6
6016CH-16	16	1016CH	6
6016CH-20	20	1016CH	6
6016CH-24	24	1016CH	6

#### Key Box

The key box for these Inter-Phones is finished in dull black. Cable entrances are provided at bottom and ends of the box.

No.	328C-6	328C-12	328C-16	328C-20	328C-24
Width.....in.	5	5	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>
Length.....in.	7 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	10 <sup>3</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>
Depth.....in.	2 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>
Button Cap...	6	12	16	20	24

#### Stranded Flexible Cables

Usually connected between key box and cable terminal. Furnished with silk-covered, mercerized-covered, and common cotton braid. If key box is mounted in stationary position, standard lead or braided Inter-Phone cable should be used.

Cord Code No.	416	428	436	444	452
No. Single Conductors.....	16	28	36	44	52
Used with Button Capacity.....	6	12	16	20	24



**Graybar Inter-Phone Outfits**

**Outfit No. 17**

This outfit consists of two No. 1003 type hand sets with all material required to install a simple intercommunicating system between two points not over 80 feet apart, and where the wire will be wholly indoors and not exposed to weather conditions or moisture. The material, in addition to the hand sets, consists of two connecting blocks with mounting screws, 80 feet of insulated twisted pair copper wire, 60 insulated nails for fastening wire, two hooks for holding hand sets, two bells, two battery connectors and illustrated installing instructions.

**Outfits Nos. 30 and 31**

Outfit No. 30 includes two surface wall No. 2527C-1 Inter-Phones and one No. 51H retardation coil in one box, but no installing or wiring material.

Outfit No. 31 includes two hand set Type No. 6043P Inter-Phones and No. 51H retardation coil in one box, but no installing or wiring material.

**Outfits Nos. 30A and 31A**

These outfits are for use where the wiring is to be run entirely under cover and not exposed to moisture or weather.

They include No. 30 and No. 31 Outfit respectively in one box and installing material in another box.

The installing material consists of 75 feet of insulated 3-conductor copper wire, two battery connectors, insulated nails, and illustrated installing instructions.

**Outfits Nos. 30B and 31B**

Outfits Nos. 30B and 31B are for use where the wiring is to be run in the open between or outside of buildings, and exposed to weather and moisture.

They include No. 30 and No. 31 Outfits respectively in one box, and installing material in another box.

The wiring material consists of 150 feet of outside 3-conductor copper wire, two brackets with screws, hooks and knobs to attach wires to building, two porcelain tubes to insulate wires when entering building, two battery connectors, 25 insulated nails for fastening wires inside building, and illustrated installing instructions.

**Graybar Inter-Phone Systems**

**System No. 11**

**Selective Ringing—Common Talking**

For use where conversations can be limited to one at a time. Each Inter-Phone is equipped with a number of push buttons for calling each other station in the system.

The wall type Inter-Phones can be furnished in capacities of 2, 3, 4, 6 and 8 buttons, accommodating 3, 4, 5, 7 and 9 stations respectively in a system. The desk and hand set Inter-Phones are furnished in capacities of 4 and 8 buttons, accommodating 5 and 9 stations respectively in a system.

No. of Buttons	WALL TYPE		Cradle Set	Hand Set
	Surface	Flush		
2	2527C-2	2539C-2	.....	.....
3	2527C-3	2539C-3	.....	.....
4	2527C-4	2539C-4	6044C-4	6034AZ or BG
6	2527C-6	2539C-6	.....	.....
8	2527C-8	2539C-8	6044C-8	6034BB or BH

NOTE.—Sets described in detail on other pages.

**Retardation Coil**

A No. 51H retardation coil must be ordered separately for installation near the battery of each system.

**Cables**

Cable especially designed for connection between the various stations can be furnished. This cable includes three common wires and one individual wire for each station.

No. of Stations.....	3 & 4	6 & 8
Code No., with Fireproof Braid.....	161B	162B
Code No., with Brown Cotton Braid.....	142B	.....
Code No., with Lead Covering.....	161B	162B

**Connecting Blocks**

Where a junction is to be made between cables, or wherever a branch is taken off the main cable, a connecting block should be used. In cases where the cable can be run direct to the Inter-Phone, the connecting block is not required.

**Batteries**

Five dry cells are required for the operation of this system, when the distance between the two stations farthest apart is 750 feet or less, and Inter-Phone cable, listed above, is used. On lines of greater length it is recommended that instead of increasing the number of battery cells to more than 5, larger wire be used. A Recti-Filter can be furnished for the battery supply in place of dry cells.

**Graybar Inter-Phone Systems**

**System No. 12**

**Master Station—Common Talking**

Consists of one centrally located "Master Station" Inter-Phone to which are connected other "Outlying Station" Inter-Phones.

The Master Station Inter-Phone is equipped with a number of push buttons; one for each outlying station in the system.

Outlying stations are equipped with one button for ringing the master station.

Only one conversation can be carried on at a time.

Capacity, one Master Station and from 2 to 8 outlying stations.

**Master Station**

No. of Buttons	Metal Wall Surface	Type Inter-Phones Flush	Cradle Set Inter-Phones	Hand Set Inter-Phones
2	2527C-2	2539C-2	.....	.....
3	2527C-3	2539C-3	.....	.....
4	2527C-4	2539C-4	6044C-4	6034AZ or BG
6	2527C-6	2539C-6	.....	.....
8	2527C-8	2539C-8	6044C-8	6034BB or BH

**Outlying Stations**

1	2527C-1	2539C-1	6044C-1	6042K
.	.....	.....	.....	*6042E
.	.....	.....	.....	6043E

\*No. 6042E is same as No. 6242K, but without face plate and wall box. For details see listing elsewhere.

**Accessories**

**Retardation Coil**

A No. 51H retardation coil must be ordered separately with each master station Inter-Phone and installed near the battery of the system.

**Wiring**

For connections between the outlying stations and the master station either cable or insulated wires can be used, depending largely upon the layout of the system. Three common wires are required throughout the system, and in addition, one individual wire from the master to each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable, and at all distributing and junction points, to install connecting blocks. From these connecting blocks separate wires can be run to the Inter-Phones.

The sizes of cable and the number of connecting blocks required should be determined in accordance with the installation instructions.

Cables and connecting blocks are described elsewhere.

**Batteries**

Five dry cells are required for the operation of this system when the distance between the master station and most distant outlying station is 750 feet or less and No. 22 A.W.G. wire (as in the case of Graybar cable) is used.

On lines of greater length it is recommended that instead of increasing the number of battery cells to more than five, larger wire be used. This should be determined in accordance with the installation instructions.

A Recti-Filter may be used in place of batteries.

NOTE.—Detailed information covering wiring diagrams, connection of wires and cables, connecting blocks, etc., can be found in our booklet, "Installing and Maintaining Inter-Phones," which will be furnished upon request.



## Graybar Inter-Phone Systems

### Master Annunciator System Nos. 12A and 12AC

#### 2-Way Ringing—Common Talking

Especially adapted for schools where the principal may call the teachers individually and the teachers can call the principal. Similar to the No. 12 system except that the master station includes an annunciator for identifying the calls from the outlying stations.

Only one conversation can be carried on at a time.

Capacity, one master station and 3 up to 20 or more outlying stations.

#### System No. 12A

The master station Inter-Phone includes a push button block having as many buttons as there are outlying stations, also one extra button for electrically resetting the annunciator drops.

Each outlying station Inter-Phone is equipped with a push button which signals the master station. This call will also be registered at the master station by the operation of the annunciator drop.

No. of Class-room Stations	Group Code	GROUP CODE NO. CONSISTS OF					ANNUNCIATOR CODE No. †Surface	ANNUNCIATOR CODE No. †Flush
		*Push Button Block No.	Cradle Set No.	Cable Terminal No.	Hand Set Surface	Flush		
8	8A	9030C	6044C-0	19A	403-8	409-8		
10	10A	9032C	6044C-0	19A	403-10	409-10		
12	12A	9034C	6044C-0	19A	403-12	409-12		
14	14A	9036C	6044C-0	19A	403-14	409-14		
16	16A	9038C	6044C-0	19A	403-16	409-16		
18	18A	9040C	6044C-0	19A	403-18	409-18		

No. of Buttons	METAL WALL TYPE		Cradle	HAND SET TYPE	
	Surface	Flush		Surface	Flush
1	2527C-1	2539C-1	6044C-1	6043E	6042K
..	.....	.....	.....	.....	6042E

#### System No. 12AC

System No. 12AC differs from System No. 12A in that a ring-all button is furnished in the push button block at the principal's station. This button will ring all stations simultaneously for school period purposes and for fire drills.

No. of Class-room Stations	Group Code	GROUP CODE NO. CONSISTS OF					ANNUNCIATOR CODE No. †Surface	ANNUNCIATOR CODE No. †Flush
		*Push Button Block No.	Cradle Set No.	Cable Terminal No.	Hand Set Surface	Flush		
10	10AC	9072C	6044C-0	19A	403C-10	409C-10		
12	12AC	9074C	6044C-0	19A	403C-12	409C-12		
14	14AC	9076C	6044C-0	19B	403C-14	409C-14		
16	16AC	9078C	6044C-0	19B	403C-16	409C-16		
20	20AC	9082C	6044C-0	19B	403C-20	409C-20		
24	24AC	9086C	6044C-0	19B	403C-24	409C-24		
26	26AC	9090C	6044C-0	2-19A	403C-26	409C-26		
30	30AC	9094C	6044C-0	1-19A, 1-19B	403C-30	409C-30		

#### Outlying Stations

Wall type sets only, equipped with 24-volt ringers.

No. of Buttons	1
Code No., Surface Mounting	2527AC-1
Code No., Flush Mounting	2539AC-1

\*The push-button block includes a 6-foot connecting cord.

†No. 403 Type furnished unless otherwise specified.

‡No. 6042E is same as No. 6042K, but without face plate and wall box.

#### Accessories

##### Retardation Coil

A No. 51H retardation coil must be ordered separately for installation near the battery of each system.

##### Wiring and Battery Requirements

Two wires common to all stations in the system and two individual wires for each outlying station.

System No. 12A requires a battery of five dry cells, connected in series, to furnish current for ringing and talking.

System No. 12AC requires a battery of dry cells or storage batteries to total 24 volts may be used for the ringing and talking battery supply.

## Graybar Inter-Phone Systems

### Master Annunciator Systems Nos. 12B and 12C

#### 1-Way or 2-Way Ringing—Common Talking

Provides for communication between a master station annunciator and a number of outlying stations.

The master annunciator is equipped with a hand set Inter-Phone, and can be obtained with or without push buttons.

#### System No. 12B—1-Way Ringing

The annunciator is without push buttons, enabling the outlying stations to ring the master station but the master station cannot ring the outlying stations.

#### System No. 12C—2-Way Ringing

The annunciator is equipped with push buttons, one for each outlying station, enabling the outlying stations to ring the master station and the master station to ring the outlying stations individually.

#### Master Station Annunciators

CODE NOS.		No. of Drops	CODE NOS.		No. of Drops
For No. 12B	For No. 12C		For No. 12B	For No. 12C	
1204B	1204C	4	1216B	1216C	16
1206B	1206C	6	1220B	1220C	20
1208B	1208C	8	1224B	1224C	24
1210B	1210C	10	1230B	1230C	30
1212B	1212C	12	.....	.....	..

A No. 1003D Hand Set must be ordered separately with each annunciator. This set is equipped with a 3-foot cord, and can be hung on the hook on the side of the annunciator.

#### Accessories

##### Wiring

For System No. 12B one wire, common to all stations in the system, and in addition, one individual wire from the master station to each outlying station.

For System No. 12C one wire, common to all stations in the systems, also two individual wires from the master station to each outlying station.

##### Batteries

Only one battery is required for the operation of the system. This should consist of three or four dry cells, where the distance between the master station and the farthest outlying station is 250 feet or less, and No. 22 A.W.G. copper wire is used. On lines of greater length it is recommended that instead of increasing the number of dry cells to more than four, larger wires be used.

A Recti-Filter may be used in place of batteries.

#### System No. 14

##### 2-Station Private Line

For use where only two stations are required and where the sets are distantly located from each other.

Either station can ring the other.

No. of Buttons	METAL WALL TYPE		Desk Sets	HAND SETS	
	Surface	Flush		Surface	Flush
1	2527C-1	2539C-1	6044B-1	6043P	6042AE *6042AF

\*No. 6042AF is same as No. 6042AE but without face plate and wall box.

#### Wiring and Battery Requirements

Only two wires are used for connecting the Inter-Phones.

A battery of three dry cells is required at each station to furnish current for talking and ringing if the length of line is less than 750 feet. If the length of the line is increased, additional dry cells are required at each station to insure satisfactory ringing. The following list indicates the additional dry cells required at each station:

Length of Line Between Stations	ADDITIONAL NUMBER OF CELLS FOR EACH STATION A.W.G. COPPER WIRE			
	No. 12	No. 14	No. 16	No. 18
750 to 1000 ft.	1	1	1	2
1000 to 1500 ft.	1	1	1	3
1500 to 2000 ft.	1	2	3	..
3000 to 4000 ft.	2	3	..	..
4000 to 5000 ft.	2	..	..	..
5000 to 6000 ft.	3	..	..	..

**Graybar Inter-Phone Systems**

**System No. 15**

**Code Ringing—Common Talking**

A simple and inexpensive system for small residences, warehouses, or stores where only a few stations are required. Only one conversation can be carried on at a time.

Each station is equipped with one push button which rings the bells at all the other stations.

The various stations are called by signalling each one with a different code ring; for instance, two rings for Station No. 2, three rings for Station No. 3, etc. If more than 6 stations are in service, signalling code mistakes are likely to occur. System No. 11 is recommended where the initial installation comprises more than 4 or 6 stations.

No. of Buttons	METAL WALL TYPE		Desk Sets	HAND SETS	
	Surface	Flush		Surface	Flush
1	2527C-1	2539C-1	6044D-1	6043CD	6042CD

**Accessories**

A No. 51H retardation coil must be ordered separately and installed near the battery of the system.

Four wires are required for connecting the Inter-Phones.

Five dry cells are required for the operation when the length of the line is 750 feet or less, and not more than four stations are to be used, connected by Nos. 20 or 22 A.W.G. copper wire. If more than four Inter-Phones are required or if the line is longer than 750 feet, larger wires should be used in accordance with installation instructions.

**Master Annunciator System No. 18C**

**Non-Interfering**

Provides for communication between a central or master station and a larger number of outlying stations, as follows:

The master station can selectively ring and talk with any of the outlying stations and the outlying stations can call the master station annunciator.

Communication can be arranged between any two outlying stations through the medium of one or two connecting cords at the master station.

No connection can be made between this system and a public telephone system.

An annunciator supervisory feature is provided to indicate the termination of a conversation between the outlying stations. Where a large number of connections are required between outlying stations, the lamp signal, Private Exchange Switchboard for surface or flush mounting, is recommended.

**Master Station Annunciators**

Annunciators regularly equipped with answering cord only. If inter-communication between outlying stations is desired, one or two pairs of connecting cords may be ordered.

A No. 1003K Hand Set must be ordered separately with each annunciator.

Code No.	No. Drops & Jacks	Ht. In.	Wdth. In.	Dpth. In.	Code No.	No. Drops & Jacks	Ht. In.	Wdth. In.	Dpth. In.
1810-C	10	15 3/8	11 1/4	5 1/4	1849-C	49	23 3/4	23 1/4	5 1/4
1814-C	14	15 3/8	14 3/4	5 1/4	1856-C	56	23 3/4	24 3/4	5 1/4
1816-C	16	15 3/8	17 1/4	5 1/4	1864-C	64	28 1/8	23 1/4	5 1/4
1820-C	20	15 3/8	18 3/4	5 1/4	1872-C	72	28 1/8	26 1/4	5 1/4
1825-C	25	19 3/8	17 1/4	5 1/4	1881-C	81	32 3/8	24 3/4	5 1/4
1830-C	30	19 3/8	18 3/4	5 1/4	1890-C	90	32 3/8	26 1/4	5 1/4
1836-C	36	19 3/8	21 3/4	5 1/4	1900-C	100	32 3/8	29 1/4	5 1/4
1842-C	42	23 3/4	20 1/4	5 1/4					

**Outlying Stations**

No. of Buttons	METAL WALL TYPE		Desk Sets	HAND SETS	
	Surface	Flush		Surface	Flush
1	2527C-1	2539C-1	6043D	6042D	*6042M

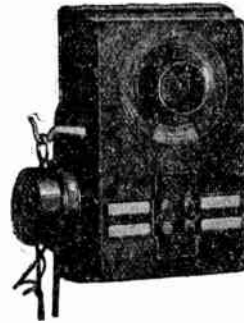
\*Same as No. 6042D, but with face plate and wall box.

**Accessories**

One wire, common to all stations in the system is required, and, in addition, two individual wires between the master and each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable and install cable terminals or connecting blocks at all distributing and junction points. From there, the installation can be continued by means of separate wires to the various outlying stations.

Five or more dry cells are required for operating the system. A Recti-Filter may be used in place of batteries.

**Graybar Inter-Phones**  
**Description of Metal Wall Type**  
**No. 2527C, Surface Mounting**



No. 2527C-4

The No. 2527C Type Inter-Phone has a surface mounting metal housing which contains all of the talking and signalling apparatus, also a metal backboard, which is furnished for mounting the set to the wall.

The housing of the set is of rugged construction, being formed of sheet steel and is equipped with hinge hooks which match up with slots in the base of the metal backboard. This arrangement permits fastening the backboard in place on the wall and then mounting the housing unit to it.

The hinge arrangement of this set enables the installer to swing down the housing unit from the backboard for making connections to the terminals; also to permit interior inspection of the set at any time after its installation.

The metal backboard is designed to permit the entrance of wires or cabling from either the top, bottom or center of the set; also, a metal guide ring is located near the cable entrance at the base of the backboard so that the connecting wires may be looped through this ring to hold them in place and provide a proper bending point when the housing is swung forward.

Durable dull black enamel finish with nickel trimmings.

Code No.	No. of Buttons	For Systems	DIMEN. HOUSING, INCHES		
			Height	Width	Depth
2527C-0	0	20 and 21	7 1/2	5	2 5/8
2527C-1	1	{ 12, 14, 15, } { 18, 20 and 21 }	7 1/2	5	2 5/8
2527C-2	2	20 and 21	7 1/2	5	2 5/8
2527C-3	3	11, 12, 20 and 21	7 1/2	5	2 5/8
2527C-4	4	11, 12, 20 and 21	7 1/2	5	2 5/8
2527C-6	6	11, 12, 20 and 21	7 1/2	5	2 5/8
2527C-8	8	11, 12, 20 and 21	7 1/2	5	2 5/8

**No. 2539C, Flush Mounting**



No. 2539C-2

The No. 2539C Type Inter-Phone has a flush steel face plate on which is mounted all of the talking and signalling apparatus, also a metal outlet box which is furnished for mounting the set in the wall.

The outlet box is of unique design in that metal aligning strips are fastened at the top and bottom front of the box so as to properly align the set after the face plate unit is fastened to the outlet box (in case the outlet box is installed out of plumb). It is equipped with adjustable ears for mounting it in the wall, the same as are furnished on standard sectional outlet boxes. Knockouts are provided

at both the top and bottom for the entrance of 1/2-inch conduit or connecting wires.

The face plate support for installer is an added feature of this set, consisting of a wire hook mounted on a small card with printed instructions for its use. This hook is for temporarily supporting the Inter-Phone face plate, of flush type sets, during installation, so that the wires may be readily connected to the terminals by the installer.

Durable dull black enamel finish with nickel trimmings.

Code No.	No. of Buttons	For Systems	DIMENSIONS, INCHES				
			FACE PLATE Height	FACE PLATE Width	OUTLET BOX Height	OUTLET BOX Width	OUTLET BOX Depth
2539C-0	0	20	9	5 5/8	7 1/2	4	2 5/8
2539C-1	1	{ 12, 14, 15, } { 18 and 20 }	9	5 5/8	7 1/2	4	2 5/8
2539C-2	2	20	9	5 5/8	7 1/2	4	2 5/8
2539C-3	3	11, 12, and 20	9	5 5/8	7 1/2	4	2 5/8
2539C-4	4	11 and 12	9	5 5/8	7 1/2	4	2 5/8
2539C-6	6	11 and 12	9	5 5/8	7 1/2	4	2 5/8
2539C-8	8	11 and 12	9	5 5/8	7 1/2	4	2 5/8

## Graybar Inter-Phones

### Description of Hand Sets

#### Selective Ringing—Common Talking

#### No. 6038 Type



This hand set unit was designed for installation at the side of a desk, on the wall, or any vertical surface. The set may be installed at one end, side or in the alcove of the desk; also recommended for residential purposes for mounting at the bedside, either on the bed or on the wall within reach of the bed.

Made of Bakelite, reinforced.

The switch-hook box contains a switch-hook unit for holding the hand set in place. This hook operates on the same principle as the standard telephone hook. A 4-foot cord connects the hand set to the switch-hook box.

Code No.	No. of Buttons	Hand Set & Switch Box	COMPOSED OF			For Use In System
			Connecting Block	Push Button Block	Apparatus Box	
6038A	0	1038A	2 No. 11A	.....	.....	1801 P.B.X.
6038B-1	1	1038B-1	12E	.....	.....	14 and 15C
6038C-1	1	1038C-1	2 No. 11A	.....	.....	12
6038C-4	4	1038CB	.....	104AC	35B	11 and 12
6038C-8	8	1038CB	.....	108AC	35B	11 and 12

#### No. 6034 Type



Code No.	No. of Buttons	HAND SET Code No.	Cord Ft.	COMPOSED OF			Bell No.	For Use In System
				Push Button Block	Apparatus Box	Connect-ing Block		
6034BG	4	1003AD	6	104AC	35B	.....	.....	11 & 12
6034AZ	4	1003AD	6	104AC	.....	8G	11B	11 & 12
6034BH	8	1003AD	6	108AC	35B	.....	.....	11 & 12
6034BB	8	1003AD	6	108AC	.....	8H	11B	11 & 12

## Graybar Inter-Phones

### Description of Hand Sets

#### Selective Ringing—Common Talking

The Inter-Phone transmitter and receiver are a part of the hand set. A bar marked Press to Talk mounted in the hand set handle is held down by the natural position of the hand while talking. When not in use, the hand set can be hung on a hook or laid down in any position. Finished in dull black.

#### No. 6043, Surface Mounting



Surface Mounting Apparatus Units (No. 383 Type) are equipped with an insulated base, black finished round metal cover and nickel hook.

Approximate size, 3 1/16 inches in diameter by 1 1/16 inches deep.

Code No.	No. of Buttons	HAND SET		Cord Feet	Apparatus Box	For Use in System
		Code No.	Code No.			
6043E	1	1003J	3	3	383J	12 & 12A
6043D	1	1003E	3	3	383J	12B & 18C
6043P	1	1003AB	3	3	383J	14 & 15C
6043R	0	1003AC	3	3	383H	*1801 P.B.X.

\*For use in systems A and B only of 1801 P.B.X.

#### No. 6042, Flush Mounting



Flush Mounting Apparatus Boxes (No. 382 Type) are intended to be set in the wall and are equipped with a brush brass finished face plate. These boxes consist of three parts—a Gem A Union sectional switchbox, an apparatus unit, and a face plate. The face plate is 4 1/2 x 2 3/4 inches; the wall box, 2 x 3 x 3 inches deep.

An important point to be observed is that wall box and face plate are the same as those used in electric light wiring for push button switches. Sets furnished either complete, including wall box and face plate, or minus these parts.

Code No.	No. of Buttons	HAND SET		APPARATUS (FLUSH TYPE)			For Systems
		Code No.	Cord Ft.	Code No.	Switchbox	Face Plate No.	
6042E	1	*1003G	3	382E	.....	.....	12 & 12A
6042K	1	*1003G	3	382EB	Gem A	12007	12 & 12A
6042D	1	1003K	3	382J	.....	.....	12B & 18C
6042M	1	1003K	3	382JB	Gem A	12007	12B & 18C
6042AE	1	1003AA	3	382JB	.....	.....	14 & 15C
6042AF	1	1003AA	3	382J	Gem A	12007	14 & 15C

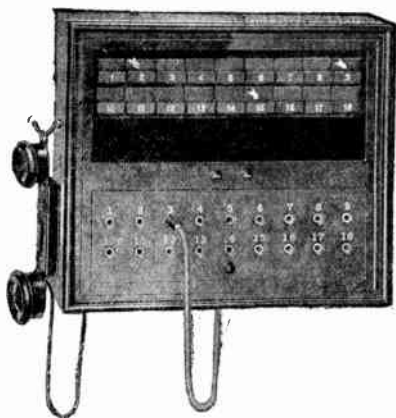
\*Hand set cord equipped with plug.



**Graybar Inter-Phones**

**Description of Annunciators**

For Systems 18C, 20J, and 21J



For System 18C

No. of Drops	System 18C List No.	Systems 20J & 21J List No.	No. of Drops	System 18C List No.	Systems 20J & 21J List No.
10	1810C	2010	49	1849C	2049
14	1814C	.....	56	1856C	2056
16	1816C	2016	64	1864C	2064
20	1820C	2020	72	1872C	2072
25	1825C	2025	81	1881C	2081
30	1830C	2030	90	1890C	2090
36	1836C	2036	100	1900C	2100
42	1842C	2042	.....	.....	.....

Larger sizes furnished on order.

No. 18C system annunciators equipped with answering cord only. No connecting cords furnished unless ordered separately.

**For Systems 22D and 22G**

No. of Drops	System 22D List No.	System 22G List No.	For No. of Sections	*No. of Calling Buttons	No. Jack and Door Buttons
2	2202D	2202G	2	12	2
3	2203D	2203G	3	18	3
4	2204D	2204G	4	24	4
5	2205D	2205G	5	30	5
6	2206D	2206G	6	36	6

\*For System 22G only.

Larger sizes furnished on order.

**For System 22J**

No. of Drops	List No.	For No. of Sections	No. of Calling Buttons	No. Jack and Door Buttons
12	2202J	2	12	2
18	2203J	3	18	3
24	2204J	4	24	4
30	2205J	5	30	5
36	2206J	6	36	6

Larger sizes furnished on order.

**Hand Set Inter-Phones for Annunciators**

Annunciators do not include the hand sets which must be ordered separately.

Order No. 1003K hand set for Systems 18C, 20J, and 21J, and for Systems 22J, G, and J.

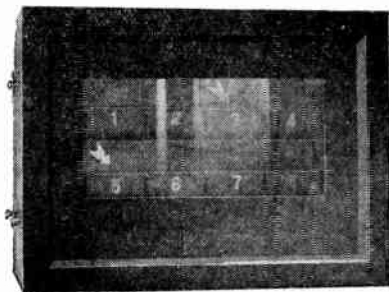
**Graybar Inter-Phones**

**Description of Annunciators**

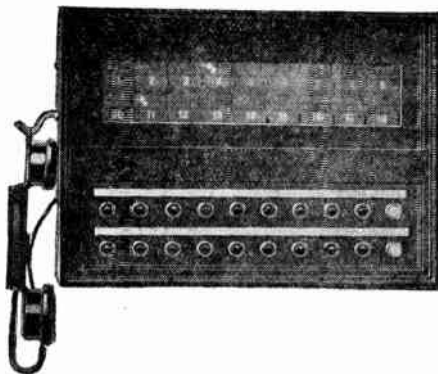
These annunciators are equipped with electric reset drops. The drop indication is a white arrow which points directly at the name card. When reset, the arrow drops out of view behind the name card.

The front of the annunciator protecting the drops is plain glass and as the arrow is between the glass and the dull black background, it can be easily seen from any angle.

**For Systems Nos. 12A, 12B, and 12C**



No. 403



No. 1204C to 1230C

No. of Drops	System 12A, Surface	List No. Flush	System 12B List No.	System 12C List No.
4	.....	.....	1204B	1204C
6	.....	.....	1206B	1206C
8	403- 8	409- 8	1208B	1208C
10	403-10	409-10	1210B	1210C
12	403-12	409-12	1212B	1212C
16	403-16	409-16	1216B	1216C
18	403-18	409-18	.....	.....
20	.....	.....	1220B	1220C
24	.....	.....	1224B	1224C
30	.....	.....	1230B	1230C

Larger sizes furnished on order.

**Hand Set Inter-Phones for Annunciators**

No. 1003D hand set must be ordered separately for Systems 12B and 12C annunciators.

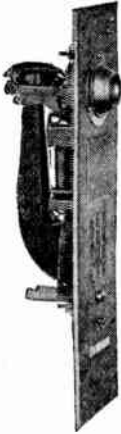
## Graybar Apartment House Inter-Phones

### System No. 21

Selective Ringing—Common Talking

#### No. 1524-E Loud Speaking Vestibule Set

Systems No. 21A, D, E, G, H, and J



Eliminates, as far as possible, all projecting and removable parts, such as the transmitter, receiver and switch-hook. Also safeguards theft of receiver and the cords.

The set consists of a flush mounting face plate. A push button is mounted at the bottom of the plate for talking and listening purposes.

Bronze brass finish.

Face plate, 5x16½ inches.

Equipped with a janitor call button.

To call one of the apartments from the vestibule, the push button (under the name of the party wanted) is pressed, which rings the bell of that apartment. The vestibule party next depresses the talking button at the bottom of the telephone set, and keeps it depressed while awaiting reply, and while conversing with the apartment party.

Only one conversation can be carried on at a time.

#### Battery Requirements

For the operation of each system three sets of dry batteries are required, each set to consist of three dry cells.

#### System No. 21A

Vestibule can call apartments; apartments can open door.

#### System No. 21D

Vestibule can call apartments and janitor; apartments can open door and call janitor.

#### System No. 21E

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry.

#### System No. 21G

Vestibule can call apartments and janitor; apartments can open door and call janitor; and janitor can call apartments.

#### System No. 21H

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry; janitor and laundry can call apartments.

#### System No. 21J

Vestibule can call apartments and janitor; apartments can open door and call janitor; and janitor can call apartments.

#### No. 1524-F Loud Speaking Vestibule Set

Systems No. 21AR, DR, and GR

These systems operate as described for the No. 1524-E except a relay is furnished in the vestibule set for closing the talking circuit when a receiver is removed from the hook at a suite station. This replaces the talking button described for the No. 1524-E.

#### System No. 21AR

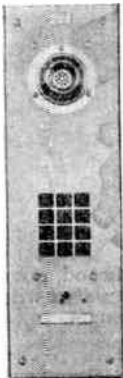
Vestibule can call apartments; apartments can open door.

#### System No. 21DR

Vestibule can call apartments and janitor; apartments can open door and call janitor.

#### System No. 21GR

Vestibule can call apartments and janitor; apartments can open door and call janitor; and janitor can call apartments.



No. 1524-F

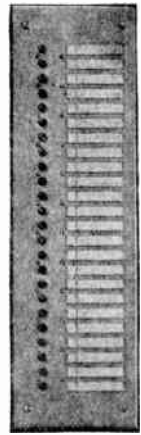
## Graybar Apartment House Inter-Phones

### System No. 20

Selective Ringing—Common Talking



No. 1520-R



No. 424-A  
Push Button Plate

The No. 20 Inter-Phone Systems are designed to provide an inexpensive and reliable means of communication between vestibule, apartments, janitor's quarters, laundry, and tradesmen's entrance.

There are six combinations of the No. 20 System, differing from each other in the number of locations in the apartments which are to be connected for inter-communicating service.

Only one conversation can be carried on at a time.

#### No. 1520-R Vestibule Inter-Phones

With Armored Receiver Cord

The No. 1520-R Inter-Phone consists of a flush mounting brush brass finish face plate with a push-button for signalling the janitor.

#### Battery Requirements

For the operation of each system a battery of not more than five dry cells is required. These can be placed in the basement or any other accessible place.

#### System No. 20A

Vestibule can call apartments; apartments can open the door.

#### System No. 20D

Vestibule can call apartments and janitor; apartments can open the door and call the janitor.

#### System No. 20E

Vestibule can call apartments and janitor; apartments can open the door and call janitor and laundry.

#### System No. 20G

Vestibule can call apartments and janitor; apartments can open the door and call janitor; and janitor can call apartments.

#### System No. 20H

Vestibule can call apartments and janitor; apartments can open the door and call janitor and laundry; and janitor and laundry can call apartments.

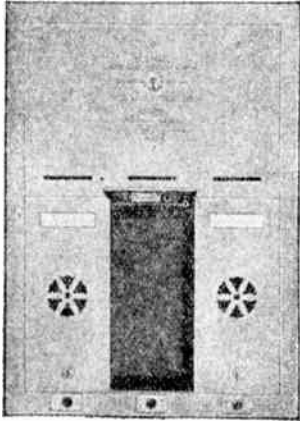
#### System No. 20J

Vestibule can call apartments and janitor; apartments can open the door and call janitor; and janitor can call apartments.

**Graybar Vestibule Push-Button Plates**

Designed to mount on either side of the vestibule Inter-Phone. A card holder is provided opposite each button. Push button plates can be obtained in two different sizes.

Code No.	No. of Buttons	Face Plate Inches	Code No.	No. of Buttons	Face Plate Inches
400A	6	5x16½	416A	16	5x16½
406A	6	5x16½	420A	20	5x16½
412A	12	5x16½	424A	24	5x16½



**Graybar Vestibule Mail Boxes**

Mail boxes may be obtained in groups of 3 to 8, being assembled complete in units and master-locked for mounting in single or double rows.

Finished in bronze, other finishes being considered special.

The overall dimensions of the individual letter boxes are 5 inches in width and 16½ inches in height.

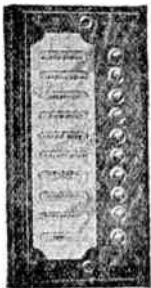
Code, No., Double and Single Row	3003	3004	3005	3006	3007	3008
No. of Boxes, Single Row	3	4	5	6	7	8

**Graybar Inter-Phone Accessories**

For Use with Inter-Phone Systems Nos. 12A, 20G and 20H, Private Installations and Call Bell Service

**Wood Push Button Blocks**

These are regular desk type push button blocks in various button capacities for general signalling purposes such as call bell service and for use in connection with desk type Inter-Phones.



**Regular Wood Base Without Cord Eyelet**

Code Nos. Without Cord	Code Nos. With Cord	No. of Buttons	Code Nos. Without Cord	Code Nos. With Cord	No. of Buttons
9004	9004C	4	9012	9012C	12
9006	9006C	6	9016	9016C	16
9008	9008C	8	9020	9020C	20

**Weighted Base With 1 Cord Eyelet**

Code Nos. Without Cord	Code Nos. With Cord	No. of Buttons	Code Nos. Without Cord	Code Nos. With Cord	No. of Buttons
9024	9024C	4	9032	9032C	12
9026	9026C	6	9036	9036C	16
9028	9028C	8	9040	9040C	20

**Metal Push Button Blocks**

A black finished metal box, bushed for entrance of connecting cord or wires. Base plate has 2 punched holes for mounting if desired. Felt pads are attached to bottom of plate. Size of box, 3¼x4¼x1½ in.

**Without Cords**

Code No.	No. of Buttons	Code No.	No. of Buttons
101A	1	104A	4
102A	2	106A	6
103A	3	108A	8

**With 6-Foot Length Cords**

104AC	4	108AC	8
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**Graybar Inter-Phone Accessories**

For Use with Inter-Phone Systems Nos. 12A, 20G and 20H, Private Installations and Call Bell Service

Continued

**No. 8 Type Connecting Blocks**



Consists of bridge type connectors, mounted on a black finished maple base, equipped with a screw eye for fastening stay cord.

Code No.	No. of Terminals	DIMENSIONS, INCHES		
		Length	Width	Depth
8G	8	5⅝	1⅜	⅝
8H	12	8⅛	1⅜	⅝

**Nos. 11 and 12 Type Connecting Blocks**



No. 11A

These consist of a composition base in which the screw terminals are embedded. Each terminal consists of 2 screw bushings electrically connected by means of a metal strip, and provided with screws and washers.

Code No.	No. of Terminals	Size In.	Code No.	No. of Terminals	Size In.
11A	2	1½x1⅜	12E	3	1¼x1⅝
*11B	2	1⅝x1⅜	*12F	3	1¼x1⅝

\*Equipped with a cover.

**No. 30 Type Connecting Blocks**



These consist of brass studs embedded in a hard composition base. Studs fitted with 2 nuts (one a split check nut) and 2 washers.

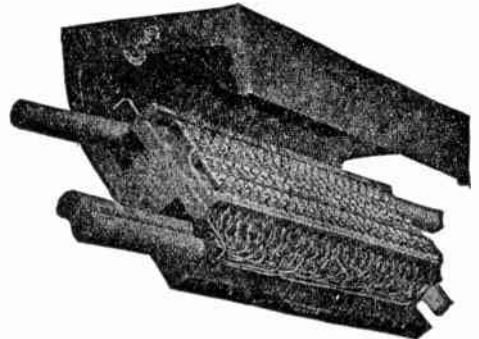
Code No.	Capacity in Pairs	DIMENSIONS, INCHES		
		Length	Height	Width
30A	6	4 ¾	1⅜	1½
30B	11	7 ⅝	1⅜	1½
30C	16	10 7/16	1⅜	1½
30D	26	16 1/16	1⅜	1½

**No. 141A Hand Set Hooks**

A hook to be screwed into wall for holding No. 1003 type hand set.



**No. 19 Type Cable Terminals**



For interior distributing work. Made of hardwood, numbered and shellacked; with sheet steel cover, treated with Parker Rust-Proof Process, finished in black enamel.

Illustration shows 4 cables attached.

Code No.	Capacity in Pairs	DIMENSIONS, INCHES		
		Length	Width	Depth
19A	14	8	5⅞	2½
19B	26	14	5⅞	2½



## Graybar Inter-Phone Switchboards Nos. 108 and 109 Flush Wall Type

### Construction

The cabinet consists of birch woodwork fitted with either a wood or metal mat framing. The finish of the wood to be oak, mahogany, or walnut; the metal, bronze finished to match sample submitted.

The lamp and jack strips are mounted in face of the switchboard on a panel which is hinged, to give complete access to interior of the switchboard.

The recessed portion, including the front panel door and the plug shelf, is covered with black formica.

### Cord Circuit Equipment

The cross-connecting cords are supervised through a single lamp circuit. These lamps are located over the key position. The single

cam type ringing and listening key for each cord position is located on the face of the board.

### Lamp and Jack Equipment

The line lamp and jack equipment is mounted 10 per strip with associated designation strips.

### Night Alarm

All calls at the switchboard may be received through a buzzer signal by the operation of a push button key.

### Battery Switch

A push button control is provided for disconnecting the battery from the switchboard when required.

### Operator's Telephone Set

An all metal hand set which hangs at the left-hand side of the board and is suspended by means of a hook support, and connected with a suitable cord length.

### Cable Termination

Cable termination at the back of the switchboard will be at the selection of the customer. It is recommended that suitable cable lengths (up to 15 feet) be provided instead of a cable terminal which is usually fastened at the back of the board. These cable lengths consist of 20 pair size lead covered cables, one end terminating to the switchboard line lamp and jack connections and the other end tagged to enable the installer to make proper terminal connections to the cable terminal box. This method eliminates duplicate cable terminating points by omitting the terminal block at the switchboard.

The proper length of cable must be specified. If it is not possible to locate the cable terminal box within suitable distance of the switchboard, terminal strips will be furnished at back of board for terminating the lines.

### Extension Telephone

An extension telephone consisting of an all metal hand set will be furnished when specified. This permits visitors or employees to communicate directly with an apartment without interfering with the regular operator's service. For this purpose a jack is provided at the right hand side of the board near the hand set which is supported on a hook, in the same manner as the operator's telephone.

### Grilled Doors

The switchboard may be fully concealed from view by means of a fancy grilled door, made of bronze and finished to match the metal trim of any interior.

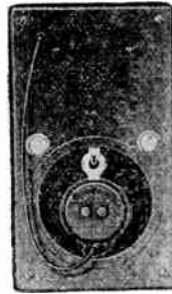
### Lighting Fixtures

Lighting fixtures are not ordinarily provided for illuminating the face of the switchboard, however special fixtures mounted separately from the switchboard can be provided when the board is mounted in a dark location.

### Further Information

Detailed information, covering types of switchboards, dimensions, wiring diagrams, accessories, etc., can be found in our Booklet GBT-86 which will be furnished upon request.

## Graybar Inter-Phones Elevator Inter-Phone Service



No. D-1640

An elevator Inter-Phone system provides for communication between the elevator starter and each elevator cab, also between the elevator starter, the engineer, the superintendent, the machine room, etc., depending upon the total number of master and outlying stations to be installed.

The elevator cab Inter-Phone D-1640 is designed to mount in back of the Underwriters' building certificate frame, which in a number of cases is required by law. This frame is hinged to a metal outlet box so that the cab operator has access to the Inter-Phone through this door. The set is compact, is concealed, has no projecting parts, and the exterior frame may be designed to match the trim of the cab in which it is installed.

The D-1640 Inter-Phone Set does not include the outlet box and mounting frame as shown in the illustrations. The elevator company usually provides a suitable type of frame and outlet box in which to mount the Inter-Phone Set. In some cases the elevator companies may wish to install a standard surface wall or hand type of instrument, depending upon the local requirements.

The starter's station Inter-Phone is usually installed in the control panel with the other operator's signalling equipment. This Inter-Phone may consist of a wall or hand type, depending upon the space available for mounting the instrument. The regular cab call button on the starter's panel will also be used for signalling the cab Inter-Phone by means of a code ring. Extra buttons will be provided for signalling the other stations in the system.

Assembly drawings of Inter-Phones and wiring diagrams will be furnished upon request.

### Elevator Cable

#### For Inter-Phone and Signalling Systems Control Cable with Steel Support

Size 16 A. W. G.

No. of Cond.	Wt. per M. Lbs.	O.D. In.	No. of Cond.	Wt. per M. Lbs.	O.D. In.	No. of Cond.	Wt. per M. Lbs.	O.D. In.
2	94	.585	8	213	.683	20	449	1.000
3	108	.585	10	267	.795	22	484	1.018
4	125	.585	12	325	.896	24	537	1.067
5	138	.585	14	360	1.003	26	580	1.111
6	160	.588	16	448	1.102	28	630	1.193
7	187	.588	18	482	1.202	30	680	1.212

#### Annunciator Cable without Steel Support

Size 18 A. W. G.

No. of Cond.	Wt. per M. Lbs.	O.D. In.	No. of Cond.	Wt. per M. Lbs.	O.D. In.	No. of Cond.	Wt. per M. Lbs.	O.D. In.
2	25	.254	8	70	.386	20	151	.525
3	32	.260	10	87	.452	22	166	.550
4	39	.288	12	106	.452	24	181	.575
5	46	.324	14	109	.452	26	200	.616
6	52	.336	16	121	.475	28	208	.616
7	61	.336	18	134	.500	30	214	.616

#### Lighting Cable (Size 14 A.W.G.)

No. of Cond.	WITH STEEL SUPPORT		WITHOUT STEEL SUPPORT	
	Wt. per M. Lbs.	O.D. In.	Wt. per M. Lbs.	O.D. In.
2	127	.677	107	.528
3	155	.677	135	.560
4	183	.677	163	.614

Further data on elevator cable furnished upon request.

**Graybar Inter-phone Cable**



For Interior Use



For Outside Use

The conductors are provided with single silk and single cotton insulation. The cable is impregnated with a wax compound and is covered with servings of paper and a heavy braiding, which is given a heavy coat of fireproofing paint.

- Three general types of cable are provided.
1. Interior Cable with outside braiding treated with gray fireproofing paint. Use only in dry places.
  2. Interior cable with brown glazed cotton outside braiding. Use only in dry places where exposed to view.
  3. Outside cable, lead covered. Always use this cable outside, and inside where there is apt to be moisture even in a small degree. In conduit installations lead covered cable should be used.
- Lead-covered cables are not listed with separate Code Nos. Any fireproofed type of cable may be ordered with a lead sheath.

All cables are provided with a standard color scheme, so that each pair can be distinguished from any other. The pairs are properly twisted to prevent inductive disturbances.

Code No.	CONDUCTORS, A.W.G.		Covering	Approx. O.D. In.
	No. 22	No. 18		
185B	4 singles	....	Fireproofed braid	1/4
161B	8 singles	....	Fireproofed braid	5/16
161B (Lead)	8 singles	....	Lead sheath	5/16
142B	8 singles	....	Brown cotton braid	5/16
162B	12 singles	....	Fireproofed braid	11/32
162B (Lead)	12 singles	....	Lead sheath	3/8
*164B	6 singles	2 pr.	Fireproofed braid	13/32
*134B	6 pr.	2 pr.	Fireproofed braid	13/32
*134B (Lead)	6 pr.	2 pr.	Lead sheath	7/16
*155B	6 pr.	2 pr.	Brown cotton braid	13/32
*141B	12 pr.	2 pr.	Fireproofed braid	7/16
*141B (Lead)	12 pr.	2 pr.	Lead sheath	1/2
*156B	12 pr.	2 pr.	Brown cotton braid	7/16
*157B	16 pr.	2 pr.	Fireproofed braid	17/32
*157B (Lead)	16 pr.	2 pr.	Lead sheath	9/16
*158B	20 pr.	2 pr.	Fireproofed braid	9/16
*158B (Lead)	20 pr.	2 pr.	Lead sheath	19/32
*136B	24 pr.	2 pr.	Fireproofed braid	19/32
*136B (Lead)	24 pr.	2 pr.	Lead sheath	5/8
*140B	31 pr.	2 pr.	Fireproofed braid	5/8
*140B (Lead)	31 pr.	2 pr.	Lead sheath	11/16

\*These cables also include two spare No. 22 B. & S. gauge conductors.

**Whitney Blake Flexible Stranded Cable for Interphones and Signaling Systems**



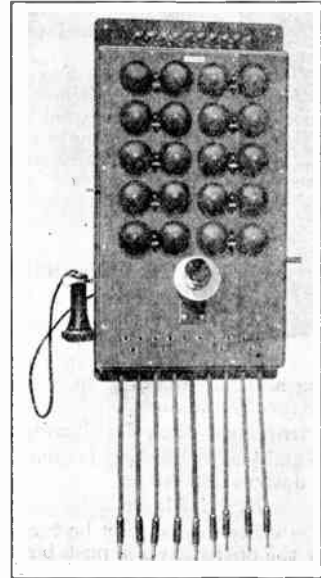
Finished in mercerized brown braid.

Color code of conductors is in accordance with standard telephone practice.

Code No. ....	416WB	428WB	436WB	444WB	452WB
No. of Conductors..	16	28	36	44	52

**No. 1012 Western Electric Magneto Wall Switchboards**

Ringer Type



This switchboard is intended for use in exchanges having 10 lines or less, and where the number of calls does not warrant having a regular telephone operator in attendance.

It has been installed by numerous rural companies who desire a switching station established in the country in which case it is installed in a farmer's home and the calls are answered by members of the family.

Being equipped with ringers, constant attendance at the switchboard is not necessary as the bells can be heard at some distance from the board.

In addition to this ringer, indicators are supplied with each ringer which give a visible signal showing which bell has been ringing.

The cabinet is well constructed of thoroughly seasoned, quarter sawed oak, which is given a durable light finish. The front is hinged and the apparatus and wiring is within easy reach for inspection or maintenance.

**Equipment**

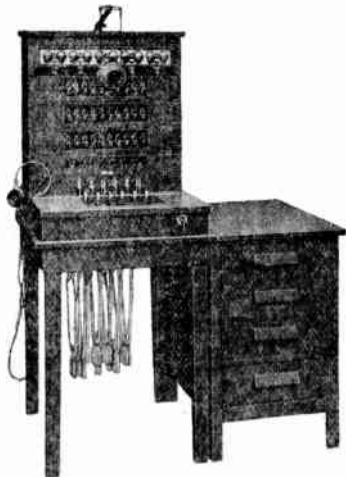
Each line is provided with a jack and a 1000 ohm ringer, although 1600 or 2500 ohm ringers can be furnished if required. Four-cord circuits, with a listening-in jack bridged across the tip and ring, and a listening cord are provided for handling the calls, no supervisory or ring off signals being provided. A powerful five-bar hand generator is furnished for ringing purposes. The operator's telephone set consists of the regular long distance transmitter and receiver.

**Operation**

Subscribers are called by ringing with the hand generator over the listening cord with which the operator answers calls and listens in for supervisory purposes. Connections are made with the other cords, without the use of keys.

## Western Electric Magneto Non-Multiple Switchboards

### No. 1800 Sectional Unit Type



Method of Assembling No. 1800 Switchboard to 35 Line Capacity

The unit or sectional type construction for the small switchboard was introduced by the Western Electric Company a number of years ago, and since that time has been supplying the demand of discriminating buyers for a small switchboard that would meet their traffic requirements and eliminate the necessity of buying an "oversize switchboard."

The capacity of the No. 1800 Unit Type Switchboard is from 10 to 50 lines. While 50 lines has been set as an arbitrary maximum it is safe to assume that with a normally low calling rate as many as 70 or 80 lines can be handled conveniently. While the No. 1800 Unit Type Switchboard is small in size (floor space required only 2 feet x 2½ feet), this does not mean that this board receives less consideration or care in manufacture than a larger switchboard, for the same quality of material, skilled workmanship and rigid inspection are applied to all of the Western Electric products regardless of size. Red oak lumber, which has been kiln-dried, thoroughly seasoned and given a dark rubbed finish, is used in the construction of the units. The inside of the units have been specially treated to preserve wood and prevent warping or cracking.

To meet various requirements, there are different types of base or supporting units, cord units, line units and top units. To assemble a switchboard of 10 lines capacity for example it is only necessary to select units as follows:

- |                   |             |
|-------------------|-------------|
| 1 Supporting Unit | 1 Line Unit |
| 1 Cord Unit       | 1 Top Unit  |

These units are easily assembled into a complete switchboard which presents a neat, compact and serviceable appearance and can be arranged to meet any service condition. Line units can be added at any time.

All of the apparatus and terminals associated with the operator's cord and telephone circuits are mounted in the cord unit.

The circuits used are very simple. A diagram of each circuit is pasted to the inside of the rear doors for convenient reference. The back of each unit is hinged and, when open, all of the wiring and equipment are easily accessible.

This switchboard is specially recommended for small, rapidly growing telephone exchanges where the ultimate capacity cannot be definitely determined.

## No. 1240-D Western Electric Magneto Switchboards

### Non-multiple—Automatically Restored Line Signals

Capacity, 165 Lines 15 Cord Circuits



Front View

as to be within easy reach of the operator, reducing that work to a minimum.

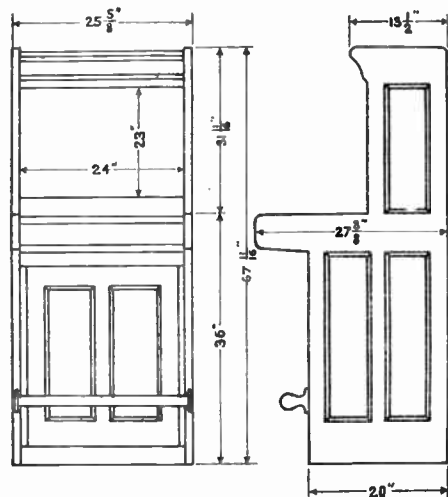
The lumber used in the construction of the cabinet is red oak, thoroughly seasoned and kiln dried to prevent warping or cracking.

The exterior of the cabinet is given a dull golden oak finish which is very serviceable. As an added precaution against warping, cracking or decay the interior surfaces are coated with shellac.

The steel framework which supports the face equipment is copper plated as a protection against corrosion or rust, also insuring a positive ground connection for the apparatus.

An apparatus and terminal board is mounted in the rear of the switchboard on which are mounted the repeating coils, night alarm bell, and large screw terminals where all power wiring such as power ringing, transmitter battery, night alarm battery, monitor taps, etc., are terminated.

The No. 1240-D non-multiple magneto switchboard is furnished with either single or double supervision cord circuits. Single supervision boards may, if desired, be equipped with five cord circuits having toroidal repeating coils and switching keys. Double supervision boards may be equipped with either the condenser type non-hang-up cord circuits, or the condenser repeating coil type non-hang-up, non-ring-through cord circuits. The present switchboard, if arranged for single supervision, may be changed to a double supervision board simply by installing the necessary additional apparatus.

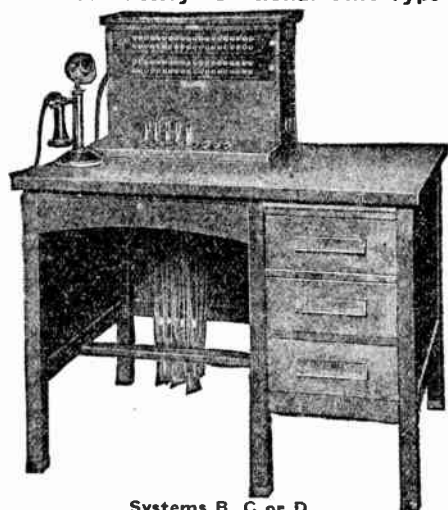


Dimensions



**No. 1801 Western Electric Private Exchange Switchboards**

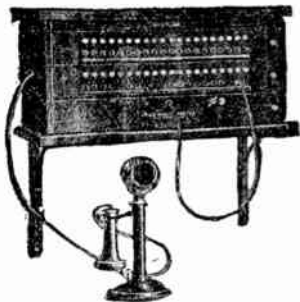
Central Battery—Sectional Unit Type



Systems B, C or D

The No. 1801 sectional unit type switchboard (like the No. 1800) was originated by the Western Electric Co., and introduced to the telephone trade to supply the demand for a small flexible and economical switchboard. Adaptable to many conditions, this switchboard has been installed by small telephone companies, as private branch exchanges, for hotels, factories, public schools and institutions or any place where telephone service was required and the ultimate capacity could not be definitely determined.

Being of the unit type, with construction somewhat similar to the sectional book case, and so arranged that additional units may be readily added when required, this switchboard is adaptable to many line and traffic conditions which are met on the small exchange. The rear of the units is permanently closed. The front panels of all units are held in place with thumb screw locks and are hinged to permit access to the wiring, terminals and apparatus. All connections are made under screw terminals.



System A

used with the systems are listed under heading: Central Battery Telephones.

**SYSTEM A.**—This system provides for communication between the switchboard and stations only. There are no facilities for inter-communication between stations or for connections to a central office.

**SYSTEM B.**—This system embodies all of the features of System "A" and in addition has facilities or intercommunication between stations.

**SYSTEM C.**—This system embodies all of the features of System "B" and in addition two plug ended trunks are provided which may be equipped for connections to either magneto or central battery central offices.

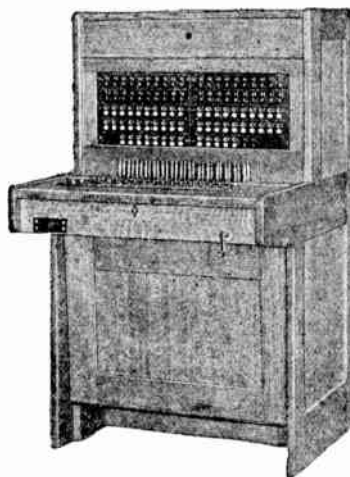
**NOTE.**—Direct current is used for ringing the telephone bells in Systems A, B and C.

**SYSTEM D.**—This system has all of the features of system "C" except that it employs the regular two wire line circuit, and alternating current is used for ringing purposes.

The telephone sets used with this system are the regular central battery sets used with central office systems.

Write our nearest house for particulars. State which system is best suited for your requirements.

**No. 551 Type Western Electric Private Branch Exchange Switchboards**



This switchboard has the distinction of being a pioneer in the private branch exchange field since the adoption of the modern flat type relays, it being the first private branch exchange switchboard in which the new relays were used. Either the No. 551A or 551B switchboard makes an ideal installation for department stores, factories, hotels, and apartments in cities or towns where the present main central office is a dial exchange or a central battery manual office.

The compact cabinet presents a neat appearance and compares favorably with the furniture in any modern office.

**Types and Capacity**

Type.....	551A (40)	551B (80)	551B (320)
Station Lines Total.....	40	80	320
*Station Lines Wired for			
Relays.....	10	20	20
Trunk Lines.....	10	15	15
Cord Circuits.....	10	15	15

\*Certain lines are wired for relays to be used on lines where the telephone is located a considerable distance (800 feet) from the switchboard. Relays are not provided unless specified.

The No. 551D is a multiple P.B.X. for use where the number of station line circuits does not exceed 360 lines. The capacity of the No. 551D multiple P.B.X., based upon a minimum of three 2-panel sections, is as follows:

Station Line Circuit.....	3-panel basis	360
Trunk Circuit.....	3-panel basis	30
Cord Circuit.....	per section	15

Red oak lumber with a dark finish or birch with a mahogany finish is used for all exposed woodwork parts. The lumber is kiln dried and thoroughly seasoned to prevent warping and cracking. Iron reinforcing brackets are placed on the inside of the cabinet at the corners giving added strength. The keyshelves and fronts of the 551-P.B.X.'s have been faced with phenol fibre rubbed a dull black which not only results in a pleasing rich appearance but provides a hard and durable surface.

The stile strips which hold the line jacks and lamp sockets in place as well as the key mounting strips in the keyshelf consist of cold drawn galvanized steel. This insures alignment of the face and keyboard equipment, also prevents damage from moisture.

All apparatus inside the section, except hand generator and ringing resistance lamp, is mounted upon a relay gate which makes equipment immediately available for adjustment while gate is closed and leaves wiring fully exposed when gate is open. Cord-weight protection panel is mounted on the relay gate rather than being fixed in the section so that when gate is open and work is being done on cords or hand generator the gate wiring is still protected from damage.

Gate is equipped with mounting clips and screws. The mounting clips hold the relay mounting plates on the relay gate and permit the use of the one-piece relay gate.

The cabinet is compact and all parts are easily accessible. Switchboards in the 80-line capacity are equipped with removable end panels. This permits lining up of 2 boards and makes an ideal installation where several positions are required.

The line circuits are simple and terminate on terminal strips which are easily accessible.

**No. 551 Type Western Electric Private Branch Exchange Switchboards**

Continued

Certain lines are arranged for use with relays and intended to be used for the stations located considerable distance (800 feet) from the switchboard. The latest standard flat type relays are used throughout which permits placing the maximum amount of equipment in a small place.

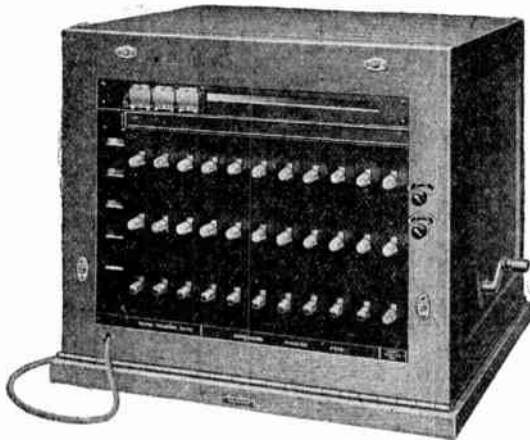
Strip line jacks and associated lamp sockets are used in all boards on the line circuits. The number of jacks and lamps required are equipped and the remaining jack and lamp positions plugged with apparatus blanks. The blanks can be removed and jacks and lamps installed at any time. The panels upon which the individual jack and lamp sockets are mounted consist of one piece of dull finished black faced fibre which does not reflect the light. A designation strip is provided above each row of jacks for convenience in numbering. The black faced fibre panel presents a neat appearance and insures perfect alignment of the face equipment.

Jack ended trunks are used on all No. 551 type boards. The jacks and lamp sockets are individually mounted.

The cord circuits embody all of the features required for the successful operation of the private branch exchange. Connections between stations and from stations to trunks are easily established. Each cord circuit is arranged for dialing by the operator from the board and through dialing from any station on the private branch exchange to the machine switching exchange. This through dialing is accomplished by the operator throwing the night key and through dialing key in the proper position after putting up the night connections. The function of the night key is to cut out all the equipment from the circuit which is not required for night service.

The dial may or may not be used as desired it being easily installed when needed. It is connected to the local cable by means of a flexible cord and the dial itself held in place by a spring clip which is screwed to the keyboard. When the dial is not equipped the hole for the cord is suitably covered with an apparatus blank.

**No. 506 Western Electric Central Battery Cordless Type P.B.X. Switchboards**



Ideal as a dependable private branch exchange. Switchboard is of the single-operator position, cordless type, with all connections established by the operation of keys.

The entire equipment is enclosed in a cabinet of light oak, or of mahogany with a rich mahogany-walnut finish.

This board is a compact and effective switching unit, and harmonizes with other office furnishings.

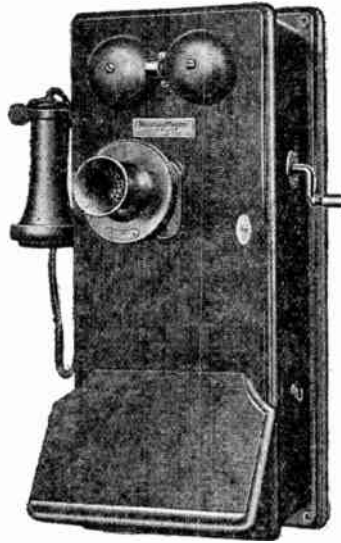
The cabinet and steel framework are designed to permit the utmost accessibility of the apparatus.

The circuits are arranged for local manual service and for operation into either central battery manual offices or into panel or step-by-step automatic offices.

**Western Electric Magneto Telephones**

No. 1317 Type

General Description



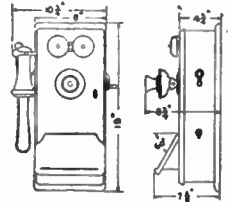
2-Cell, Closed View

The No. 1317 type telephone represents the highest development attained in magneto telephone design and construction. It has been standard with the Western Electric Company for more than a decade, and its high efficiency, reliability and long life has been thoroughly proven by the hundreds of thousands in service.

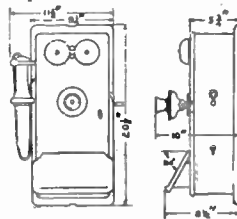
**2 and 3-Cell Types**

No. 1317 telephones are made in two styles, namely, the "2-cell" and the "3-cell." The talking circuits of these two types are identical, i.e., they employ the same transmitters, receivers and induction coils. The battery compartment of the "3-cell" type is sufficiently large to take three standard dry cells, whereas only two dry cells can be placed in the "2-cell" type. The larger cabinet of the "3-cell" type also permits the mounting of the No. 48 type (5-bar) generator, while the "2-cell" type employs the No. 50 type (large 3-bar) generator.

The 3-cell set is the more powerful and the better set from a transmission standpoint but where a smaller set is desired the 2-cell sets can be used. The 50 type generator is exceptionally powerful for a 3-bar generator. This generator will ring thirty 2500 ohms ringers connected to a No. 12BB iron metallic telephone line 15 miles in length (provided, of course, that the line is properly installed and in good condition). It will operate more telephones on a line than many 4 or 5-bar generators.



2-Cell Dimensions



3-Cell Dimensions

**WOODWORK AND FINISH.**—The cabinet is made of quarter sawed oak and given three coats of high-grade varnish rubbed down by hand. Unexposed surfaces of the telephone are also given a protective finish so as to prevent warping.

**WIRING.**—All terminals including those for the transmitter, receiver, cord, line wires, etc., are plainly marked so that

there can be no possible mistake when making connections. The various cords, such as those of the transmitter and receiver and the flexible leads running to the condenser are all furnished with cord tips.

A complete and explanatory circuit label is pasted on the inside of the door of each telephone, in addition to which a booklet is furnished giving complete instructions for installation and maintenance.

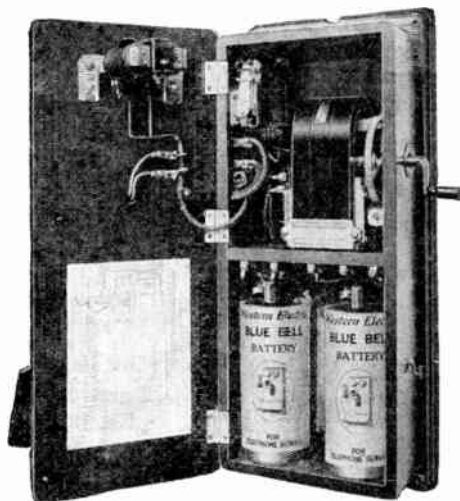
**METAL FINISH.**—The transmitter bracket, gongs, switch hook, generator, crank and lock escutcheon are given an extremely durable and pleasing black finish.

**ADJUSTMENT.**—These telephones are carefully adjusted in the factory, and should, therefore, be satisfactory for service as received by the customer unless unusual service conditions should be encountered, in which case only the ringer will require readjustment. The adjustment of the ringer is a very simple matter and instructions furnished in the booklet are so clear that no difficulty will be encountered.



Western Electric Magneto Telephones

No. 1317 Type—Continued



No. 1317, 2-Cell, Open View

No. 1317 3-Cell Type

The 3-cell set is the more powerful and the better set from a transmission standpoint but where a smaller set is desired, the 2-cell sets can be used. The 50 type generator is exceptionally powerful for a 3 bar generator.

Code No.	RINGER		GENERATOR	
	Code No.	Res. (Ohms)	Code No.	Condenser
1317-AH	38-AG	1000	22-A	.....
1317-N	38-FG	1600	48-A	.....
1317-R	38-FG	1600	48-A	21-W
1317-P	38-BG	2500	48-A	.....
1317-S	38-BG	2500	48-A	21-W
1317-BA	38-FG	1600	48-A	.....

Code No.	CLASS OF SIGNAL SERVICE		Line Conditions as Regards Load
	Telephones to Cent. Office	Cent. Office to Telephones	
1317-AH	Code	Code	Light
1317-N	Code	Code	Medium
1317-R	Code	Code	Medium
1317-P	Code	Code	Heavy
1317-S	Code	Code	Heavy
1317-BA	Selective	Code	Medium

No. 1317C 2-Cell Type

Code No.	RINGER		GENERATOR	
	Code No.	Res. (Ohms)	Code No.	Condenser
1317-CH	53-AG	1000	22-BA	.....
1317-CN	53-FG	1600	50-F	.....
1317-CR	53-FG	1600	50-F	21-W
1317-CP	53-BG	2500	50-F	.....
1317-CS	53-BG	2500	50-F	21-W

Code No.	CLASS OF SIGNAL SERVICE		Line Conditions as Regards Load
	Telephones to Cent. Office	Cent. Office to Telephones	
1317-CII	Code	Code	Light
1317-CN	Code	Code	Medium
1317-CR	Code	Code	Medium
1317-CP	Code	Code	Heavy
1317-CS	Code	Code	Heavy

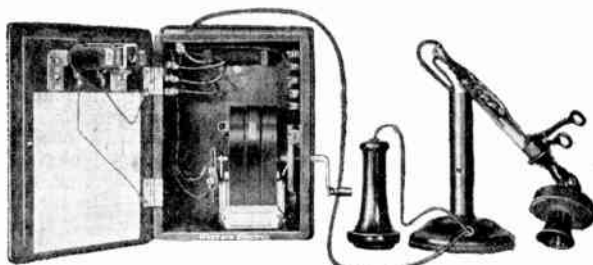
In addition to the above-mentioned apparatus all of these telephones are equipped with the following apparatus:

- No. 13 Induction Coil.
- No. 323 Transmitter.
- No. 8A Transmitter Bracket.
- No. 144 Receiver.
- No. 143Y Switchhook.

\*Equipped with No. 1006A push button, Telephone user can signal central office secretly or not as desired and can signal other parties on same line by code ringing.

Western Electric Magneto Telephones

Nos. 6003 and 6004 Desk Types

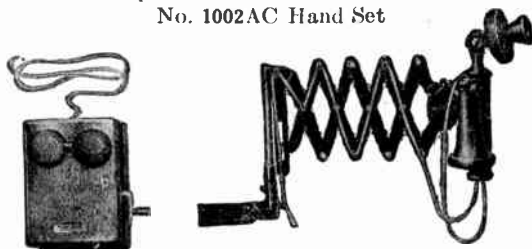


Interior View of No. 6004D

The Nos. 6003 and 6004 type desk telephones consist of a No. 1020 AL Desk Stand and a No. 300 or 315 type Desk Set Box. These telephones comprise the combinations of desk stands and desk set boxes that are most used, and therefore for convenience in ordering, are covered by a single code number.

Combinations of apparatus differing from those covered by these code numbers listed may be obtained by ordering the separate items that will make up the desk telephone desired. The following items of apparatus are the electrical equivalent of the No. 1020 AL Desk Stand and may therefore be used in connection with any of the desk set boxes listed below.

- No. 1048AA Telephone Arm
- No. 1048AB Telephone Arm
- No. 1048AC Telephone Arm
- No. 1001C and H Hand Sets
- No. 1002AC Hand Set



No. 300 Type Desk Set Box and No. 1048 AA Telephone Arm

Code No.	Desk Stand	Desk Set Box	CONTENTS OF DESK SET BOX				Line Condition as Regards Load
			Generator	RINGER Code No.	Resistance (Ohms)	Bias Feature	
6003B	1020AL	315H	22A	51AG	1020	None	
6003C	1020AL	315J	22E	49BG	2500	Spring and Screws	
6004B	1020AL	300K	48A	51BG	2500	None	
6004C	1020AL	300L	48A	51FG	1620	None	
6004D	1020AL	300AA	50A	51BG	2500	None	
6004E	1020AL	300AB	50A	51FG	1620	None	

Code No.	DESK SET BOX (CONTINUED) Con- denser Coil	CLASS OF SIGNAL SERVICE		Line Condition as Regards Load
		Telephones to Central Office	Central Office to Telephones	
6003B	None 13	Code Ringing Can Only Signal Central	Code Ringing 2 or 4 Party Selective	Lightly Loaded
6003C	None 13	Code Ringing Can Only Signal Central	Code Ringing 2 or 4 Party Selective	Lightly Loaded
6004B	None 13	Code Ringing Can Only Signal Central	Code Ringing 2 or 4 Party Selective	Lightly Loaded
6004C	None 13	Code Ringing Can Only Signal Central	Code Ringing 2 or 4 Party Selective	Lightly Loaded
6004D	None 13	Code Ringing Can Only Signal Central	Code Ringing 2 or 4 Party Selective	Lightly Loaded
6004E	None 13	Code Ringing Can Only Signal Central	Code Ringing 2 or 4 Party Selective	Lightly Loaded

NOTE.—In the case of the Nos. 300AA, 301AB, 315H, and 315J Desk Set Boxes provision is made for inserting a one microfarad condenser (see No. 21W condenser) in series with the receiver. However, condensers are not furnished unless so ordered.



## Western Electric Central Battery Telephones Nos. 6054 and 6059 Desk Type



No. 6054 Desk Telephone—No. 1020AL  
Desk Stand Partially Dismantled

The Nos. 6054 and 6059 desk type telephones consist of a No. 1020 type desk stand and a desk set box. These telephones comprise the combinations of desk stand and desk set boxes that are most used and, therefore, for convenience in ordering are covered by a single code number.

Combinations of apparatus differing from those covered by the No. 6054 or 6059 series of code numbers may be obtained by ordering a desk stand and a desk set box as separate items, also a telephone arm or a hand set may be used in place of the desk stand if desired.

For example, any of the desk set boxes that will function with the No. 1020AL desk stand will also function with the following:

- No. 1048AA Telephone Arm
- No. 1048AB Telephone Arm
- No. 1048AC Telephone Arm
- No. 1001C and H Hand Sets  
(See Hand Set Hangers)
- No. 1002AC Hand Set

Telephone Code No.	TELEPHONE CODE NO. COVERS		CONTENTS OF DESK SET		
	Desk Stand	Desk Set Box Code No.	Code No.	BOX RINGER Res. (Ohms)	Con-denser
6054E	1020AL	534E	41SG	....	21BW
6054F	1020AL	534F	33 $\frac{1}{2}$ Cycles 41TG	....	21BW
6054G	1020AL	534G	50 Cycles 41UG	....	21BW
6054H	1020AL	534H	66 $\frac{2}{3}$ Cycles 41RG	....	21BW
6054AR	1020AL	634AR	16 $\frac{2}{3}$ Cycles 72AG	1000, 3000	194B
*6059A	1020AL	584A-3	78AG	1500	149A
*6059B	1020AH	584K	78AG	1500	149A

Telephone Code No.	Induction Relay	Talking Circuit	Kind of Ringing	Ringing Current
6054E	....	46B Std. C.B.	{ Harmonic 4-Party Selective or 8-Party Semi-Selective	{ Harmonic Pulsating Current
6054F	....	46B Std. C.B.	{ Harmonic 4-Party Selective or 8-Party Semi-Selective	{ Harmonic Pulsating Current
6054G	....	46B Std. C.B.	{ Harmonic 4-Party Selective or 8-Party Semi-Selective	{ Harmonic Pulsating Current
6054H	....	46B Std. C.B.	{ Harmonic 4-Party Selective or 8-Party Semi-Selective	{ Harmonic Pulsating Current
6054AR	85N	146B Std. C.B.	4-Party Selective	Pulsating Current
*6059A	....	46C Std. C.B.	{ Single Party & 2-Party Selective	{ A.C.
*6059B	....	Series C.B.	{ Single Party & 2-Party Selective	{ A.C.

\*The Nos. 6059A and 6059B Telephone Sets replace the Nos. 6054A and 6054K Telephone Sets, respectively.

See listings of No. 534 type desk set boxes, No. 1040 desk stands and protectors.

## No. 202A-3 Hand Telephone Set with a No. 584A-3 Subscriber Set

Intended for general use at common battery manual stations on non-polarized ringing lines. The No. 78AG Ringer used is biased to prevent tapping.

Hand Telephone Set	Hand Set Mounting	Apparatus Blank No.	Cords	Hand Set
202A-3	D1-3	50J-3	*D4N-9	E1B-3

\*Will be furnished with a D4S water-proof cord instead of the D4N-9, when specified in the order.

## No. 584A-3 Subscriber Set

Code No.	Ringer No.	Condenser No.	Induction Coll
584A-3	78AG	149A	46C

## Western Electric Central Battery Telephones Nos. 1533, 6054, and 6059 Types

Ringer and gongs are enclosed within the case thereby preventing tampering, reducing maintenance and greatly improving the appearance.

Case is made of heavy sheet steel, copper-plated, and finished with two coats of extremely durable black enamel (baked on) especially developed for this particular purpose.

The case is constructed so that every part of the interior is easily accessible when the cover is opened.

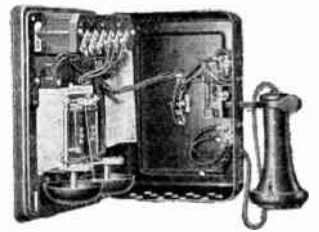
The base is flanged, thereby giving greater rigidity and preventing base from cutting into plastered surfaces.

Unit type of construction and universal terminal block employed. This permits of the telephone being readily converted from one class of service to another. This also permits of a desk set box being converted into a wall telephone or vice versa by a substitution of covers.

## No. 1533 Type Telephones



No. 1533A



No. 1533A—Interior

Telephone Code No.	Transmitter	Receivers	RINGER		Con-denser
			Code No.	Res. (Ohms)	
1533A	323	144	68AG	1600	21BW
1533K	323	171	68AG	1500	149A
1533Y	323	144	8AG	*1400	149A
1533AR	323	144	72AG	1000, 3000	21AP
1533E	323	144	41SG	460	21BW
1533F	323	144	33 $\frac{1}{2}$ Cycles 41TG	285	21BW
1533G	323	144	50 Cycles 41UG	200	21BW
1533H	323	144	66 $\frac{2}{3}$ Cycles 41RG	1800	21BW
			16 $\frac{2}{3}$ Cycles		

Telephone Code No.	Induction Relay Coil	Talking Circuit	Kind of Ringing	Ringing Current
1533A	.... 46B	Std.	{ 2-Party Selective or 4-Party Semi-Selective	....
1533K	....	{ Series C. B. Central Bat. Signalling Local Bat. Talking	{ Single Party 2-Party Semi-Selective	A.C.
1533Y	.... 13		{ 4-Party Semi-Selective	A.C.
1533AR	85J 46B	Std.	4-Party Selective	P.C.
1533E	.... 46B	Std.		Harmonic
1533F	.... 46B	Std.	{ Harmonic 4 and 8-Party Selective	Harmonic
1533G	.... 46B	Std.		Harmonic
1533H	.... 46B	Std.		Harmonic

\*The No. 8AG Ringers were formerly wound to 1000 ohms instead of 1400 ohms. The 1000 and 1400 ohm ringers have the same impedance and may be used interchangeably in service.

All of these telephones are equipped with the No. 7A Transmitter Bracket, two T1A 6-inch transmitter cords, and a 30-inch No. 521 Receiver Cord with the exception of the No. 1533K, which contains one No. 92 Cord (3 feet long) in place of the No. 521 Cord.

See separate listing for "Central Battery Telephones for use with No. 1801 Switchboards," and for protectors.

The No. 323 Transmitters have a black finish.

**Western Electric Central Battery Telephones**

For Use with No. 1801 Switchboard



No. 6000AE



No. 1539A

**Systems A and B**

The telephones for No. 1801 Switchboard Systems A and B are of the series talking circuit type and equipped with 140 ohm vibrating bells which operate on direct current.

Code No.	Case and Finish	Mounting	Receiver
2537A	Metal, Black	Surface Wall	Watch Case Type
2539A	Metal, Black	Flush Wall	Watch Case Type
1533N	Metal, Black	Surface Wall	Hand Receiver
6034AU	No. 1020BJ	Stand Desk	Watch Case Type

NOTE.—Information on hand set type telephones and desk telephones equipped with hand receivers will be furnished on application.

**System C**

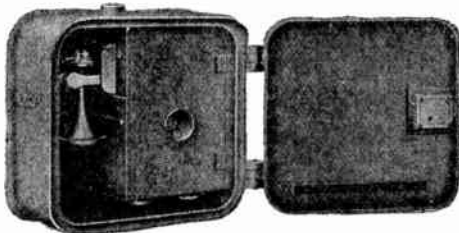
The telephones for No. 1801 Switchboard System C may be of the same types as used for Systems A and B, but in case the system is connected to an outside exchange, telephones equipped with standard central battery induction coil talking circuit should be used in order to obtain satisfactory transmission, as follows:

Code No.	Case and Finish	Mounting
1533M	Metal, Black	Surface Wall

**System D**

Any standard central battery telephone with ringers operated by alternating current either induction coil or series types can be used with System D. The No. 1533A wall type and No. 6059A desk type telephones may be selected for this system.

**No. 1320 Type Telephones for Police Service**



No. 1320A Outer Door Open

The No. 1320 type is a metal case weatherproof telephone for central battery service. It was designed primarily for the Police Patrol Service but will be found very satisfactory for general central battery service where a weatherproof telephone is required.

The apparatus is mounted on a metal frame which is removable as a unit from the case. An inner door protects the apparatus from the weather when the outer door is open. The overall dimensions are 6 $\frac{1}{8}$  inches deep by 13 $\frac{1}{8}$  inches high by 12 $\frac{3}{4}$  inches wide.

A loud ringing extension bell may be connected in multiple with the ringer of this telephone thereby providing means of signaling a patrolman from a distance (see extension bells).

A tapped hole is provided in each end of the case for receiving conduit. Four holes are drilled in the back of the case for receiving mounting screws or mounting clamps. The lock on the outer door is designed so that the key cannot be removed until the door is closed.

Outer door is not marked. Standard finish, gray paint. Special No. 1320A telephones may be obtained with outer doors marked (raised characters cast on door) in accordance with customer's requirements; color of finish, as specified.

**Western Electric Magneto Mine Telephones**



No. 1336 with Outer Door Open

Code No.	Transmitter	Receiver	Receiver Cord	Condenser	RINGER Code No.	Resistance
1336A	312	144A	384	None	None	2500
1336E				None	45BG	
1336J			10 $\frac{1}{2}$ in.	21W	45BG (Spl.)	2500
1336K	312	558	R2AD	21W	45BG	1600
1536E				*21F	63BG	2500

Code No.	Ringer Operating On	GENERATOR Code No.	Current	Signalling Service	For Line Load
1336A	A.C.	48C	A.C.	Code Ringing Code Ringing Code Ringing	Heavily Loaded
1336E					
1336J					
1336K	A.C.	48C	A.C.	Code Ringing	Medium Loaded
1536E	A.C.	51A	A.C.	Code Ringing	Heavily Loaded

\*Furnished only when specified in order.

A reliable telephone system in a mine permits instant communication throughout the plant. Routine business can be easily handled with such a system. In cases of power suspension, shut downs, or emergencies involving possible loss of life or of property the telephone is of inestimable value.

GENERAL—There are three classes of location must be considered for mine telephones. 1. Dry locations above ground or in protected parts of the workings such as the Superintendent's office and the engine room. In such locations the standard wall or desk magneto telephones are recommended. 2. Exposed locations above ground or in mines in which methane or other explosive gases or coal dust are not likely to be present in dangerous proportions. In such locations No. 1336 type telephones are recommended. 3. Mines or other locations in which methane or other explosive gases or coal dust are likely to be present in dangerous proportions. The No. 1536 type telephone is recommended for such locations.

**No. 1336 Type Telephones**

Briefly these are metal case magneto telephones in which the apparatus has been especially treated to provide resistance to moisture, acid fumes, and non-inflammable gas. All parts are enclosed in a cast iron case which provides protection against damage from water and falling objects. The top of the case is rounded so that water will readily drain off and any objects falling on the top will slide off to the ground. An outer door totally encloses all parts including the transmitter receiver and generator crank.



## Western Electric Magneto Mine Telephones

Continued

### No. 1336 Type Telephones

The sets are primarily designed for use on lines to which a large number of telephones are connected and where code ringing is used. Although intended chiefly for mine service they are also recommended for out-of-door use as in railway service, police alarm, etc.

Equipped with a No. 143J switchhook and a No. 31 induction coil.

Special No. 1336 type telephones equipped with a heavy brass padlock with 2 keys are obtainable. The padlock is attached to chain in place of latch pin. Orders for these telephones must state that padlocks are desired.

No. 1336A telephone is not equipped with a ringer. Intended for use where an extension bell is preferred to the regular telephone ringer, also for service where all the calls will be outgoing.

No. 1336E differs from the No. 1336A in that it is equipped with a ringer and an iron hood for protecting the gongs.

No. 1336J differs from the No. 1336E only in that a condenser is provided to permit the ringers of this telephone as well as others on the same line, being rung even though its receiver may have been left off the switchhook.

To add a condenser to a No. 1336 type telephone that was not originally so equipped the following apparatus and parts should be ordered: No. 21W condenser, one condenser strap P-43065, and two round head machine screws P-110187.

#### Dry Cells

Two standard size dry cells are required for each telephone to furnish current for talking. Western Electric Blue Bell Dry Cells are specially designed for telephone service and are recommended because they last longer and are more efficient for this class of service than other dry cells.

Two special Blue Bell Dry Cell cartons, impregnated with moisture-proofing compound, are furnished with each No. 1336 type telephone. These are to be substituted for the standard cartons furnished on the dry cells. These cartons resist the action of any moisture that may form on the inside of the case and prevent current leakage and rapid deterioration.

#### Case

The box, outer door, inner door and gong hood are of cast iron heavily coated with a rust-resisting finish. When the outer door is closed only the metal transmitter mouth-piece, receiver, receiver cord and the generator handle are exposed. When the outer door is closed these parts are protected from mechanical injury. When using this telephone it is, of course, evident that only the outer door need be opened.

#### Entrance for Line Wires

The line wires may be brought in either at the top or the bottom of the case. A short length of pipe is screwed into the top of the case and is covered with a pipe cap. This cap prevents water running into the set by following the line wires. In case the line wire is to be run to the telephone in pipe (conduit) no difficulty will be encountered in joining the conduit to the telephone as the wire entrance hole at bottom as well as the top of the case is tapped.

#### Mounting

Wrought iron mounting bars are secured to the back of the case. The upper end of these have pear shaped holes, and with this arrangement the telephone can be readily mounted by one man and without any danger of damaging it. This is accomplished by driving two lag screws into the mounting surface until their heads project about 1/2 inch. The telephone may then be hung upon these mounting screws (the heads of the lag screws will pass through the large end of the pear shaped holes) after which the lower mounting screws may be driven into place through the holes in the lower end of the mounting bars. Wrought iron mounting bars are employed as they are less subject to breakage than if lugs were cast on the case.

## Western Electric Magneto Mine Telephones

Continued

### No. 1536 Type Telephones



Designed especially for use in mines and other locations subject to the hazard of explosive gases or coal dust and have been declared by the United States Bureau of Mines permissible for use in mines or other locations where methane or other explosive gases or coal dust are likely to be present in dangerous proportions.

No. 1536E telephone is the same as the 1336E except that protective features are incorporated in the electrical contacts of the switchhook, generator, ringer.

No. 1536E has a 149A switchhook, a 31 induction coil and is furnished without condenser unless the condenser is called for in the order. The outer door is omitted. Projecting hood over the door protects the transmitter, receiver and generator crank. Line wires are brought in either top or bottom, when from the top an angle fixture is provided so moisture cannot enter. Holes in the bottom of the set drain off any accumulation of moisture. Special cordage adapter is provided at the receiver connection of the cord. Unusually hard usage and hoisting will not fray the insulation. Internal mechanism, batteries, line connection, etc. in the housing are inaccessible without unlocking the door and removing the cap screws around the side of the door. Switch hook, generator and ringer are separately removable so they can be carried away for repairs.

Two Blue Bell dry cells with screw terminals are furnished as part of the set. Cartons P-201339 are furnished with sets, but new cells can be ordered without cartons as one carton has a longer life than the cell. Wrought iron bars are secured to the back of the set for mounting. Two lag screws are needed (but not furnished) to mount set. Set as furnished is permissible, any change automatically voids the approval of the Bureau of Mines.

#### Systems

For a system in which all the telephones are connected to a party line, the set should be of such a design that all the stations can be clearly signaled, for example: No. 1336J telephone set for service below ground or exposed locations above ground and the 1536E for gaseous locations. No. 1317S wall telephone set for service above ground in unexposed locations or No. 6004-B desk type telephone set.

It is preferable, in cases where the size of the system warrants, to use a number of lines connected to a switchboard rather than to depend on one party line. Any of the lines may be a party line but it is much better to have the important stations such as engine room and superintendent's office connected to the switchboard by individual lines. With a switchboard and individual lines the 1336E or the 1536E telephones should be used below ground and in exposed locations. For the lightly loaded lines above ground and not exposed the 1317AH wall telephone set or the 6003B desk telephone set can be used.

#### Ringers and Extension Bells

The ringers used in these telephones may be readily adjusted if necessary with a screwdriver. The gongs emit a loud distinct ring, which can be heard a long distance, particularly so underground. However it is often desired to provide loud ringing extension bells in connection with mine telephones and for this purpose the No. 392 and No. 342 type subscribers sets are recommended as they are designed to withstand the severe conditions encountered in mine service.

#### Protectors

The telephone installed above ground should be equipped with protectors consisting of open space cut outs (for example the No. 60AP protector) to prevent damage to the telephone by lightning. In case there is a chance of contact between the telephone line and a power circuit protectors consisting of open space cut outs and fuses (for example the No. 58AP protector) should be used.



Western Electric Street Railway Telephones

Magneto and Battery Types



No. 1278 type telephones employ weatherproof iron boxes and are provided with insulated circuits. They are intended principally for exterior use by street railway companies operating telephone lines on which there is a chance of crosses with low voltage power circuits. This type telephone is arranged so that its circuit is cut off from the line except when its door is opened. When the telephone is in use a repeating coil is interposed between the line and telephone circuit proper, so as to protect the user, as far

as possible, from the chance of injury should the line become crossed with a low voltage circuit. When the door is opened, a line switch is released which connects one winding of the repeating coil across the line and connects two fuses and two open space cut-outs into this circuit. The telephone circuit proper is connected to the second winding of the repeating coil and has no direct contact with the line circuit. The fact that a repeating coil is interposed between the line circuit and the telephone circuit reduces the efficiency of the telephone to some extent and, therefore, the use of these telephones is not recommended on heavily loaded lines, except where the protective feature is essential. See No. 1336 type telephones. In case a car is held up awaiting orders from the dispatcher the door of the telephone is left open so as to permit of the telephone being signalled. (It is impossible for the telephone to be signalled when its door is closed.) As the talking circuit is only closed when the push button in the hand set is depressed, the battery in the telephone is not wasted under the above condition. The apparatus of this telephone is mounted on an iron shelf, which may be removed as a unit from the telephone for inspection. The connection between the apparatus on the shelf and the line and ground terminals is made through the medium of clips which register with contacts mounted on a terminal block secured to the back of the case. The case and door are of cast iron and have a galvanized finish. Both the top and bottom ends of the case are tapped for receiving 1/2 inch conduit.

The F, G and J telephones are equipped with a lock which is arranged so that the key cannot be removed until the door of the telephone is closed. The No. 1278H is equipped with a hasp, staple and pin similar to that used on No. 1336 type telephones, but padlock is not included.

For Magneto Service

Code No.	Hand Set	RINGER Code No.	Resist-ance (Ohms)	Gener-ator	Ind. Coil	Re-peating Coil	Lock	Class of Signal Service	For Line Load
1278F	1001H	51AG	1000	†48C	{ 13 } { 29 } { 29 }	25E	{ 5B }	†Code	Medium
1278G							{ 5B }		
1278H							{ *None }		

For Local Battery Talking and Central Battery Signalling

1278J 1001H 51AG 1000 None 13 25E 5B †Code Medium  
Designed for medium line load.

In addition to the apparatus listed above these telephones are each equipped with: A special door switch. A special protector.

- 2 D. & W. No. 5001 Type C fuses—500 volt 1 ampere.
- 2 No. 2 protector blocks.
- 2 No. 1 protector blocks.
- 2 No. 3 protector micas.

Dry cells must be ordered as a separate item.

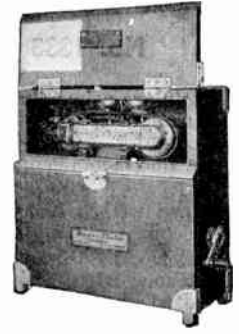
\*Equipped with hasp, staple and pin the same as No. 1336 type telephones. Ringer is disconnected from the line when door of telephone is closed.

†Generators have special mounting brackets.

Western Electric Portable Magneto Telephones



No. 1330E Closed



No. 1330E Open

Nos. 1330 and 1331 Types

These are complete magneto telephones mounted in substantial wooden cases. They are primarily for use in railway service and are designed to withstand the jarring and rough handling incident to train service. In addition to railway service these telephones are suitable for any service where a substantial type of portable telephone is required. While these telephones are not waterproof they are designed to withstand ordinary weather conditions.

The Nos. 1330F and 1331F telephones are equipped with a six-foot waterproof cord and No. 146 plug for connecting them to a telephone line through a No. 186 pole jack.

The Nos. 1330E and 1331E telephones are intended primarily for use where connection to the line will be made with a line pole.

No. 1375 Type

The No. 1375B is especially adapted for use in cases where the telephone user must carry the telephone considerable distances. While it is primarily intended for use on moderately loaded lines, the design of the generator is such that it may be satisfactorily operated on heavily loaded lines.

The generator, induction, coil buzzer and terminal block are mounted on an aluminum frame and secured in the case by means of machine screws.

The case is made of high grade leather and is designed to withstand considerable rough handling.

Code No.	Hand Set	Plug	Cord for Plug	RINGER OR BUZZER Code No.	Resistance (Ohms)
1330E	1001C	None	None	32B Ringer (A.C.)	2500
1330F		No. 146	No. 509 6-ft.		
1331E		None	None	3B Buzzer (A.C.)	2500
1331F		No. 146	No. 509 6-ft.		
1375B	1001H	.....	.....	D-21141 Buzzer (A.C.)	2150

Code No.	GENERATORS Code No.	Current	Ind. Coil	Con-denser	Battery Used*	Approx. Wt.Lbs.
1330E	{ 4A } { (5 Bar) }	A.C.	29	{ 21F } { None } { 21F }	2 Blue Bell (A.C.)	28
1330F						
1331E					{ (3 Bar) }	None
1331F						
1375B	29E	A.C.	D-17624	None	Eveready Battery*	10 1/2

Code No.	Over All Dimensions In.	Line Conditions as Regards Load	Signalling
1330E	12 1/2 x 13 1/2 x 5 1/4	For heavily loaded lines	Telephone sig-nals and is signalled by code ringing
1330F			
1331E		For lightly loaded lines	
1331F			
1375B	9 3/4 x 7 1/4 x 4 1/4	Medium and heavily loaded	Telephone sig-nals and is signalled by code ringing

\*Batteries are not included in the price of the telephone and are furnished only when specified in the order.

## Western Electric Cable Terminals

### Type C

A No. 22 A.W.G. cable stub  $6\frac{1}{2}$  feet long will be furnished on Nos. C-10 and C-16 unless otherwise specified. A 7-foot, No. 22 A.W.G. cable stub will be furnished with No. C-26 unless otherwise specified.

Code No.	No. of Pairs	Height Inches	Replaces
C-10	10	$12\frac{3}{4}$	8A
C-16	16	$14\frac{5}{8}$	8B & 8D
C-26	26	$17\frac{3}{4}$	8C & 8E

### No. 14 Type Without Protectors

This is for open wire distribution from lead-covered aerial cable, and is intended to be mounted on poles or buildings. No arrangement is made for protective devices. A 6-foot No. 22 A.W.G. cable stub is standard.

Code No.	Capacity Pairs	Length Including Nipples Inches	Width of Cover Inches
14B	11	9	$7\frac{1}{16}$
14C	16	$11\frac{17}{32}$	$7\frac{1}{16}$
14D	26	$16\frac{3}{32}$	$7\frac{1}{16}$

### No. 18 Type With Protectors

This is a protected terminal for open wire distribution from lead-covered aerial and underground cable. Inclosed in a black finished galvanized iron cover approximately  $8\frac{3}{16}$  inches in diameter, provided with a safety chain fastened to the mounting base.

Arranged for mounting on poles. Equipped with: No. 7A Fuses (7 ampere unless otherwise specified). No. 1 Protector Blocks. No. 2 Protector Blocks. No. 3 Protector Micars.

A 6-foot No. 22 A.W.G. cable stub is standard.

Code No.	Capacity Pairs	Length Inches	Code No.	Capacity Pairs	Length Inches
18A	10	$19\frac{9}{32}$	18D	30	$33\frac{1}{32}$
18B	15	$22\frac{1}{32}$	18E	50	$46\frac{25}{32}$
18C	25	$28\frac{29}{32}$	18F	60	$53\frac{21}{32}$

## Western Electric Telephone Cords

There is a Western Electric cord to fit any telephone set or switchboard. If none of the cords described below meet your requirements, write us, sending if possible a sample cord or a sketch, paying particular attention to the kind of tip required.

Always specify length of cord when ordering.

### Wall Telephone Receiver Cords

Code No.	Tinsel Cord	Brown Covering	No. Receiver End	Cord TIP Set End	Standard Length Feet
10	2-Conductor	Silk	29	62	$2\frac{1}{2}$ and 6
R2A	2-Conductor	Silk	103	103	$2\frac{1}{2}$
460	2-Conductor	Silk	29	29	$2\frac{1}{4}$

Used with receiver on wall set.

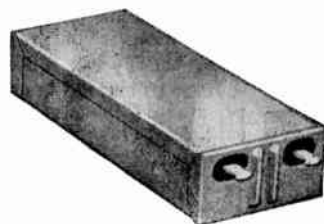
### Desk Stand Cords

Code No.	Conductor	Material	Length	Standard Length Feet
549	2-Conductor	Silk	29	$2\frac{1}{2}$
T1A	1-Conductor	Cotton	98	1
550	3-Conductor	Silk	...	$5\frac{1}{2}$ or 8

No. 549 is used with receiver and No. T1A is used with transmitter on Nos. 1020 and 1040 Desk Stand. No. 550 is used with stand to connect with desk set box.

## Western Electric Unmounted Condensers

### No. 21 Type



No. 21

Code No.	Rated Capacity	Voltage Tested On, A.C.	Use
21H	0.1	1200	No. 85 Type Interrupter Railway Sets Telegraph
21AA	1.0	1000	
21AK	0.5	1000	

### No. 142 Type

Code No.	CAPACITY			Voltage Tested On A.C.	Use
	Min.	Rated	Max.		
142B	.25	.25	.32	1000	Telegraph Railway Sets
142D	.05	.05	.06	1000	

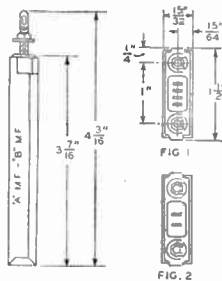
No. 142B Type replaces Nos 21Y and 21AL Condensers.

No. 142D Type replaces No. 21U Condenser.

The No. 142 Type Condensers require one No. 27A Bracket when mounted in place of the No. 21 or similar type condensers.

Arranged to mount on  $\frac{1}{2}$ -inch horizontal and  $1\frac{1}{4}$ -inch vertical centers. Furnished with two nuts and washers for mounting.

Safe continuously applied voltage, either d.c. or effective a.c. at 60 cycles or less and of an approximate sine wave, is 300 volts.



No. 142

### Nos. 147 and 149 Types

The Nos. 147 and 149 Type Condensers are equipped with mounting tabs at lower edge of condenser and may be mounted by means of this tab and a mounting strap.

Safe continuously applied voltage, either d.c. or effective a.c. at 60 cycles or less and of an approximate sine wave, is 180 volts.

If No. 147 Type Condenser when substituted must fill space of No. 21 Type, order should specify P-409555 Adapter, and for the No. 149 Type Condenser, specify P-409556 Adapter.

Code No.	CAPACITY M.F. STAMPED AT				Voltage Tested On D.C.	Use	Replaces
	Max.	A	B	Min.			
147A	2.50	...	2.0	2.0	500	General	Nos. 21D, E & L
147B	1.25	1.0	...	1.0	500	General	No. 21BG
*147C	1.25	...	1.0	1.0	500	Composite	No. 21AD
	1.25	1.0	...	1.0			
*147D	1.25	1.0	...	1.0	500	Coil Racks	No. 21N
	.62	...	.5	.5			

\*Values stamped at "A" are measured between terminals 1 and 2, and values stamped at "B" are measured between terminals 1 and 3.

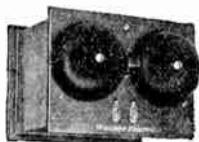
Code No.	CAPACITY M.F.			Voltage Tested On D.C.	Use	Replaces
	Max.	Rated	Min.			
149A	1.25	1.0	1.0	500	General	Nos. 21F, K, W & BW
149B	.62	.5	.5	500	General	Nos. 21AC & AS
149C	.13	.1	.1	500	General	No. 21R
149D	.80	.65	.65	500	General	No. 21BF

**Western Electric A. C. Extension Bells**

Intended for auxiliary use in connection with wall, desk or telephone arm telephones. They consist of a ringer on a suitable mounting and two line terminals or binding posts. For magneto bridging non-selective service only.

**No. 127 Type**

Ringer mounted in an oak box. Approximate dimensions, width 6 1/2 inches; height 4 3/8 inches; depth 4 5/8 inches.



Code No.	Ringer No.	Resistance Ohms
127E	38AG	1020
127F	38BG	2500
127G	38FG	1620

**No. 392 Type**

Moisture-proofed loud ringing bells having a black finish metal cover and base with galvanized finish gongs.

When the extension bell is to be used on a central battery line a 2 M.F. condenser must be connected in series with the ringer coils.

Base is arranged for mounting a No. 21D condenser. Condenser is not furnished, however, unless so ordered.

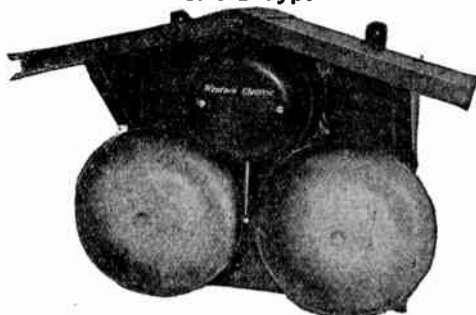
The connecting leads to the ringer coils are so arranged that the condenser can be easily connected in series with the ringer without disturbing the line wires when desired.

Code No.	Resistance Ohms	Diameter Gongs, In.
392A	1000	6
392B	2500	6
392E	1600	6
392G	1000	8
392H	2500	8



Biassing attachment for selective ringing can be added.

**No. 342 Type**



Loud ringing bells for use in mines and other places where a bell protected from weather is desired. Consists of a No. 392 type bell mounted on a No. 149A backboard having a sloping roof which protects the bell.

Code No.	Bell Used	Resistance Ohms	Diam. Gongs, In.	Code No.	Bell Used	Resistance Ohms	Diameter Gongs, In.
342G	392G	1000	8	342J	392A	1000	6
342H	392H	2500	8	342K	392B	2500	6

**Western Electric Tubular Fuses  
Fiber Shell Type**



No. 7T



No. 7A

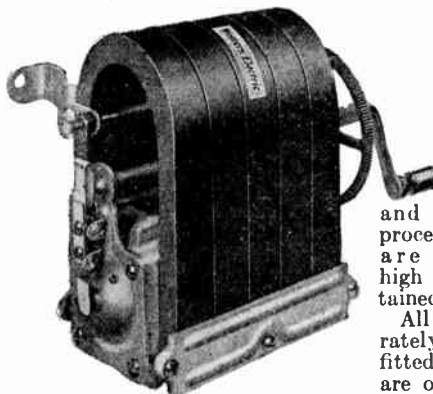


No. 11C

These fuses are carefully made from especially selected materials. The use of lead fuse wire prevents the possibility of overheating the shell. These fuses will carry their rated currents indefinitely without injury and will act reliably on one and one-half times their rated current values. Fuses of the same code number and rated capacity will give consistent performance as to rated and operating current values.

Code No.	Rated Capacity Amperes	Used with
7A	1 to 7 as Specified	Nos. 61, 77, 1074A and 1078 Protectors
7T	7	B Cable Terminals.
11C	7	Nos. 58AP and 1079AP Protectors

**Western Electric Hand Generators**



No. 48A

Western Electric hand generators are correct in both mechanical and electrical design and the materials used and manufacturing processes employed are such that their high efficiency is retained indefinitely.

All parts are accurately machined and fitted and the bearings are of such size that no trouble due to the armature scraping on the pole pieces will be encountered even after years of service. The gears are accurately cut.

All metal parts are given a protective finish and the armature winding is moistureproofed. The magnets are made from steel which was developed especially for this purpose.

**No. 22 Type Generators**

The No. 22 type generator is used on lightly loaded magneto lines and may be obtained for alternating or pulsating current.

These generators have three magnets except the No. 22E, which has only two.

**No. 29 Type Generators**

The No. 29 type generators are used where light weight is essential as in linemen's test sets, and portable telephones.

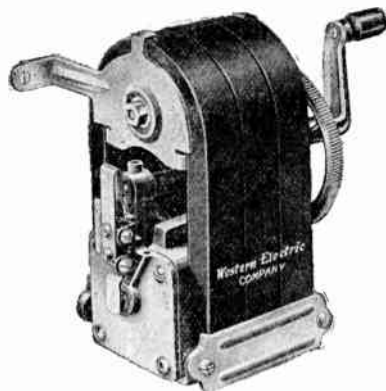
**No. 48 Type Generators**

The No. 48 is our most powerful hand generator and is used in telephone for heavily loaded line service.

**No. 50 Type Generators**

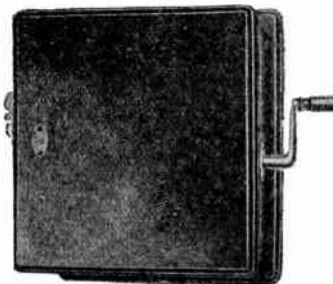
The No. 50 type generator was designed for use on moderately loaded lines and while it only has three magnets, it is considerably more powerful than a good many five-bar generators on the market, and will be found satisfactory for use on all but the very heaviest loaded lines. On a line of 12000 ohms, the No. 50 generator will operate six 2500 ohms Western Electric ringers and will operate thirty-five 2500 ohms Western Electric ringers on a line of about 1000 ohms.

The No. 50 generator is approximately 75% as powerful as the No. 48 type.



No. 50A

**Western Electric Hand Generator Boxes**



A hand generator box consists of a generator mounted in an oak cabinet having a hinged cover.

The leads from the generator are connected to terminals mounted close to the inside edge of the box.

Code No.	Generator	Current	DIMENSIONS OF BOX, INCHES		
			Width	Depth	Length
299F	48A	A. C.	8	6	9
299G	48B	A. C. and P. C.	8	6	9
303G	50A	A. C.	7 29/32	4 13/32	8 1/8



## No. 1001 Type *Western Electric* Hand Sets



No. 1001A

The No. 1001 type hand sets have been manufactured for over fifteen years. They were originally intended for the use of linemen and are designed to with-

stand the rough handling, incidental to such service. This design proved to be so satisfactory that it is now used extensively for a number of different purposes, as described below.

The handles are made of brass tubing with drawn brass end pieces and the transmitters and receivers are provided with drawn brass cases equipped with screw clamping rings, thereby making an instrument that is extremely rugged.

The No. 1001-C, and H hand sets are provided with a push button switch which is connected so that these hand sets function the same as the No. 1020-AL desk stand. In view of this, they may be used in connection with our regular magneto and central battery desk set boxes in place of a desk stand, in cases where the service conditions are such that a hand set is required. These hand sets have a nickel-plated finish.

### No. 1001A

Used by linemen as a test set on central battery lines. The cord is equipped with spring connection clips.



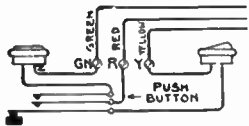
Push Button Spring Combination

Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001A	244	131	243	8 in.	None
			574	2½ ft.	
			(Waterproof)		

### Nos. 1001C and 1001H

No. 1001C is used with Nos. 1330 and 1331 portable magneto telephones.

No. 1001H is used with No. 1375B portable magneto telephone.

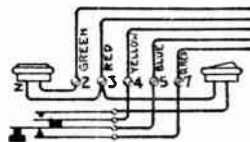


Push Button Spring Combination

Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001C	285	131	366	6 ft.	2 Make
			(Waterproof)		
1001H	244	131	422	5 ft. 2 in.	2 Make
			(Waterproof)		

### No. 1001E

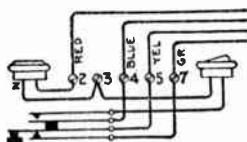
Used with desk type Inter-phones where 5-conductor cord is required.



Push Button Spring Combination

Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001E	244	131	398	6 ft.	1 Make and 1 Break

### No. 1001J



Push Button Spring Combination

Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001J	244	131	502	6 ft.	1 Make and 1 Break

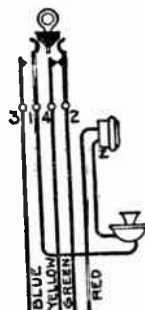
No. 1001J is used with desk type Inter-phones.

## No. 1002 Type *Western Electric* Hand Sets

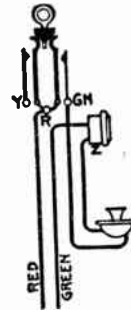


No. 1002AC

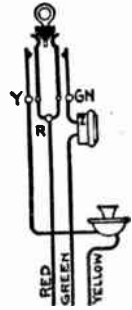
The transmitter and receiver of the No. 1002 type hand sets are mounted on a nickel plated tubular brass frame, equipped with a hard rubber handle. A switch mounted within the frame is actuated by a plunger which terminates in a ring by which the hand set is suspended, when not in use. When the hand set is removed from the hook, the switch is automatically closed. These hand sets function the same as certain desk stands, and, therefore, may be used in place of desk stands, if required. A hook (No. 141A switch-hook) is furnished with each hand set.



NO. 1002-D



NO. 1002-E



NO. 1002-AC

### No. 1002D

Used in place of desk stands and telephone arms in connection with Interphones. Also for general use.

Code No.	Transmitter	Receiver	CORDS		Switch Combination
			Code No.	Length	
1002D	267	141	336	14 ins.	1 make and 1 break (4 conductors)
			402	8½ ins.	
			429	4 ft. 6 ins.	
			(4 conductors)		

### No. 1002E

Used in connection with a janitor's switchboard in apartment house equipment. Also for general use.

Code No.	Transmitter	Receiver	CORDS		Switch Combination
			Code No.	Length	
1002E	267	141	402	8½ ins.	2 make contact
			336	14 ins.	
			430	4 ft. 6 ins.	
			(2 conductors)		

### No. 1002AC

Used in place of local battery bridging or central battery desk stands. Functions same as No. 1040AL desk stand. Also No. 1801 swbd.

Code No.	Transmitter	Receiver	CORDS		Switch Combination
			Code No.	Length	
1002AC	267	141	318	4½ ft.	2 make
			(3 conductors)		
			414	4¼ ins.	
			415	9½ ins.	

## No. 1003 Type Hand Sets

NOTE.—The No. 1003 type hand sets are listed under Interphones.

### *Western Electric* Hand Set Hangers

No. 1B mounts on a vertical surface for holding a No. 1001 type hand set when not in use. The hand set is suspended by its receiver, which fits into a recess in the hanger. Cast brass; black finish. Overall dimensions, 3¼ inches wide, 2½ inches deep and 3½ inches high.

No. 1C is the same as the No. 1B, except that it is equipped with rubber studs and a spring, so arranged as to prevent the hand set from swaying. Used principally on steamships.



No. 1B

**Western Electric Desk Set Boxes**

**Nos. 300 and 315 Types**

For Use with Desk Stands, Telephone Arms, Etc., on Magneto or Central Battery Lines



Used with No. 1020AL desk stand and Nos. 1020CC, 1048AA, AB and AC telephone arm. Oak boxes equipped with induction coil, and with ringer, generator and condenser as indicated below.

**Ringers Operated by A.C.**

**Code Ringing**

Code No.	Ringer Resistance Ohms	Type Generator	Con-denser	Service
315H	1020	No. 22 (3 Bar A.C.)		Light Loaded Lines
300K	2500	No. 48 (5 Bar A.C.)		Heavy Loaded Lines
300N	2500	No. 48 (5 Bar A.C.)	1 Mf.	Heavy Loaded Lines
300L	1620	No. 48 (5 Bar A.C.)		Medium Loaded Lines
300M	1620	No. 48 (5 Bar A.C.)	1 Mf.	Medium Loaded Lines

**No. 1020AL Western Electric Desk Stands**

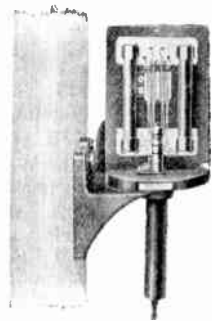


For regular bridging magneto or common battery service. Insulated transmitter.

Includes one No. 20AL Desk Stand, one No. 323 Transmitter, one No. 144 Receiver and cords.

Black Japan finish.

**No. 186 Western Electric Weatherproof Telephone Jacks**



Weatherproof jack designed for mounting poles; affords a means of connecting a portable telephone to the line. Contains protective apparatus.

Lock will be furnished if specified in order.

**No. 58AP Western Electric Telephone Protectors**



Designed for protection against lightning and crosses with electric circuits.

Consists of two No. 11C-7 Ampere Fuses, two each Nos. 26 and 27 Protectors and Nos. 16, 29 and 48 Mountings.

**Western Electric Telephone Protector Blocks**

**Nos. 19 and 20**



No. 19



No. 20

Code No.	Description	USED WITH		Protectors, Nos.
		Protector Blocks, No.	Protector Micas, No.	
19	Plain Copper Block with Two Pins	20	10	58B, 60B
20		Grooved Copper Block with Two Bushings	19	10

**Nos. 26 and 27**



No. 26



No. 27

Provides better telephone service through fewer interruptions of operation. They are used together without a separator (protector mica) and form an open space cutout which will afford the highest grade of protection against high potentials due to lightning.

The No. 26 protector block is a solid piece of hard non-dusting carbon. The face of the block is especially ground to present a smooth surface. The No. 26 protector block is mounted on the ground side of the protector mounting.

The No. 27 protector block consists of a porcelain frame with a countersunk hard carbon plug which is fastened in place with low temperature fusing cement. The surface of the frame which bears against the No. 26 block, when assembled in a mounting, is finished by grinding. The air gap between the carbon insert in the No. 27 block and the face of the No. 26 block is held to close limits by this grinding process and the consistent operation of the cutouts at the proper voltage is thereby insured.

Ordinary lightning discharges will cause an arc across the air gap between the carbon blocks but will not heat them sufficiently to melt the cement used for holding the carbon plug in place. A cross with an electric light or power line, however, will cause a discharge or repeated discharges, of such duration that the heating of the carbon insert of the No. 27 blocks will melt the cement holding it in place and allow the mounting spring to push it into direct contact with the No. 26 block, thus permanently grounding the line.

Code No.	Description	Used with Protectors, Nos.
26	Carbon Block	12AP, 58AP, 60AP, 76AP, 1268A and 1269A
27	Porcelain Frame with Carbon Insert	

The new blocks are interchangeable with the old combinations of No. 1 protector block, No. 2 protector blocks and No. 3 protector mica in all subscribers' set protector mountings and are therefore available for improving protective equipment already in service, during the normal replacements. All orders for replacements of Nos. 1 and 2 blocks and No. 3 micas in subscribers' telephone station protectors should specify the Nos. 26 and 27 protector blocks; no separator (protector mica) is needed with the new design of block.

**Protector Micas**

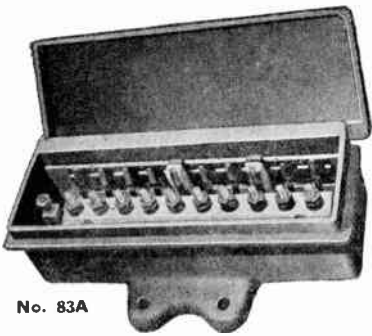


No. 10

Code No.	USED WITH	
	Protector Blocks, Nos.	Protectors Nos.
10	19, 20 and 21	58B, 60B and 80A
11	19 and 20	178

No. 11 mica is twice as thick as the No. 10.

## Western Electric Telephone Protector Mountings

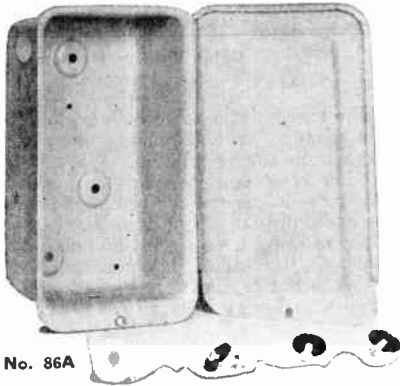


No. 83A

No. 83A is designed to protect drop wires between the overhead lines and the subscribers telephone set from lightning. This protector mounting consists of an iron box approximately  $8\frac{1}{16} \times 5 \times 2\frac{3}{4}$  inches deep with a cover and having a No. 84A protector mounted within it. Arranged to mount 10 pairs of No. 26 and 30 protector blocks. This

protector mounting provides for the protection of 5 pairs of wires. The box mounts directly underneath the crossarms on the poles. Two mounting lugs are provided for this purpose.

No. 86A is for housing the 58 type protector where outside installation is desired. Consists of a galvanized iron metal box having a sliding cover with locking screws. Three screws are furnished for mounting the protector in the box. Size, 10 inches long,  $5\frac{3}{16}$  inches wide,  $3\frac{1}{4}$  inches deep.



No. 86A

## Western Electric Hand Receivers



No. 144

With hard rubber case.

Cord not included; order separately.

## Western Electric Head Receivers

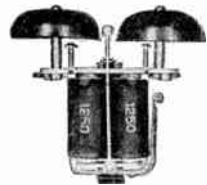
No. 528

Standard biopolar head receiver, brass case with improved wire type headband.

Used with operator's telephone set and all switchboards.



## Western Electric Ringers



No. 53 Type

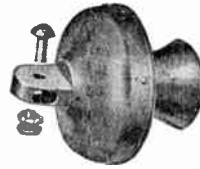
Have gong posts suitable for  $\frac{5}{8}$ -inch woodwork; spacers can be furnished to adapt the No. 53 type to  $\frac{3}{8}$ -inch woodwork and the No. 38 to either  $\frac{3}{8}$  or  $\frac{1}{2}$ -inch woodwork. Black finish gongs are furnished as standard, but nickel finish gongs can be supplied.

Used with central battery (magneto) telephones.

Code No.	Approx. Resistance Ohms	Gongs		Mounts In Wood-work Inches
		Code No.	Diam. Inches	
38AG	1020	26A	3	$\frac{5}{8}$
38BG	2500	26A	3	$\frac{5}{8}$
38FG	1620	26A	3	$\frac{5}{8}$
53AG	1000	29A	$2\frac{1}{2}$	$\frac{5}{8}$
53BG	2500	29A	$2\frac{1}{2}$	$\frac{5}{8}$
53FG	1600	29A	$2\frac{1}{2}$	$\frac{5}{8}$

## Western Electric Transmitters

No. 323



High resistance, insulated transmitter. Provided with mounting lug and clamping bolt. Black finish.

Designed for use on magneto and central battery desk stands and telephone arms

No. 353

High resistance, insulated, bracket type transmitter. Black finished all over.

Designed for use on magneto and central battery wall telephones, requiring a bracket type transmitter



## Western Electric Testing Sets

Type 90500

Each set consists of a hand generator and a ringer, wired in series, and inclosed in a wooden case.



No. 90530

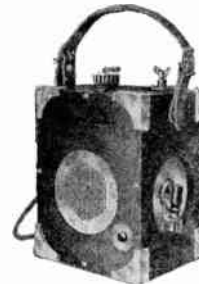
Code No.	Will Ring Through Ohms	Consists of
90530	10000	1 No. 22K Generator 1 No. 19B Ringer
90510	35000	1 No. 22K Generator 1 Special No. 19 Ringer
90511	50000	1 No. 22N Generator 1 No. 19A Ringer
90512	100000	1 No. 22N Generator 1 No. 19B Ringer

Size of case is  $5\frac{1}{4} \times 6\frac{5}{8} \times 5\frac{1}{4}$  inches.

It is finished in birch.

## No. 1017 Type Western Electric Test Sets

No. 1017 Type



No. 1017B

A wooden box telephone test set equipped with a regular local battery talking circuit consisting of a No. 266 transmitter, No. 13 induction coil, No. 189 receiver and a special three-cell dry battery unit.

NOTE.—The No. 1017C test set differs from the No. 1017B only in that it is equipped with a specially designed high efficiency generator. The No. 1017B will, under ordinary conditions, be found entirely satisfactory, but in case a more powerful set is required to meet unusual conditions, the No. 1017C set has been developed.

No. 1017B. For lightly loaded lines—it will ring 15, 2500 ohm bells over a 15 mile No. 12BB iron metallic line.

Code No.	Weight Including Battery Pounds	Size of Case Inches	Finish
1017B	8	$4\frac{7}{32} \times 6\frac{3}{32} \times 7\frac{7}{32}$	{ Birch { Mahogany
No. 1017C	For moderately loaded lines—it will ring 33 2500 ohm bells over a 15 mile No. 12BB. iron metallic line.		
1017C	8	$4\frac{7}{32} \times 6\frac{3}{32} \times 7\frac{7}{32}$	{ Birch { Mahogany



**Western Electric Lead Covered Telephone Cable**



The outside plant is a very important part of any telephone system. Unless satisfactory material is used in its construction, it is impossible for a telephone company to furnish satisfactory service even though the central office and sub-station equipment is of the best. Lead covered cable represents not only a large part of the capital invested in the outside plant, but also a most important part of the construction due to its function of being the transmitting medium for telephone messages.

There are certain characteristics which lead covered cable must possess in order to properly and efficiently function in a telephone system:—

1. It must be so constructed that it will have long life and thereby reduce depreciation to a minimum.
2. It must be designed to transmit telephone messages with a minimum transmission loss.

The Western Electric Company manufactures cable designed to conform to the above requirements and by virtue of the fact that its experience in this field covers the entire period since the first successful installation of lead cable for telephone use, its product is as nearly perfect as present day knowledge of the telephone art permits.

The Western Electric Company occupies an important position in the manufacture of lead covered cable for telephone use by virtue of the following facts:

1. It is the largest manufacturer of this commodity.
2. It has specialized on, and developed this product since its origin.
3. It manufactures for the largest users.
4. It is responsible for practically every important development and improvement.
5. Conscientious careful inspection and testing make sure that specifications are rigidly adhered to.
6. The design and development work is done by the largest force of telephone experts in the world.

Cable for aerial and underground telephone use is composed of copper conductors, insulated with paper, twisted into pairs and enclosed in a lead sheath. In general, cable with single wrapped conductors is recommended, since its electrical and mechanical characteristics are perfectly satisfactory for most conditions, and the cost is less than cable with double wrapped conductors.

The sheath is made of pure lead, lead antimony alloy or lead tin alloy. Experience has shown that while either lead antimony or lead tin is satisfactory for aerial or underground cable, the former alloy, being somewhat cheaper, is more generally used. While pure lead cannot be recommended where the cable is subjected to vibration, it is satisfactory for use within buildings.

**Extra Pairs**

Extra pairs are placed in all cables containing conductors smaller than No. 16 to take care of any pairs which may become defective in manufacture. In the majority of cables all or part of the extra pairs will often be found good and may be used for additional circuits. All pairs of No. 16 A.W.G. and larger except in submarine cable are guaranteed to meet the specification requirements when the cable leaves our factory.

The coding of all cables is on the basis of the actual number of pairs. Actual and guaranteed numbers of pairs in the various sizes of standard cables containing conductors smaller than No. 16 A.W.G. are as follows:

Actual Pairs	Guaranteed Pairs
6 to 149	Actual pairs less one
150 " 249	" " " two
250 " 349	" " " three
350 " 449	" " " four
450 " 505	" " " five
606	" " " six
909	" " " nine
1212	" " " twelve
1818	" " " eighteen

**Western Electric Lead Covered Telephone Cable**

Continued



Cable Yard at Hawthorne Works

**Transmission**

The transmitting efficiency of telephone cable, considered as a separate unit, depends principally upon its capacitance and conductor resistance. When telephone cable forms a portion of a completed telephone connection, the transmitting efficiency of the telephone connection as affected by the cable portion depends somewhat on the relative position of the cable in that circuit and also by the type of other construction to which it is connected.

The following data are based upon average standard conditions, and may be used for approximate calculations. In the case of circuits involving several different types of construction, we recommend consulting our engineers.

A length of circuit which, when connected to short subscribers' loops, will cause a transmission loss of about 30 db (units of transmission loss, called decibels) is considered about the maximum length over which commercial transmission can be secured.

One db represents approximately the loss found in the following:

- 3.2 miles of No. 12 B.W.G.—B.B. galvanized iron circuit.
- 4 miles of No. 10 B.W.G.—B.B. galvanized iron circuit.
- 8 miles of No. 14 N.B.G. or No. 12 A.W.G. hard drawn bare copper circuit.
- 13 miles of No. 12 N.B.S. hard drawn bare copper circuit.

It then follows that 96 miles is about the theoretical commercial limit for No. 12 B.W.G.—B.B. galvanized iron wire circuit.

Under each listing is given the respective transmission loss or attenuation in db per mile of cable.

**Capacitance**

The capacitance of a cable circuit is important because it limits to a large extent the length of cable through which it is possible to transmit speech. The capacitance may be specified either as mutual, that is, the capacitance between the two wires or a pair; or as grounded, that is, the capacitance between a wire and all the other wires and the sheath. Mutual capacitance is preferable in defining the quality of the cable for telephone transmission, since the conductors are used in pairs as metallic circuits and seldom, if ever, singly as grounded lines. The grounded capacitance is about 1.6 times the mutual, but this ratio varies somewhat for different cables.

Capacitance may be measured by the d.c. charge method, the d.c. discharge method, or the a.c. method. The a.c. method, using a frequency of 800 cycles or higher, is preferable because it measures the true capacitance for the voice currents. The d.c. capacitance tends to be higher than the a.c. capacitance, and in specifying capacitance this fact should be recognized. The d.c. charge method is less subject to error due to improper manipulation of the testing equipment than the d.c. discharge method, and is therefore a more desirable testing procedure for d.c. testing.

Western Electric Cables are tested for mutual capacitance by the a.c. method, unless specifically requested otherwise.

## Western Electric Lead Covered Telephone Cable

Continued

### Special Cables

Special conditions often require cables with different characteristics from those which have been standardized and coded. Paper insulated cable, designed to withstand test potentials up to 1500 volts a.c., is supplied for special circuits such as for telegraph or signal circuits. If your condition necessitates special cable, write our nearest house, giving full details and information, and price will be furnished.

### Submarine Cables

Paper insulated submarine telephone cable may be divided into three general classes, depending upon the use for which they are intended.

1. High dielectric strength, tight core cable, designed for use in comparatively long lengths, where the cost of repairing a break in the cable will be less than the cost of an entirely new cable.

2. High dielectric strength, loose core cable, designed for use in comparatively short lengths, where high transmission efficiency and high dielectric strength are of importance; for example: a short river crossing cable connecting important open wire.

3. Single paper insulated loose core cable designed for use in comparatively short lengths where so high a dielectric strength is not necessary; for example: a short river crossing cable connecting land cables.

Either single or double armored cable can be furnished. In many cases, single armor gives sufficient mechanical protection. Double armor is used only in cases of extremely severe mechanical requirements. In still water with a mud bottom, single armor will be sufficient. With a rocky or uneven bottom, or with strong tides or currents, double armor should be considered.

### Composite Cables

Composite cable, that is, composed of conductors of two or more gauges can be furnished if desired. The combinations of pairs which will utilize the space within the lead sheath most economically are somewhat limited and our cable engineers will make recommendations along this line upon receipt of detail information as to the conditions to be met.

### Terminating Cables

Paper insulated cables are usually terminated in buildings by splicing on a short piece of textile insulated cable. Commercial textile yarns are liable to contain soluble salts, which will cause electrolytic action when exposed to moist atmospheres and result in poor insulation and sometimes produce corrosion of the conductors. It has been found that by removing such impurities substantial improvements of the insulating properties of the textiles are obtained. Only purified textiles are used in Western Electric Cables.

The uses of the several types of textile insulated cables listed in the tables following are discussed briefly below.

Types FA and GA cables are generally used for terminating. In Type FA cable all pairs, except a tracer pair, have the same colors of insulation. In Type GA cable each pair is distinguishable from every other by a color code. These two types of cable are made up of wires covered with two servings of silk and an outer serving of cotton.

Type AUA has conductors covered with two servings of cotton and an outer film of lacquer. This type of cable should be used where there would be objections to the usual method of waxing the exposed insulated conductors during installation. It replaces Type UA cable.

Types MFA, MGA, and NUA are similar to Types FA, GA, and AUA respectively, except that the conductors are enameled. The enameled cables are intended for the same kinds of service as the other three types, but are used where the humidity may be quite high for rather long periods, as, for example, near the sea coast in warm climates.

Cables with wool insulated conductors were once used for terminating, but it has been found that the cables described above are equally satisfactory for this purpose and are less expensive and easier to handle.

## Western Electric Lead Covered Telephone Cable

Continued

### Cables for Burying Directly in the Ground

There are many situations where cables buried directly in the ground would offer advantages over other forms of construction. The life of unprotected cable sheath may be very short, depending upon the particular soil conditions. To meet this need, the Western Electric Company have developed a type of covering for the cable sheath which effectively protects the sheath from soil corrosion. This protection consists of wrappings of paper and jute which have been thoroughly impregnated with preservative compound and which are thoroughly flooded with asphaltic compound while being applied to the cable. Cables having this type of covering are referred to as jute protected. In cases where somewhat more mechanical protection is desired or where some protection against low frequency induction from power lines is desired, a steel tape armor can be furnished. This type of sheath covering is similar to that used for the jute protected cables except for the addition of the steel tapes and a further covering of asphalt flooded jute.

Jute protected cables are about  $\frac{5}{32}$  inch larger in over-all diameter than the unprotected cables for the smaller sizes and about  $\frac{1}{16}$  inch larger for full size cables. For the tape armored cables, the increase in diameter varies with the size of the cable from about  $\frac{1}{4}$  inch to about  $\frac{3}{16}$  inch. Any lead covered cable can be furnished either jute protected or tape armored if so noted on the order.

### Recent Developments

A new form of paper insulation has been developed by the Western Electric Company which is known as pulp insulation because of its method of application to the wire. The paper is made directly on the conductor in such a way as to form a continuous, seamless tube.

A new method of constructing cable cores, known as the multiple unit design, has also been developed by the Western Electric Company. Units of 50 or 100 pairs are first separately stranded and then these units are cabled together to form the completed core. This construction offers a distinct advantage in splicing in that the color groups are units and require practically no time for separating in preparation for splicing.

No. 26 gauge cables, coded as Type AST, No. 24 gauge cables, coded as Type CSM, and No. 22 gauge cables coded as Type CSA are now regularly furnished with pulp insulation for all sizes and with the multiple unit design in sizes of 152 pairs and larger.

### Type CSA Cable

For Aerial or Underground Use

SHEATH.—Lead antimony.

CONDUCTORS.—No. 22 A.W.G., pulp insulation, with color groups depending upon size.

MUTUAL CAPACITANCE.—A.C. testing, .090 microfarad per mile of cable.

CONDUCTOR RESISTANCE.—Not exceeding 92 ohms per mile of cable at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 500 volts.

ATTENUATION.—1.8 decibels per mile at 1000 cycles.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reel
CSA- 11	10	.070	.44	.45	3500
CSA- 16	15	.070	.48	.52	3500
CSA- 26	25	.070	.58	.67	3500
CSA- 51	50	.070	.73	.95	3000
CSA- 76	75	.075	.87	1.27	2500
CSA-101	100	.080	.99	1.58	2500
CSA-152	150	.080	1.16	2.03	1600
CSA-202	200	.085	1.33	2.55	1600
CSA-303	300	.095	1.60	3.58	1400
CSA-404	400	.095	1.78	4.28	1200
CSA-606	600	.105	2.15	6.02	900
CSA-909	900	.115	2.61	8.50	650

**Western Electric Lead Covered Telephone Cable**

Continued

**Type CSM Cable**

For Aerial or Underground Use

SHEATH.—Lead antimony.

CONDUCTORS.—No. 24 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING.—Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE.—A.C. testing, .080 microfarad per mile of cable.

CONDUCTOR RESISTANCE.—Not exceeding 145 ohms per mile of cable, at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 500 volts.

ATTENUATION.—2.2 decibels per mile at 1000 cycles.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
CSM- 11	10	.070	.39	.38	3500
CSM- 16	15	.070	.44	.45	3500
CSM- 26	25	.070	.52	.56	3500
CSM- 51	50	.070	.64	.77	3000
CSM- 76	75	.075	.76	1.02	2500
CSM- 101	100	.075	.85	1.20	2500
CSM- 152	150	.080	1.00	1.59	2500
CSM- 202	200	.080	1.14	1.91	1800
CSM- 303	300	.085	1.36	2.56	1600
CSM- 404	400	.090	1.56	3.22	1400
CSM- 606	600	.105	1.90	4.69	1100
CSM- 909	900	.115	2.29	6.51	900
CSM-1212	1200	.115	2.61	7.97	650

NOTE.—Type ASM available in single dry paper tape insulation, layer stranding.

**Type AST Cable**

For Aerial or Underground Use

SHEATH.—Lead antimony.

CONDUCTORS.—No. 26 A.W.G. pulp insulation, with color groups depending upon size.

STRANDING.—Multiple-unit design 152 pairs and larger.

MUTUAL CAPACITANCE.—A.C. testing, .080 microfarad per mile of cable.

CONDUCTOR RESISTANCE.—Not exceeding 230 ohms per mile of cable at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 500 volts.

ATTENUATION.—2.7 decibels per mile at 1000 cycles.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Stock Reel Length Feet
AST- 11	10	.070	.36	.34	3500
AST- 16	15	.070	.40	.40	3500
AST- 26	25	.070	.45	.46	3500
AST- 51	50	.070	.58	.64	3500
AST- 76	75	.070	.66	.78	3000
AST- 101	100	.070	.73	.91	3000
AST- 152	150	.075	.87	1.20	2000
AST- 202	200	.080	.97	1.47	2000
AST- 303	300	.080	1.16	1.89	1600
AST- 404	400	.085	1.33	2.36	1600
AST- 606	600	.095	1.60	3.30	1400
AST- 909	900	.105	1.90	4.56	1100
AST-1212	1200	.105	2.15	5.51	900
AST-1818	1800	.115	2.61	7.73	650

**Western Electric Lead Covered Telephone Cable**

Continued

**Type CNB Cable**

For Aerial or Underground Use

SHEATH.—Lead antimony.

CONDUCTORS.—No. 19 A.W.G. single dry paper tape insulation, with color groups depending upon size.

MUTUAL CAPACITANCE.—A.C. testing, .090 microfarad per mile of cable.

CONDUCTOR RESISTANCE.—Not exceeding 46 ohms per mile of cable, at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 700 volts.

ATTENUATION.—1.3 decibels per mile at 1000 cycles.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
CNB- 6	5	.070	.44	.45	3500
CNB- 11	10	.070	.53	.60	3500
CNB- 16	15	.070	.61	.72	3500
CNB- 26	25	.070	.72	.93	3000
CNB- 51	50	.075	.95	1.46	2500
CNB- 76	75	.080	1.14	1.98	1800
CNB-101	100	.085	1.30	2.48	1600
CNB-152	150	.090	1.56	3.37	1400
CNB-202	200	.095	1.78	4.25	1200
CNB-303	300	.105	2.15	5.98	900
CNB-404	400	.115	2.48	7.77	700
CNB-455	450	.115	2.61	8.46	650

**Type NH Cable**

For Aerial or Underground Use

SHEATH.—Lead antimony.

CONDUCTORS.—No. 16 A.W.G. single dry paper tape insulation. Blue orange pairs alternating with green orange pairs, except for 2 orange white tracer pairs, one in the center and one in the outside layer and a red orange pair in each layer containing an odd number of pairs.

MUTUAL CAPACITANCE.—A.C. testing .072 microfarad per mile of cable.

CONDUCTOR RESISTANCE.—Not exceeding 23 ohms per mile of cable, at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 1000 volts.

ATTENUATION.—.75 decibels per mile at 1000 cycles. All pairs guaranteed good.

Code No. and No. of Pairs	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
NH- 26	.080	1.13	1.79	1500
NH- 51	.090	1.52	2.94	1200
NH-101	.105	2.12	5.13	800
NH-152	.115	2.54	7.13	600



## Western Electric Lead Covered Telephone Cable

Continued

### Type FA Cable For Inside Construction

SHEATH.—Pure lead.

CONDUCTORS.—No. 22 A.W.G. tinned, double silk and single cotton insulation, covering on each pair colored white and red white.

TRACER PAIR.—One in outer layer colored blue and white.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

CONDUCTOR RESISTANCE.—Not exceeding 96 ohms per mile of cable, at 68 degrees Fahrenheit.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 700 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
FA-101	101	.063	1.00	1.42	2500
FA-152	151	.063	1.19	1.86	1600
FA-202	201	.094	1.41	2.93	1500
FA-303	302	.125	1.75	4.68	1200
FA-404	403	.125	1.97	5.62	1100
FA-606	605	.125	2.38	7.45	700

### Type GA Cable For Inside Construction

SHEATH.—Pure lead.

CONDUCTORS.—No. 22 A.W.G. tinned, double silk and single cotton insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE.—Not exceeding 96 ohms per mile of cable at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 700 volts.

Code No. and Guaranteed Pairs	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
GA-6	.047	.34	.25	3500
GA-11	.047	.41	.32	3500
GA-16	.047	.47	.39	3500
GA-21	.047	.52	.45	3500
GA-26	.047	.56	.51	3500
GA-31	.047	.59	.56	3500
GA-41	.047	.67	.67	3000
GA-51	.063	.77	.94	2500
GA-76	.063	.89	1.19	2500
GA-101	.063	1.00	1.42	2500
GA-152	.063	1.19	1.86	1600
GA-202	.094	1.41	2.93	1500

### Type AUA Cable For Inside Construction

SHEATH.—Pure lead.

CONDUCTORS.—No. 22 A.W.G. tinned, double cotton lacquered insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE.—Not exceeding 96 ohms per mile of cable at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 700 volts.

Code No. and Guaranteed No. of Pairs	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
AUA-6	.047	.34	.25	3500
AUA-11	.047	.41	.32	1000
AUA-16	.047	.47	.39	1000
AUA-21	.047	.52	.45	1000
AUA-26	.047	.56	.51	1000
AUA-31	.047	.59	.56	1000
AUA-41	.047	.67	.67	3000
AUA-51	.063	.77	.94	2500

## Western Electric Lead Covered Telephone Cable

Continued

### Type MFA Cable For Inside Construction

SHEATH.—Pure lead.

CONDUCTORS.—No. 22 A. W. G. tinned, black enamel, double silk and cotton insulation, covering on each pair colored white and red white.

TRACER PAIR.—One in outer layer colored blue and white.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

CONDUCTOR RESISTANCE.—Not exceeding 105 ohms per mile of cable, at 68 degrees Fahrenheit.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 700 volts.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
MFA-101	101	.063	1.00	1.42	2500
MFA-152	151	.063	1.19	1.86	1600
MFA-202	201	.094	1.41	2.93	1500
MFA-303	302	.125	1.75	4.68	1200
MFA-404	403	.125	1.97	5.62	1100
MFA-606	605	.125	2.38	7.45	700

### Type MGA Cable For Inside Construction

SHEATH.—Pure lead.

CONDUCTORS.—No. 22 A. W. G. tinned, black enamel, double silk and single cotton insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE.—Not exceeding 105 ohms per mile of cable, at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 700 volts.

Code No. and No. of Pairs	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
MGA-6	.047	.34	.25	3500
MGA-11	.047	.41	.32	3500
MGA-16	.047	.47	.39	3500
MGA-21	.047	.52	.45	3500
MGA-26	.047	.56	.51	3500
MGA-31	.047	.59	.56	3500
MGA-41	.047	.67	.67	3000
MGA-51	.063	.77	.94	2500
MGA-76	.063	.89	1.19	2500
MGA-101	.063	1.00	1.42	2500
MGA-152	.063	1.19	1.86	1600
MGA-202	.094	1.41	2.93	1500

### Type NUA Cable For Inside Construction

SHEATH.—Pure lead.

CONDUCTORS.—No. 22 A. W. G. tinned, enamel double cotton lacquered insulation, colored in accordance with standard color scheme so that each pair is distinguishable from other pairs in the cable.

CONDUCTOR RESISTANCE.—Not exceeding 105 ohms per mile of cable, at 68 degrees Fahrenheit.

INSULATION RESISTANCE.—Not less than 500 megohm miles.

DIELECTRIC STRENGTH.—Insulation of each conductor capable of withstanding an a.c. test potential whose maximum instantaneous value is 700 volts.

Code No. and Guaranteed No. of Pairs	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Weight Pounds per Foot	Convenient No. of Feet on Reels
NUA-6	.047	.34	.25	3500
NUA-11	.047	.41	.32	1000
NUA-16	.047	.47	.39	1000
NUA-21	.047	.52	.45	1000
NUA-26	.047	.56	.51	1000
NUA-31	.047	.59	.56	1000
NUA-41	.047	.67	.67	3000
NUA-51	.063	.77	.94	2500

**Western Electric No. 224-C Vacuum Tubes**

**Cathode Ray Oscillograph Tube**



The Western Electric No. 224-C Vacuum Tube is a Cathode Ray Oscillograph Tube which may be used to obtain the performance characteristics of nearly every kind of electrical apparatus. It particularly fills the need for an oscillograph operating at frequencies up to a million or more cycles per second.

The spot of light produced by the cathode ray on a fluorescent screen within the tube may be moved simultaneously in 2 directions by varying voltages applied to 2 pairs of internal deflector plates, or by current passing through external coils, the resulting trace giving the relation between the 2 currents or voltages. A deflection of one inch is produced by 25 volts on a pair of deflector plates or by 25-ampere turns in suitable coils.

The power equipment required for the tube is a 300-volt B battery and a 6-volt storage battery.

**Western Electric Type 20 Thermocouples**



Type 20 Western Electric Thermocouples are for high frequency current measurements. Used in conjunction with an ungrounded, wooden-cased galvanometer or microammeter, they measure alternating currents of frequency well over 1,000,000 cycles with the same accuracy as obtained with d.c. instruments.

High grade materials, electrical spot-welding of parts and enclosure in a glass envelope evacuated to the same degree as high grade thermionic tubes, insure constancy of calibration.

Matching of couple elements for maximum sensitivity makes possible operation up to 15 millivolts output, with moderate power input in the heater. The almost linear characteristic in the 5-15 millivolt range increases accuracy of reading. This also permits use of more rugged galvanometers for measuring d.c. output.

Type 20 Thermocouples are convenient, precise, and dependable. They are mounted in hardwood containers with sturdy positive contact binding posts and identification plates.

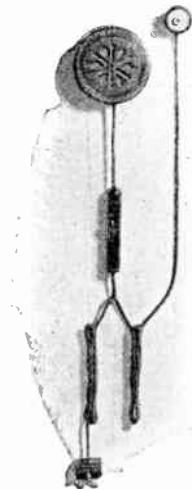
Type	Maximum Heater Resistance Ohms	Couple Resistance Ohms	Nominal Current at 5 Millivolts Ma.	Nominal Current at 15 Millivolts Ma.
20A	.35	3	450	850
20B	.65	3	200	400
20AA	2.0	3	70	140
20AB	6.0	3	35	70
20AC	15.0	12	14	28
20AD	40.0	12	5.6	11.2
20AE	300.0	12	2.8	5.6
20AF	1200.0	12	1.2	2.6

**Western Electric Audiphones**

Western Electric Audiphones reflect the skill and experience of their designers, Bell Telephone Laboratories and their makers, Western Electric Company—both leaders in the sound transmission field.

**No. 36-A**

The No. 36-A audiphone, illustrated at the left, consists of a microphone, a receiver, a rheostat, connecting cords and battery plug. It is suitable for those with a moderate degree of hearing impairment. No. 36-A.....each \$50.00



**No. 37-A**

This audiphone differs from the No. 36-A in that an amplifier is added. This gives a wider hearing range and is suitable for those whose hearing impairment is of an extreme character. It is designed for those who wish to carry the transmitter and amplifier in separate pockets. No. 37-A.....each \$95.00

No. 37-A.....each \$95.00

**No. 38-A**

Similar to the No. 37-A, the No. 38-A is also equipped with an amplifier and is also suitable for those having a considerable hearing impairment. This audiphone has the microphone, rheostat and amplifier assembled in a neat, metal box. It is offered for those who prefer to carry this box rather than having the transmitter and amplifier in their pockets. No. 38-A.....each \$95.00

No. 38-A.....each \$95.00

**Audiphone Accessories**

Two types of ear pieces are available, a stock earpiece furnished with each audiphone or if preferred an individually moulded earpiece (not included in price). The No. 12-A carrying case is available for use with the No. 38-A audiphone. The No. 11-C battery box is a convenient means of carrying the batteries needed with all three models. Special batteries for audiphone use are available.

**Western Electric Audiometers**

**No. 2-A**

Offers physicians an accurate, dependable method of testing the acuity and quality of their patients' hearing. Office assistants can easily and accurately chart each patient's hearing and file charts for comparative records. No. 2-A.....each \$550.00

No. 2-A.....each \$550.00

**No. 3-A**

Developed for use in industrial health work. By use of this instrument hearing tests are made speedily and accurately. No. 3-A.....each \$400.00

No. 3-A.....each \$400.00

**No. 4-A**

Designed for school use; enables the school physician or teacher to periodically check an entire classroom at one time. As many as 500 children can be checked within one school day. No. 4-A.....each \$518.50

**No. 5-A**

Successfully used in schools, industrial offices, automobile license examination rooms and by railroads. No. 5-A.....each \$235.00

No. 5-A.....each \$235.00



Full information on these audiometers on request.

# Western Electric

## Commercial and Police Radio Broadcasting Equipment

Broadcasting today has become a vital and recognized factor in the entertainment and education of the American public. The broadcasting business has achieved this recognition by successfully assuming their two outstanding obligations to listeners in (1) Constantly improving the quality and variety of programs and (2) Improving the quality and performance of their equipment.

Station popularity comes as a direct result of sending out clear, undistorted programs of merit with the least possible number of interruptions and at a satisfactory volume. Western Electric offers broadcasting executives a complete service to help them improve the quality, volume and continuity of their broadcasting. Bell Telephone Laboratories, leaders in sound research, are continually

### 50-Watt Police Transmitters



This new police transmitter offers the latest and best equipment for modern police work.

Police requirements in some sections showed the need for a 50-watt transmitter and it has been carefully designed to meet every police need.

Clear, dependable voice transmission is a feature of all Western Electric Police Radio Transmitters.

### 400-Watt Police Transmitters



More than 40 cities in every part of U.S.A. are using Western Electric Police Radio to combat crime in their police work. The success of police radio is no longer questioned—police officials everywhere recognize its importance in their work.

Western Electric Police Radio Transmitters have improved facilities for maintaining frequency stability. Speech is transmitted with great precision. Its superiority of mechanical and electrical construction assures dependable operation. The equipment is compactly assembled and operating costs are low. The equipment was designed and manufactured to meet the needs of police radio work.

studying, checking, testing and developing new equipment and improvements on equipment already introduced. Western Electric adds precision manufacturing, using the choicest of materials in producing the highest quality apparatus. Graybar Electric offers these soundly developed, well manufactured devices to you through its conveniently located offices in 73 principal cities throughout the United States.

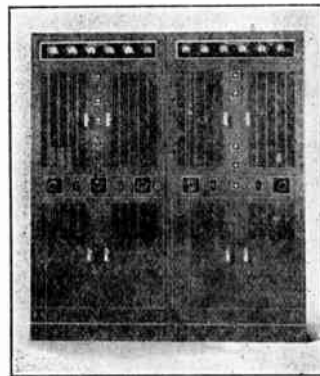
### Police Radio

In considering the problem of police radio, dependability in operation and clear transmission are often a matter of life and death. In the development of police radio equipment, Bell Laboratories and Western Electric have spared no expense to secure the utmost in quality and dependability.

### 100, 500 and 1000-Watt Commercial Broadcasting Transmitters

Western Electric offers commercial broadcasters a complete line of transmitting and speech input equipment from 100 watts to 500000 watts.

The 304-A Western Electric Transmitter has a power of 1000 watts secured by increasing the power of the 12-A transmitter (100 watts) by use of the 71-A amplifier. This unit can also be adapted to give a power output of from 100 watts to 1000 watts.



This equipment is a.c. operated, compact and offers the advantages of radiation cooled tubes, the latest in circuit arrangements, harmonic suppression, automatic control circuits and quality construction. It offers the small station owner the opportunity of easily and quickly increasing his power output along the most improved and up-to-date lines.

### 5000, 50,000 and 500,000-Watt Transmitters

The 5000, 50000 and 500000-watt transmitters offer station owners the very latest developments in the art of radio transmission. Dependability, quality of transmission, compactness and ease of operation were all considered carefully in the development and manufacture of these transmitters. Details regarding this equipment will be gladly furnished.

### Speech Input Equipment

Western Electric 9-A Speech Input Equipment offers flexibility of equipment in handling studio as well as remote pick-up points. Microphone switching, together with mixing apparatus and monitor speakers, are all provided with this equipment. Other advantages are a.c. operation, moving coil microphones, improved volume indicator, single panel mounting, factory wiring and master gain control.

### Police Radio Receivers

Graybar offers police departments a superior receiving set manufactured by the Stromberg-Carlson Company. This set was particularly designed to meet the special requirements of police work and represents the result of our experience with police radio installations in New York, Chicago, Detroit, Rochester and Atlanta.



## Western Electric

Public Address, Music Reproducer, and Radio Distribution Systems

Wherever large groups of people gather, indoors or out, there is a need for Public Address Equipment. Speech or music may be reinforced and, with excellent quality, reproduced so that everyone will hear perfectly.

Public Address Equipment is used for entertainment and education, at public meetings, for re-broadcasting radio programs, amplifying record music for dancing, or music appreciation study, making announcements, amplifying speakers' voices, advertising purposes, descriptions of races, baseball and football games, paging, and a dozen and one other sound transmission purposes.

Bell Telephone Laboratories, recognized leaders in the development of sound transmission, are responsible for the design of all Western Electric Public Address Equipment. To sound design, Western Electric adds all the advantages to be derived from their well-known high standards of manufacturing. This material is made available to users everywhere in U. S. A. through Graybar's 73 conveniently located offices. More than 1300 installations of Western Electric Public Address Equipment have given us an experience in this field of great value to prospective users.



No. 204-A Music Reproducer

### Hotels, Restaurants, and Clubs

The New Waldorf-Astoria illustrates the many uses for Western Electric Public Address Equipment and this installation is an indication that our equipment is accepted by the leaders.

Paging, voice amplification, transmitting programs of dance music (either records or hotel orchestra) wherever desired, re-broadcasting selected radio programs—any or all these things can be done through using our equipment.

Quality of reproduction is assured if Western Electric Equipment is used.

### Schools and Colleges

Western Electric Equipment was selected for such modern schools as the Brooklyn Technical High School (Brooklyn, N. Y.) and the University of Texas.

Educators have found Public Address Equipment useful for many classroom, auditorium, gymnasium, and athletic field activities.

Our booklet "Greater Educational Facilities" will prove interesting to anyone in the field of education.

### Churches and Auditoriums

For clear, undistorted voice amplification choose Western Electric Equipment—this has been the decision of many churches and auditorium managers.

To mention two leaders—the Atlantic City Auditorium (Atlantic City, N. J.) and St. Justian's Church (Hartford, Conn.).

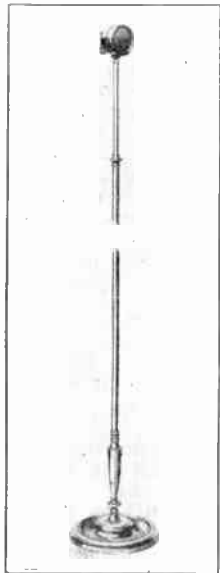
### Outdoor Installations

For outdoor installation of all types—amusement parks, football fields, baseball parks, race tracks, and others, Western Electric Equipment has proven thoroughly satisfactory.

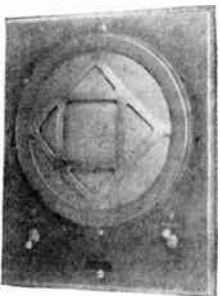
A few of the largest installations are Playland Park (Rye, N. Y.), Rose Bowl (Pasadena, Cal.), Athletics Ball Park (Philadelphia, Pa.), and several well-known tracks and other types of outdoor installations.

### Special Wire and Cords

Special wire and cords for Public Address and Speech Input Wiring can be furnished by Graybar. These wires and cords have been specially designed and manufactured for this type of installation work and full information and prices are available to any one from Graybar's 73 distributing houses or direct from executive headquarters at 420 Lexington Avenue, New York City.



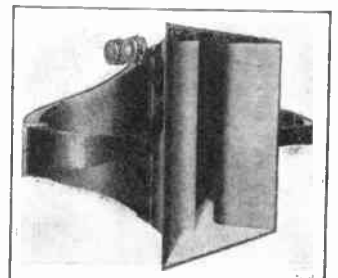
No. 618-A-13 Microphone



No. 575-A Loud Speaker



Amplifier Panel Assembly  
with Radio Receiver



No. 6116-A Loud Speaker

# RADIO

The Graybar Electric Company offers its dealers a line of radio sets manufactured by the Colonial Radio Corporation of Buffalo, N. Y.

*COLONIAL RADIO.*—Always abreast of the time in circuit, style and construction and meeting the most exacting of performance requirements, embodies dealer and buyer advantages which make it one of the most outstanding lines on the market.

Every set produced at the huge plant in Buffalo, N. Y., must measure up to these Graybar-Colonial standards before it is offered to the trade. From the standpoint of engineering, it must be equal to or better than any other set in its class. From the standpoint of value, it must have the construction features and the style and deliver

performance equal to or better than any other set at the price. From the standpoint of merchandising, it must have the popular

appeal which makes it a live, moving number in the dealer's store.

This is why an ever increasing number of retailers regard Colonial Radio as one of their dependable, year-in and year-out sources of profit. It is made right, priced right and promoted right for successful radio retailing. It is endorsed by Graybar as being in every way worthy of the dealer's and the buyer's confidence.

All of the new and proved radio developments are present in the current line. Literature describing the new models and the complete advertising and merchandising

service available to the trade may be obtained from any of the branches of the Graybar Electric Company.

## JUDGE IT BY THESE "10 Features"

Get the facts. Compare Colonial Radio point by point with these 10 features as your guide:

1. ENGINEERING
2. CONSTRUCTION
3. PARTS
4. POWER
5. SELECTIVITY
6. TONE
7. OPERATION
8. DEPENDABILITY
9. SERVICE
10. GUARANTEE



Licensed by Radio Corporation of America and Associated Companies.

## RCA Radiotrons



Type	Each	†Cathode	Volts	Type	Each	†Cathode	Volts
RCA-1A6	\$1.75	Filament	2	RCA-47	\$1.30	Filament	2.5
RCA-2A3	2.25	Filament	2.5	RCA-48	3.00	D. C. Heater	30.0
RCA-2A5	1.60	Heater	2.5	RCA-49	1.70	D. C. Filament	2.0
RCA-2A6	1.60	Heater	2.5	UX-50	4.00	Filament	7.5
RCA-2A7	2.20	Heater	2.5	RCA-53	1.80	Heater	2.5
RCA-2B7	2.00	Heater	2.5	RCA-55	1.60	Heater	2.5
RCA-5Z3	1.50	Filament	5.0	RCA-56	1.20	Heater	2.5
RCA-6A4	1.60	Filament	6.3	RCA-57	1.65	Heater	2.5
RCA-6A7	2.20	Heater	6.3	RCA-58	1.65	Heater	2.5
RCA-6B7	2.00	Heater	6.3	RCA-59	2.00	Heater	2.5
RCA-6C6	1.25	Heater	6.3	RCA-71-A	.75	Filament	5.0
RCA-6D6	1.25	Filament	2.0	RCA-75	1.60	Heater	6.3
RCA-6F7	1.80	Heater	6.3	RCA-77	1.80	Heater	6.3
RCA-12Z3	1.20	Heater	6.3	RCA-78	1.80	Heater	6.3
RCA-25Z5	2.00	Heater	25.0	RCA-79	2.60	Heater	6.3
RCA-01-A	.60	D. C. Filament	5.0	RCA-80	.70	Filament	5.0
RCA-1	1.50	Heater	6.3	UX-81	3.50	Filament	7.5
RCA-1-V	1.25	Heater	6.3	RCA-82	1.20	Filament	2.5
RCA-10	5.00	Filament	7.5	RCA-83	1.55	Filament	5.0
UX-112-A	1.30	D. C. Filament	5.0	RCA-84	1.75	Heater	6.3
RCA-19	1.50	D. C. Filament	2.0	RCA-85	1.60	Heater	6.3
RCA-22	2.00	D. C. Filament	3.3	RCA-89	1.80	Heater	6.3
RCA-24-A	1.20	Heater	2.5	UX-199	1.50	D. C. Filament	3.3
RCA-26	.65	Filament	1.5	*UX-200-A	4.00	D. C. Filament	5.0
RCA-27	.70	Heater	2.5	*WD-11	3.00	D. C. Filament	1.1
RCA-30	1.30	D. C. Filament	2.0	*WX-12	3.00	D. C. Filament	1.1
RCA-31	1.30	D. C. Filament	2.0	*UX-120	3.00	D. C. Filament	3.3
RCA-32	1.90	D. C. Filament	2.0	*UV-199	2.25	D. C. Filament	3.3
RCA-33	2.10	D. C. Filament	2.0	*UX-240	2.00	D. C. Filament	5.0
RCA-34	2.15	D. C. Filament	2.0	*UX-874	4.90	.....	....
RCA-35	1.30	Heater	2.5	*UV-876	6.70	.....	....
RCA-36	1.50	Heater	6.3	*UV-886	6.75	.....	....
RCA-37	1.20	Heater	6.3	UX-841	10.40	Filament	7.5
RCA-38	1.45	Heater	6.3	UX-842	10.40	Filament	7.5
RCA-39-44	1.50	Heater	6.3	RCA-868	7.50	.....	....
RCA-41	1.60	Heater	6.3	RCA-864	2.10	D. C. Filament	1.1
RCA-42	1.60	Heater	6.3	RCA-852	28.00	Filament	10.0
RCA-43	2.50	Heater	25.0	RCA-865	15.00	Filament	7.5
RCA-44-39	1.50	Heater	6.3	RCA-866	6.75	Filament	2.5
RCA-45	.75	Filament	2.5	.....	.....	.....	....
RCA-46	1.55	Filament	2.5	.....	.....	.....	....

\*No replacements are made on these types.

†Either a.c. or d.c. may be used on the filament or heater, except as noted.

## Prices

The prices given on appliance and radio items listed on pages 676 to 706 inclusive are, in general, eastern prices. Prices on the Pacific Coast are slightly higher. This does not apply to Radiotrons. These prices are subject to change without notice and are not to be considered as quotations.



## Graybar Clothes Washers

With and Without Pump

Four-bladed aluminum Agitators. Smooth finished with rounded corners. Top bearings of agitator shafts above water line.

Tanks are one piece amnco iron vitreous porcelain enameled. Ventilated covers.

Pumps of two-bladed centrifugal type, gear driven. Cleaned by removing face plate, lubricated by a grease cup.

Motors are furnished for any frequency or voltage. Insulated from frame. Operate both agitator and wringer or spinner basket at the same time. Waste packed bearings.

Mechanism fully enclosed. Operates in a special lubricant. The floor space is 25x25 inches.

Cord, 10 ft. rubber covered with rubber attachment plug.

### Two-Speed Washers

No. 18 Without Pump, No. 18P With Pump

Capacity, 8 lbs. Dry Clothes, 12 gals. water



**TWO-SPEED AGITATOR.**—At Fast Speed the agitator oscillates approx. half a revolution at a speed of approx. 60 cycles per minute. At Slow Speed it oscillates a third of a revolution. Action controlled by positive clutches operated by single selective control lever.

**CHASSIS.**—Shallow cylindrical steel shell with superstructure of steel, mounted on three braced pressed steel legs. Cadmium-plated casters.

**TANK.**—Supported and clamped between rubber mountings in chassis. Green outside, white inside. Rubber rimmed. Cover polished sheet aluminum. Tank 14 1/4 in. deep, 22 in. diam.

**MECHANISM.**—Belt drive for the first reduction and worm gearing for second reduction. An oil pump within gear mechanism lubricates moving parts.

**PUMP.**—Operated by a lever on outside of machine. Tank is

also self draining, no shut-off valve. Nickel plated removable strainer.

**MOTOR.**—Approximate rating 300 watts, 1/4 h.p. Movable for adjustment of belt tension.

Shipping weight, No. 18, 245 lbs., No. 18P, 250 lbs.

### Two-Capacity Washers

No. 19 Without Pump, No. 19P With Pump

Capacity, Full Load, 8 lbs. Dry Clothes, 12 gals. Water  
Small Load, Between 2 1/2 or 3 lbs. 6-7 Gallons of Water



Two finishes—speckled green, black and white.

**TWO-CAPACITY AGITATOR.**—Reversible. Agitator disc at bottom of tank, upright for Full Load and Reversed for Small Load. Oscillates approx. half a revolution at speed of approx. 57 cycles per min. Action controlled by positive clutch operated by lever.

**CHASSIS.**—Pressed steel base mounted on four braced pressed steel legs. Cadmium-plated casters.

**TANK.**—Vertically corrugated. Cover, terneplate lacquered on outside surface. Tank is 13 in. deep, 22 in. diameter.

**MECHANISM.**—Single worm gear reduction. Moving parts lubricated by splash system.

**PUMP.**—Operates when motor is running. Cast brass shut-off valve controls draining.

**MOTOR.**—Approximate rating 300 watts, 1/4 h.p. Shipping weight for No. 19, 182 lbs., No. 19P, 188 lbs.

### Simplified Washers

No. 15 Without Pump, No. 25 With Pump

Capacity, 6 lbs. Dry Clothes, 10 gals. Water



Centrifugal types, spinner basket in place of wringer. Special feature, basket, mounted on a separate shaft is in same tank with agitator, thus conserving floor space. Both operate simultaneously and are controlled by one switch. The second batch of clothes washes while the first batch dries, a convenience and time saver.

**AGITATOR.**—Is mounted on a splined agitator shaft within the center column and so designed that it cannot fit over the spinner shaft. Agitator oscillates between 140° and 150° at a speed of approx. 72 cycles per min.

**SPINNER BASKET.**—One piece drawn sheet aluminum with separate breast ring double-locked seamed. Embossed base and perforated side. Exceptionally smooth inside and outside. Speed approximately 430 r.p.m.

**FRAME.**—Consists of three pressed steel legs joined together by a steel brace. There is a reinforcing brace for extra strength. Casters, rubber tired, self lubricating. Caster cups available if desired.

**TANK.**—Bolted to legs. Rubber rimmed. Cover, polished aluminum. Tank is 16 in. deep and 22 in. diameter.

**MECHANISM.**—A belt drive for the first reduction and a spur gear train for the second reduction. Moving part lubricated by splash system.

**PUMP.**—Operates whenever motor is running. Cast brass shut-off valve controls draining. Nickel plated brass strainer, easily removable.

**MOTOR.**—Vertical 1/8 h.p. approximate rating, 230 watts. Easy adjustment of belt tension is provided. Rubber bumpers clipped to leg brace absorb motor vibration.

Shipping weight, No. 15, 125 lbs., No. 25, 143 lbs.

### Wringers

Nos. 18, 18P, 19, 19P

Pressed steel cadmium plated wire brushed.

Reversible swinging types with soft rubber balloon rolls, 2 1/4 in. diameter, 12 in. long, clothes guides and tilting drain flume. Top section is separable.

Wringers swing and lock into any one of several operating positions. Simplified tension release, no gears, no oiling.

Wringers can be operated while agitators are running.

All the green finish models are equipped with wringer as illustrated, which has the release tension lever on top of wringer.

No. 19 black and white washers can be equipped with wringer having the new bar tension release located on both sides of wringer.

Prices upon Application

Apex Electric Ironers

Ironer has both ends unobstructed. Full open left end permits slipping of circular garments over roll.

With rubber-mounted, noiseless, horizontal motor fully insulated and enclosed in gear case. Knee control is rubber padded. Hand control is located on top of gear case. Intensified heat at full open end where major portion of ironing is done. Convenient control switches for motor and heating shoe. Has duo switch with bakelite housing and face plate.

Pilot light with Beetleware shield indicates current supply to heating element. With pressing lever to convert revolving roll to stationary pressing position for pleating or pressing. Shoe release lever permits open movement of shoe for cleaning or waxing; also an emergency release. Plated clothes rack swings to right of operator. Has rubber casters; two lock casters prevent movement while ironer is in use.

Model LF-3 Folding Ironer



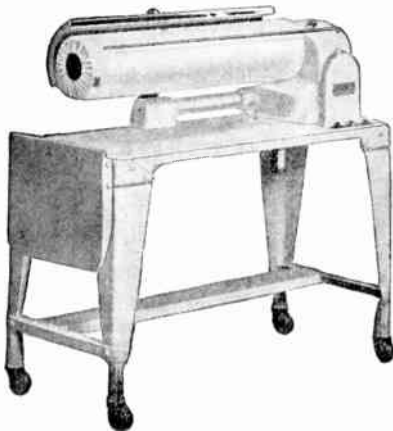
When ironer is closed it occupies no more space than a kitchen chair. Easy to fold or unfold.

Dimensions when open: Width, 36 inches; depth, 20 inches; height, 36 inches. Dimensions when closed: Width, 20 inches; depth, 20 inches; height, 47 inches.

Shipping weight, 176 pounds.

Model LF-3.....each \$89.50

Model LL-3—Stand Type Ironer



Has 4 steel legs which support frame and are anchored with cross frame brace. At left or full open end a folding tray of 161 square inches of area is provided to rest large pieces while ironing.

Width, 36 inches; depth, 16 inches; height, 36 inches.

Shipping weight, 150 pounds.

Model LL-3.....each \$79.50

Shoe is of polished chrome-plated steel. The 1200-watt capacity heating element is compressed between two plates of mica insulation and is secured to back of shoe by heavy steel binder plate over strip of asbestos.

A strong, well ribbed steel stamping with a formed skirt provides the main frame.

Roll construction: 20 gauge rolled steel 5 inches i.d.; 6 inches o.d.; reinforced at left or free end with recessed steel stamping to receive roll drive and a steel stamped ring at right to accommodate roll bearing—provides non-sagging base on which is wound a knitted cotton padding protected with removable muslin cover. Roll swings up and into shoe when in ironing position, affording an overall pressure in excess of 150 pounds. Clearance between roll and receiving pan, 4½ inches. Roll revolves at the speed of 11 feet per minute.

Model LC-3 Deluxe Console Ironer



Combines all the advantages of beauty and utility. Porcelain table top finished in white vitreous enamel, edged with ivory to harmonize with white sides of cover and ivory legs.

Cabinet is scientifically balanced—a touch swings it over and down to an out of the way position at the rear, exposing the ironer for instant operation.

Length, 36 inches; width, 19½ inches. Height: To top of shoe, 35½ inches; to top of cabinet closed, 36 inches. Width folded, 28 inches; height folded, 35½ inches. Space required when closed, 36x19½ inches.

Shipping weight, 188 pounds.

Model LC-3.....each \$99.50

Model LL-4 Stand Type Ironer



This ironer has 4 steel legs which support the frame and are anchored by cross frame brace.

Similar to Model LL-3 ironer but without folding tray.

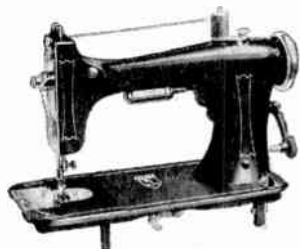
Width, 35 inches; depth, 16 inches; height, 36 inches.

Shipping weight, 140 pounds.

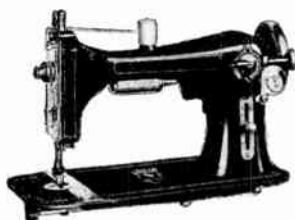
Model LL-4.....each \$59.50

## Graybar Sewing Machines

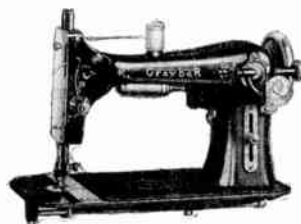
Standard Heads for Models 1731, 1728 and 1409  
With Knee Control



No. 2, Rotary  
Automatic Tension



No. 9, Shuttie  
Automatic Tension



Vindex C, Shuttie  
Side Tension, Disc Type

The three styles of standard heads, illustrated above, are full size lock-stitch types with chromium-plated bright parts, long slender lines giving streamline contour.

Equipped with built-in motor and built-in sewing light under arm, eliminating glare and shadows; small solid disc hand wheel, stitch regulator and bobbin winder.

### Cabinet Designs



Model 1731

Size, closed, 17 $\frac{3}{4}$ x23 inches. Height, 30 inches.

Walnut and gum richly finished. An attractive overlay of beautiful burl walnut is on front of door. Turned legs, gum finished to match cabinet. A cross stretcher makes them decidedly rigid and strong.

Equipped with any one of the three standard heads illustrated above.

Shipping weight, 87 pounds.



Model 1728

Size, closed, 17 $\frac{3}{4}$ x21 inches. Height, 30 inches.

Walnut and gum richly finished. Lid top and door front of matched burl walnut. The legs, constructed of gum finished to match cabinet, are strong and rigid. Striped walnut overlays ornament panels at top of legs.

Equipped with any one of the three standard heads illustrated above.

Shipping weight, 80 pounds.



Model 1409

Size, closed, 16 $\frac{1}{2}$ x20 inches. Height, 30 inches.

Walnut and gum richly finished. Door is relieved by overlays of walnut with a pendant near the top. Figured pilasters and beaded molding add further decoration. Turned legs, gum finished to match cabinet. Pocket for attachments in cabinet.

Equipped with any one of the three standard heads illustrated above.

Shipping weight, 87 pounds.

### Model 7000

Moderne in design, made of selected woods particularly adaptable for this style. The body is of genuine oriental wood similar in texture to our American walnut but with a finely figured mottle like burl.

Base and central feather on door, the edges of tops and overlays and the pilaster mountings are ebonized walnut.

The relief feather, frieze and pilasters on door are birdseye maple finished in rich tan pastel. The inlay trim is polished chromium.

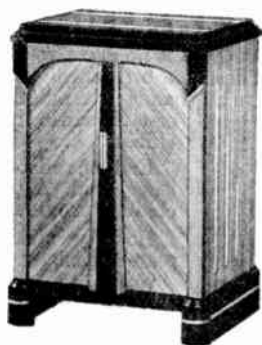
When open, there is ample knee room. A deep pocket and shelf provide space for attachments and accessories.

This model comes only with the No. 2 Rotary Head and is equipped with knee control.

Size, closed, 16 $\frac{1}{2}$ x20 inches. Height, 29 $\frac{1}{2}$  inches.

Shipping weight, 108 pounds.

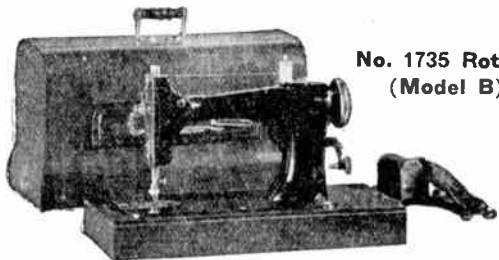
A Full Set of Attachments Comes with Every Machine  
Prices on Application





**Graybar Sewing Machines**  
With Foot Control  
Portables Nos. 1735 and 1120

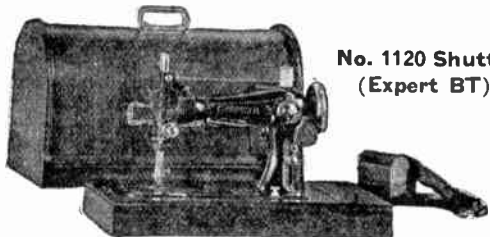
These models are designed with a view to convenience and compactness. When not in use they can be put away in the closet. Convenient to carry; set on any table; connect to any outlet. Constructed of genuine American walnut, and equipped with a convenient handle and locking device. There is a compartment in the base for attachments.



**No. 1735 Rotary (Model B)**

No. 1735 is equipped with the full-size standard No. 2 rotary head; lock stitch, built-in motor, automatic tension, sewing light, chrome-plated bright parts.

Shipping weight, 65 pounds.

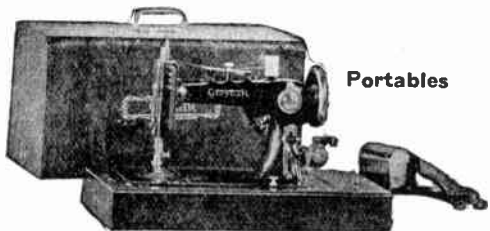


**No. 1120 Shuttle (Expert BT)**

No. 1120 is equipped with 3/4 size No. 1 head; long shuttle type, lock stitch, motor recessed in arm of machine, sewing light, light weight, chrome-plated bright parts.

Shipping weight, 60 pounds.

**Paveway Regal Models**



**Portables**

Low-priced shuttle types, 3/4 size head, lock stitch. Motor built close to arm to allow use of small solid disc hand wheel, a feature of the higher priced machines. Spring tension on top of arm. Chromium-plated bright parts. Walnut veneer base with drawer for accessories.

No. 6002—Walnut cover with handle and locking device. Shipping weight, 60 pounds.

No. 1090C—Rubberized cover instead of wooden. Lighter in weight. Shipping weight, 45 pounds.



**Cabinet No. 1408**

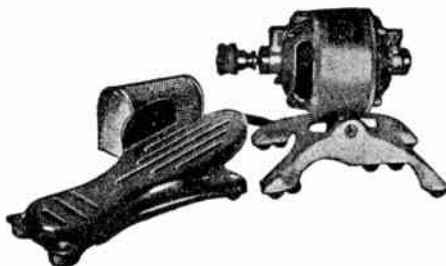
Size, closed 16 1/4 x 20 inches. Height, 30 inches.

Walnut and gun richly finished. Equipped with the same sewing head as the Paveway Regal Portable. Foot control.

Shipping weight, 82 pounds.

A Full Set of Attachments Comes with Every Machine  
Prices on Application

**Hamilton Beach Home Motors**

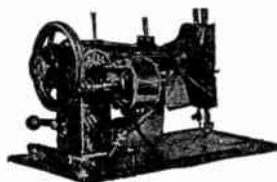


This motor can be attached to any sewing machine, old or new. Set the pulley of the motor underneath the handwheel of the machine and slight pressure of the foot on the

speed control starts the motor.

Price, Motor with Speed Control, Cord and Plug . . . ea. \$12.50  
Price, Fan Attachment . . . . . each 3.00  
Price, Grinder and Polisher Attachment . . . . . each 1.50

**Hamilton Beach Fit-All Sew E-Z Motors**



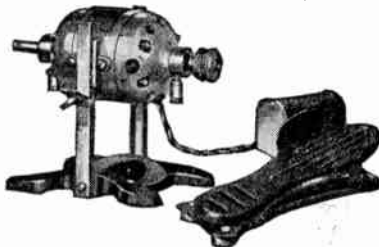
This bracket is readily adjustable to any make or model sewing machine. Attaches in belt holes very ingeniously and is permanent.

Swings under head. Sews fast or slow or speeds between. Controlled by a slight pressure on the speed pedal. Operates on both A.C. or D.C., 105 to 115 volts, 25 to 60 cycles.

Furnished with speed pedal, cord and plug.

Hamilton Beach Fit-All Sew E-Z Motors . . . . . each \$19.25

**Hamilton Beach Tailor Type Sewing Motors**



The tailor type motor fits and operates practically all types and models of light tailor machines.

SIZE OF MOTOR.—Diam., 3 1/8 inches; length, 5 1/2 inches; length of shaft, 7 3/4 inches. Size of pulley, 1-6 inches. Weight, 4 3/4 pounds.

Motor wound for 115 volts, a.c. or d.c., 25 to 60 cycles. Watts, 41 to 70.

Shaft extension outside of motor is equipped with friction attachment for winding bobbins.

Furnished with speed control, cord and plug.

Tailor Type Motor . . . . . each \$28.50

**National Detachable Sewing Lamps**

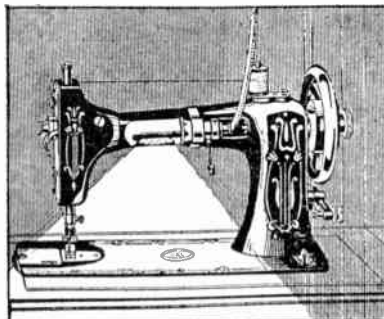
This lamp is so constructed that there is no glare to hinder the operator of the machine. There is a brilliant light on the needle and the work. Lamp fits all makes of treadle and electric sewing machines.

End of reflector is covered. A pull chain is provided.

Heavily nickel-plated finish.

With 6-foot cord and plug to fit any standard socket and wall outlet and Mazda lamp bulb.

Special voltage bulbs are extra.



Price, Complete with 110-Volt Bulb . . . . . each \$3.95

## Graybar Vacuum Cleaners

### No. 40 Two Speed with Motor Driven Brush



The outstanding feature of this motor-driven brush cleaner is its two speed motor, which gives a Normal Speed and an Extra Speed. The Normal Speed gives a powerful suction that does a thorough cleaning job on any type rug. But if a still more powerful suction is wanted, a flip of a switch located underneath motor shell, will give a much greater speed.

This Extra Speed is particularly advantageous for quick cleaning or when an unusually difficult cleaning job is to be done.

The motor is rated at 300 watts,  $\frac{1}{2}$  h.p., approximately 10,000 r.p.m. It is of unit construction and may easily be removed from the case. The motor is mounted on rubber supports which prevent excessive noise and vibration.

Overall dimensions, 14 inches wide by  $13\frac{1}{2}$  inches long. Height at highest point, 8 inches. Weight 16 pounds.

No. 40.....each \$47.50

### No. 46 Motor Driven Brush

**With Exceptionally Strong Suction**

Designed and manufactured to sell at an extremely low price that will be attractive to the consumer, yet it embodies the Graybar quality in construction and efficiency.

The motor is rated at 310 watts,  $\frac{1}{2}$  h.p., approximately 10,500 r.p.m.

Overall dimensions,  $13\frac{3}{4}$  inches wide and 12 inches long.

Height at highest point  $7\frac{1}{4}$  inches.

Weight 13 pounds.

No. 46.....each \$27.50

### Graybar

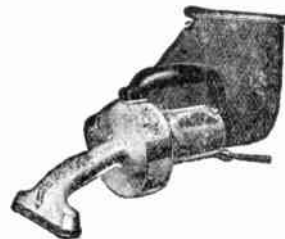
#### Hand Cleaners

The hand cleaner takes the place of vacuum cleaner attachments.

It cleans just as effectively and much more convenient to use.

#### No. 44 Handy Cleanerette

Equipped with built-to-the-hand handle, modeled after hand set telephones; flat on top; black moulded composition. Rubber bumper. The cleanerette has a rubber covered cord 15 feet long. Cord has moulded rubber attachment plug. Overall dimensions,  $11\frac{1}{2}$  inches long without the bag,  $19\frac{3}{4}$  inches long with the bag. Nozzle opening is  $5\frac{1}{8}$  inches long and  $\frac{5}{8}$  inches wide. Weight 4 pounds. Wattage 175.



No. 1 Accessory Equipment available for No. 44 cleaner consists of a combination blower and suction tool, a glass container, a rubber clamping device, an aluminum adapter with screen and a sample can of dichloride.

Separately priced at \$1.75.  
No. 44, without No. 1 Accessory Equipment.....each \$16.00  
No. 44, with No. 1 Accessory Equipment.....each 17.00

#### No. 50 Hand Cleaner

Hand cleaner is equipped with a black moulded composition handle and fabric covered cord 15 feet long. Cord has an attachment plug. Overall dimensions,  $9\frac{3}{4}$  inches long without the bag,  $16\frac{3}{4}$  inches long with the bag. Nozzle opening,  $4\frac{7}{8}$  inches long and  $\frac{5}{8}$  inches wide. Weight 3 pounds. Wattage 120.



No. 50.....each \$10.95

#### Specifications No. 44 and No. 50

**FINISH.**—Die cast aluminum nozzle and fan housing, drawn aluminum motor case.

**BAG.**—Dark blue, self-supporting with spring wire loop inside. Breach type connection to fan outlet. No. 44 has aluminum bag clip. No. 50 has aluminum bag clip, black enameled.

**MOTOR.**—Universal type, ball bearing needing no oiling. Seven-bladed suction, independent cooling fan which discharges air through slits in motor case.

**BRUSH.**—A small bristle brush permanently attached to the rear edge of nozzle.

**CONTROL.**—Tumbler switch located on top and at rear of motor housing, adjacent to handle.

### Specifications No. 40 and No. 46

**BALL-BEARING MOTOR.**—Horizontal, universal type. Kept cool by means of an independent cooling fan. Bearings packed in grease and require no oiling. Large sized motor brushes. Especially designed suction fan with seven steel blades.

**BODY AND NOZZLE.**—Aluminum castings. Polished all over. Supported on three wheels. Rear wheel swivelled on end of motor housing. Nozzle edge protected by rubber bumper. No. 40 has moulded rubber wheels. Front wheels fitted with large cadmium plated hub caps and adjustable to regulate nozzle height. No. 46 has rear wheel adjustable to regulate nozzle height.

**SIZE OF NOZZLE.**—No. 40 is 13 inches long and  $1\frac{1}{8}$  inches wide. No. 46 is 13 inches long and  $1\frac{3}{8}$  inches wide.

**HANDLE AND HANDLE BALE.**—Steel, chromium plated. Cord hooks, heavy gauge aluminum. Trigger-type switch. Handle is spring balanced and detachable at top of handle bale. Insulated by fibre sleeve. No. 40 has an adjustable tilting catch and composition handle grip, corrugated on the underside. No. 46 has a black enameled wooden handle grip.

**MOTOR DRIVEN BRUSH.**—Metal spindle with chinese bristles set in tufts in spiral formation. Ball-bearings. Belt reduction from motor. Endless belt of flat rubber, extra belt comes with each machine. Brush held firmly in spring sockets. No. 40 has a special brush adjustment, provides for three adjustments.

Bag of dark blue. Hooks on handle. Breach type connection to fan outlet. No. 40 has a clip type emptying clamp, chromium plated steel. No. 46 has bag clip of aluminum, black enameled.

**WIRING.**—Motor cord detachable at base of handle. No. 40 has a rubber covered conductor cord fitted with rubber attachment plug. Cord is 20 feet long. No. 46 has a black fabric covered conductor cord with attachment plug. The cord is  $18\frac{1}{2}$  feet long.



**Graybar Quiet Type Fans**

The Quiet-Type Fans move large volumes of air with exceptional quietness. This is made possible by the entirely new design of blades. These are so shaped and pitched that they handle the air extremely quietly, yet provide a volume of air and at a velocity found only in much larger Standard Fans. These fans will be popular for use in homes, hospitals, offices, etc. where quietness in operation is important. Blades are polished aluminum finished in clear lacquer to prevent tarnishing. Adjustable pedestals for tilting. 8 foot cord with plug.

**Non-Oscillating A.C.  
Small Model**



Something drastically different in design for a desk fan. Interestingly modernistic with entirely new lines. Base, stem and rear housing are zinc die castings, finished in black enamel with a silver bronze stripe around edge of base. Guard and guard supports also black enamel. Guard is a departure from conventional design. Center portion of front has been omitted to show the pointed blade shell and blade construction. Blade shell is die-cast aluminum on which are riveted the three blades. A tumbler switch, providing single-speed operation, is located in front of base. Base is supported on four rubber feet to prevent marring. Silk cord, rubber plug. Net weight, 7½ lbs., shipping weight, 12 lbs.

No.	Each	Volts	Current	Speed	Watts
55X164G	\$13.95	110	60 Cycles A.C.	1425	40
55X166G	13.95	110	50 Cycles A.C.	1300	40

**Oscillating A.C. and D.C.**



Motor, oscillating features and base of the oscillating Quiet-Type Fans are similar to those used on Standard fans. The guards are conventional in design but very deep to accommodate the fan blades. Perforated base for wall mounting. A felt strip on base prevents marring. Entire finish black enamel with exception of blades.

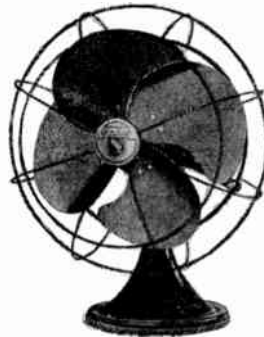
**Small Model, 3 Blades**

Motor, oscillating feature and base of this fan are similar to those used on the Standard 10-inch Oscillating Fan. Three deep-pitch blades, single speed.

Net weight, 7½ lbs., shipping weight, 12 lbs.

No.	Each	Volts	Current	Speed	Watts
55X165G	\$14.95	110	60 Cycles A.C.	1490	37
55X167G	14.95	110	50 Cycles A.C.	1310	37
49X478G	16.95	110	Direct Current	1490	23

**Large Model, 4 Blades**



This fan has four deep-pitch, 12-inch blades, and three speeds. Motor, oscillating feature and base are similar to those used on the Standard 16-inch Oscillating Fan.

This fan gives an air movement equivalent in cooling power to the 16-inch fan and yet has a quietness of operation equivalent to the conventional 12-inch.

Net weight, 17 lbs., shipping weight, 24 lbs.

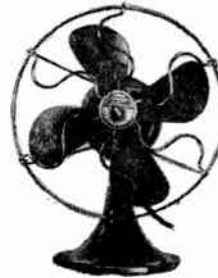
No.	Each	Volts	Current	SPEED			Watts
				1	2	3	
49X491G	\$27.50	110	60 Cy. A.C.	1450	1200	1000	85
49X493G	32.00	110	D.C.	1450	1200	1000	65

**Graybar Standard Fans**

The Standard Fans are of drawn steel construction. Adjustable pedestals for tilting and a perforated base for wall mounting. Felt base prevents marring. Entire finish black enamel including the four blades. 8-foot cord.

Special finishes in colored spray enamel, chromium and electroplating may be had on special order. Samples of color shades should be sent with inquiries. Commercial color matching must be expected, exact tones and shadings not guaranteed. Net prices quoted upon receipt of specifications as to style, finish and number of fans desired.

**8-Inch Oscillating and Non-Oscillating A.C.**



This fan fills a long-felt need for a small yet powerful fan of high quality and low price. Sturdy single speed, induction type motor with switch mounted in back of motor case. Bearings provided with felt oil retainers, eliminating the need of frequent oiling. Steel blades.

Non-oscillating net weight, 4½ lbs., shipping weight, 7 lbs. Oscillating net weight, 5½ lbs., shipping weight, 8 lbs.

No.	Each	Non-Oscillating		Speed	Watts
		Volts	Current		
27X840G	\$4.60	110	60 Cycles A.C.	1600	35
37X694G	4.60	110	50 Cycles A.C.	1300	35
<b>Oscillating</b>					
42X528G	\$9.95	110	60 Cycles A.C.	1600	35
42X529G	9.95	110	50 Cycles A.C.	1300	35

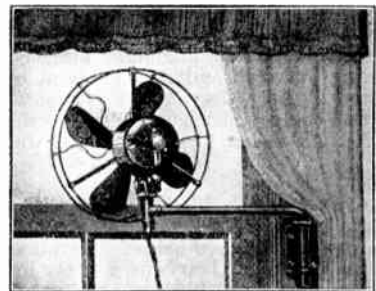
**10-Inch Non-Oscillating A.C. and D.C.**

Series commutator and induction types. Aluminum blades, single speed.

No.	Each	Volts	Current	Speed	Watts
*42X538G	\$11.45	110	25 Cycles A.C.	1600	35
*42X539G	11.45	120	40 Cycles A.C.	1600	38
42X540G	9.95	110	50 Cycles A.C.	1350	38
42X541G	11.45	220	50 Cycles A.C.	1350	38
42X542G	9.95	110	60 Cycles A.C.	1500	35
42X543G	11.45	220	60 Cycles A.C.	1500	35
42X550G	14.45	32	Direct Current	1600	24
42X551G	12.95	110	Direct Current	1600	22
42X552G	14.45	220	Direct Current	1600	26

\*Series commutator types, others are induction type.

**10-Inch Household Utility Fan**



The Household Utility Fan is fitted with a swinging bracket instead of the pedestal. It can be mounted on window casing for drawing in, exhausting or circulating air, without removing screens or sash. Two bracket supports come with each fan. Extra supports can be furnished. Complete with cord, through cord switch and plug.

Net weight, 5½ lbs. to 6½ lbs., shipping weight, 9 lbs. to 11 lbs.

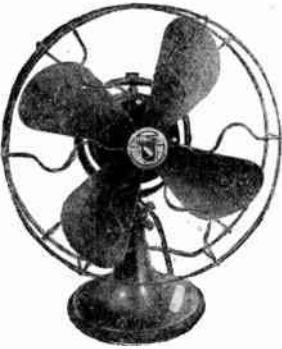
19X271G	\$9.95	110	H.U. 60 Cycles A.C.	1500	35
28X208G	12.95	110	H.U. Direct Current	1600	22

.50 Extra Brackets for H.U. Fans



## Graybar Standard Fans

### 10-Inch Oscillating A.C. and D.C.



Identical in every way with the 10-inch non-oscillating with the addition of the oscillating feature. The oscillating mechanism is mounted on the rear end of the motor cap. The 80° oscillating arc is constant.

The oscillation of these fans cannot be started or stopped while fan is running.

Net weight, 7 lbs., shipping weight, 12 lbs.

### 12-Inch and 16-Inch Oscillating A.C. and D.C.



Universal swiveling provides complete lateral and tilted adjustment. Full sweep range is 90°. Oscillation can be started or stopped while fan is running, by means of the knurled control knob on top of gear case. Have a carrying handle.

12-inch net weight, 15 lbs. to 17 lbs., shipping weight 29 lbs. to 31 lbs.

16-inch net weight, 16 lbs. to 19 lbs., shipping weight 34 lbs. to 38 lbs.

### 12-Inch Oscillating

No.	Each	Volts	Current	Speed	Watts
*42X544G	\$14.45	110	25 Cycles A.C.	1600	35
*42X545G	14.45	120	40 Cycles A.C.	1600	38
42X546G	12.95	110	50 Cycles A.C.	1350	38
42X547G	14.45	220	50 Cycles A.C.	1350	38
42X548G	12.95	110	60 Cycles A.C.	1500	35
42X549G	14.45	220	60 Cycles A.C.	1500	35
42X553G	18.45	32	Direct Current	1600	24
42X554G	16.95	110	Direct Current	1600	22
42X555G	18.45	220	Direct Current	1600	26

\*Series commutator type, others are induction type.

### 12-Inch Non-Oscillating A.C. and D.C.



These are the largest non-oscillating fans in the line. Aluminum blades.

The a.c. motors are induction type except the 110 volt, 25 cycle model. This and the d.c. models have series commutator type motors.

The three speeds are regulated by a 4-position switch in the base. Net weight, 12 lbs. to 14½ lbs., shipping weight, 27 lbs. to 28 lbs.

No.	Each	Volts	Current	Speed	Max. Watts
* 34267G	\$21.50	110	25 Cy. A.C.	1600 1250 900	42
33594G	21.50	120	40 Cy. A.C.	1050 900 750	48
78716G	20.00	110	50 Cy. A.C.	1325 1200 1000	54
78718G	21.50	220	50 Cy. A.C.	1325 1200 1000	54
34017G	20.00	110	60 Cy. A.C.	1525 1400 1250	52
34018G	21.50	220	60 Cy. A.C.	1525 1400 1250	52
218168G	24.50	32	D.C.	1600 1250 950	33
34003G	23.00	110	D.C.	1600 1250 950	33
34004G	24.50	220	D.C.	1600 1250 950	37

\*Series Commutator type, others are induction type.

### 16-Inch Oscillating

No.	Each	Volts	Current	Speed	Max. Watts
*75433G	\$25.50	110	25 Cy. A.C.	1600 1250 900	43
75431G	25.50	120	40 Cy. A.C.	1050 900 750	48
78734G	24.00	110	50 Cy. A.C.	1325 1200 1000	55
78736G	25.50	220	50 Cy. A.C.	1325 1200 1000	55
75423G	24.00	110	60 Cy. A.C.	1510 1400 1250	53
75424G	25.50	220	60 Cy. A.C.	1510 1400 1250	53
218170G	30.00	32	D.C.	1600 1250 950	33
60559G	28.50	110	D.C.	1600 1250 950	33
60560G	30.00	220	D.C.	1600 1250 950	37

### 16-Inch Oscillating

*75434G	\$32.50	110	25 Cy. A.C.	1500 1200 900	75
75432G	32.50	120	40 Cy. A.C.	1000 850 650	87
78738G	31.00	110	50 Cy. A.C.	1320 1125 950	78
78740G	32.50	220	50 Cy. A.C.	1320 1125 950	78
75425G	31.00	110	60 Cy. A.C.	1500 1325 1100	91
75426G	32.50	220	60 Cy. A.C.	1500 1325 1100	91
†34X899G	31.00	110	60 Cy. A.C.	960 800 600	86
218171G	36.50	32	D.C.	1500 1275 975	62
60561G	35.00	110	D.C.	1500 1275 975	66
60562G	36.50	220	D.C.	1500 1275 975	66
†42X461G	35.00	110	D.C.	960 800 600	65

\*Series type. Other A.C. fans are induction type.

†Slow speed. Unusually quiet operation.

### Special Types

Twelve-inch fans with enclosed motors can be furnished on special order. These fans are for use in factories and industrial plants or other locations in which damp and dusty conditions prevail.

Special types of fans for marine and railway uses, or for places where impregnated windings or enclosed motors are necessary for protection from atmospheric conditions, can also be furnished. Such fans are built on special requisitions only and are furnished in oscillating and non-oscillating models.

Prices will be submitted on specifications.

## Graybar Ventilating Fans

### 6-Blade, 12-Inch and 16-Inch A.C. and D.C.



For removing fumes, odors and foul air. Mounted in walls or partitions to exhaust into free air. The 12-inch fan will displace about 1,000 cubic feet of air per minute; the 16-inch about 1,500 cubic feet per minute. The fans are supported in a ring frame complete and ready for mounting. Motors designed with light-weight drawn steel casings. Aluminum blades. Entire finish, motor, brackets, supporting ring and blades, black enamel.

Where it is necessary to install ventilating fans for vertical operation special bearings can be furnished at \$3.00 net extra (specify whether updraft or downdraft is wanted). Fans with these special bearings are not carried in stock.

Speed controllers with 4-position regulating switches providing three running speeds can be furnished when specified. Controllers are not necessary unless speed control is required.

Net weight, 11 lbs. to 15 lbs., shipping weight, 24 lbs. to 35 lbs.



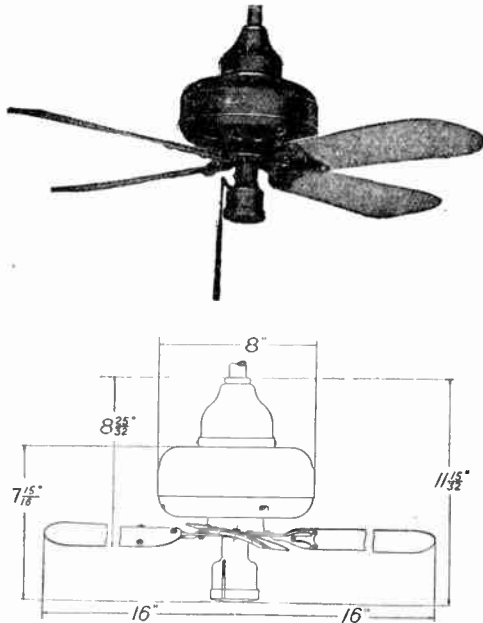
3-Speed  
4 Position Speed  
Controller  
Price \$5.00

12-Inch					16-Inch				
No.	Each	Volts	Current	Max. Speed	No.	Each	Volts	Current	Max. Speed
34025G	\$22.50	110	60 Cycles A.C.	106500	34029G	\$25.00	110	60 Cycles A.C.	106508
34009G	25.00	110	Direct Current	34034	34011G	28.00	110	Direct Current	34036

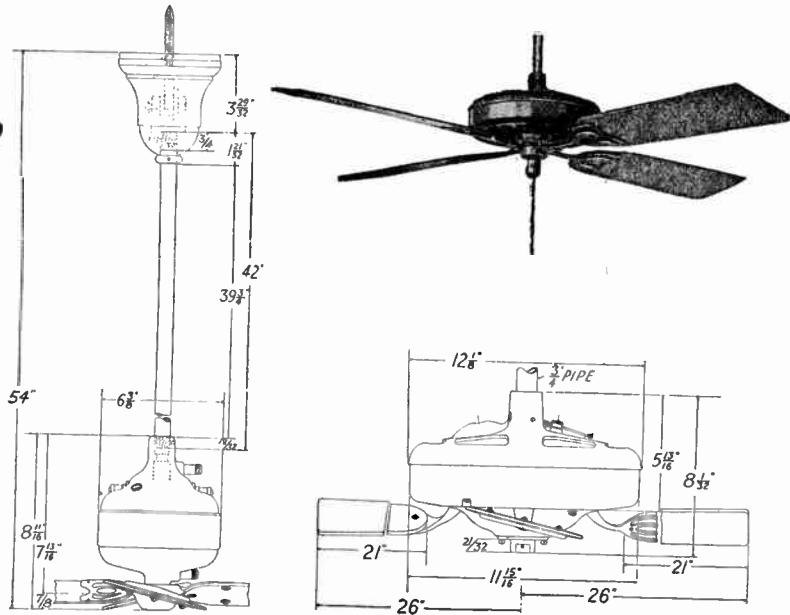
Both 12-inch and 16-inch Ventilating Fans also available in other voltages and frequencies. Prices do not include cord or attachment plug.

Graybar Ceiling Fans

32-Inch Ceiling Fans



52-Inch Ceiling Fans



The 32-inch ceiling fans are symmetrical in shape and, because of their compactness and neat design, are especially adapted to installations not requiring the maximum of air circulation.

The a.c. fans have four metallic blades in unit assembly, finished in aluminum. The d.c. fans have hardwood blades finished in natural oak. All other parts are enameled in black.

D. C. fans are not equipped with switch and are single speed only. A pull cord two-speed is standard with a.c. fans.

Net weight, 24 lbs. to 27 lbs., shipping weight, 42 lbs. to 50 lbs.

No.	Each	Volts	Current	SPEED		Max. Watts
146230G	\$39.00	110	25 Cycles A.C.	375	275	87
146231G	39.00	120	40 Cycles A.C.	350	250	85
146233G	37.00	110	50 Cycles A.C.	350	250	70
146234G	39.00	220	50 Cycles A.C.	350	250	70
146236G	37.00	110	60 Cycles A.C.	350	250	80
146237G	39.00	220	60 Cycles A.C.	350	250	80
218176G	44.00	32	D.C.	400	...	75
146210G	42.00	110	D.C.	400	...	75
146211G	44.00	220	D.C.	400	...	75

The 52-inch ceiling fans are ideal for heavy duty installations. They are quiet, efficient and durable. The a.c. fan with drawn steel motor frame affords a 20 per cent reduction in weight.

Metal parts, black enamel with hardwood blades finished in a dull, natural oak.

Unless otherwise ordered, blades are arranged for a downward discharge of air. Fans for upward discharge of air may be had on special order.

Both a.c. and d.c. have a three speed switch with pull cord. Net weight, 41 lbs. to 45 lbs., shipping weight, 68 lbs. to 74 lbs.

No.	Each	Volts	Current	SPEED			Max. Watts
62364G	\$49.00	110	25 Cy. A.C.	200	150	115	140
62365G	49.00	120	40 Cy. A.C.	225	175	125	125
62367G	47.00	110	50 Cy. A.C.	220	175	125	130
62368G	49.00	220	50 Cy. A.C.	220	175	125	130
44986G	47.00	110	60 Cy. A.C.	245	195	150	145
44987G	49.00	220	60 Cy. A.C.	245	195	150	145
218178G	57.00	32	D.C.	235	175	125	120
34007G	55.00	110	D.C.	235	175	125	120
34008G	57.00	220	D.C.	235	175	125	120

Prices shown are for standard fans in regular finish and include insulated hanger, canopy and two hooks, but do not include hanger pipe. Black enameled iron hanger pipe, threaded both ends, will be furnished when specified at a slight additional cost. Special finishes made to order. Specify desired finish of wooden blades, otherwise blades

will be finished to harmonize with metal parts, that is, the brass, nickel or light finishes. Blades of natural wood filled and varnished supplied with motors of darker finishes.

Quotations will be furnished on receipt of specifications stating number of fans required.

Lighting Combinations With Ceiling Fans

32-Inch and 52-Inch, A.C. Only

Graybar Ceiling Fans may be used in combination with popular commercial lighting fixtures. This makes possible an economical and simplified installation for fans and lights.

There is no additional charge for Ceiling Fans furnished with 4 or 6-inch shadeholders. Ceiling Fans furnished with extra switch for separate on and off control of light, add \$1.00 to list price.

Ceiling Fans furnished less speed coil, deduct \$1.00 from price. Ceiling Fans furnished less switch, deduct \$1.00 from price.

## Graybar-Crawford Electric Ranges

The features and design and construction of Graybar-Crawford Electric Ranges are not a matter of chance. They are the result of many years of close contact with the range buying public and dealers, and the interpretation of this contact by competent engineers and designers into terms of what the housewife wants in the way of a cooking device.

### Wiring—Switches

The standard wiring of all Graybar-Crawford Ranges is for use with 3 wire, 110-220 volt service and all switches are load balancing type.

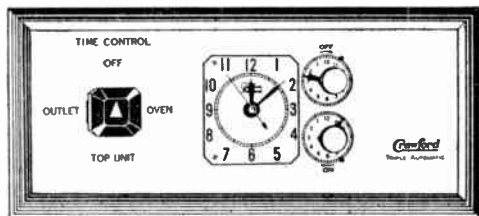
### Colors

All Graybar-Crawford Ranges, except the four small apartment house models, are regularly furnished in a choice of gray and white, 2-tone ivory and pastel green and ivory full porcelain enamel.

### Cast Iron Construction

The parts which get the greatest wear and abuse—the legs, cooking top, unit rings, oven and oven door frames, front frame and all brackets, as well as many concealed parts are made of cast iron. This adds rigidity to the range and prevents weaving and warping which causes most enamel chippage. The door hinge construction is exceptionally sturdy. The pins are integral parts of the cast iron front frame and fit into bearings which are a part of the door frame casting. The door stop is heavy steel. Door balance is maintained by a heavy coil spring, the tension of which can be adjusted to suit the operator.

### Triple-Automatic Time Control

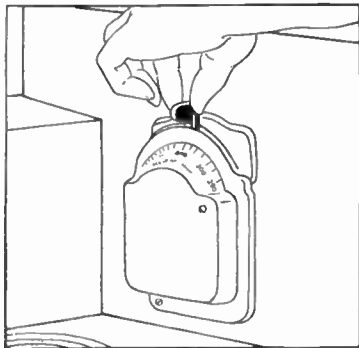


Triple-automatic time control triples the convenience of cooking with electricity. This unique feature makes it possible to automatically time control surface cooking, appliances plugged into the appliance outlet, or oven cookery.

Models 292, 290, 280 and 78 have the triple timer mechanism built in as a single unit, mounted under heat-resisting glass on shelf back and controlled by a Telechron movement electric clock. To the left of the clock dial is a selector switch that controls the unit which it is desired to time—the oven, top unit or appliance outlet—and in the case of the Epicure, the Speedwell cooker, which on this range can be time controlled by turning the selector switch to the "top unit" position. All other setting operations are done with two knobs at the right of the clock dial. Telechron timers are a.c. only, 60 cycles unless otherwise specified.

Other triple-automatic ranges are controlled by a timer clock—either hand wound No. 36 or electric wound No. 56, whichever is desired—which is plugged into a triple timer receptacle mounted in the step-back shelf. The unit which is to be controlled is selected by plugging the clock into the proper position in the receptacle.

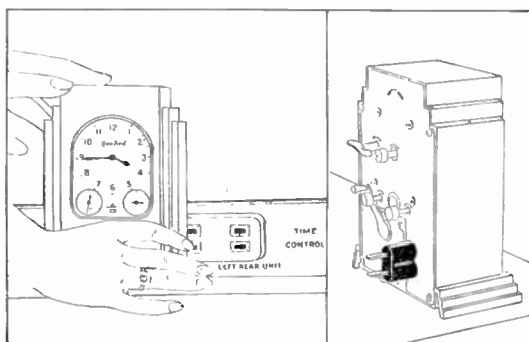
### Temperature Control



A mercury switch type thermostat which works on a.c. or d.c. any cycle, and is non-radio interfering. Controls oven temperature assuring accurate cooking results without worry and maximum economy of oven operation through maintaining the temperature.

There are no delicate parts to give trouble and control is easy to calibrate.

### Timer Clock



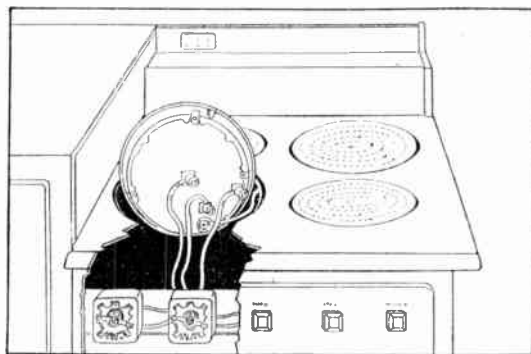
Controls cooking operations in oven, on one surface unit or appliance outlet turning heat on and off at any desired time. Rigid contacts mounted on back eliminate cord and plug.

No. 36 with 24-hour movement, hand wound. No. 56 is electric motor wound, spring drive; for a.c., 60 cycles.

### Oven Indicator Light

A positive action indicator which tells when oven has reached the temperature at which thermostat has been set and is ready for use.

### Monel Wiring and Unit Terminals



All top unit lead wires are monel, assuring long life. No re-wiring of ranges is ever necessary because of wire fatigue. Unit terminal studs are monel, to prevent freezing of terminal connections. The use of nickel alloy metals for the three parts—leads, coils and studs—which are brought together at the unit terminals, eliminates loose connections and therefore burnouts at this point.

### Model Code

- R—Right-hand oven.
- L—Left-hand oven.
- S—High shelf.
- P—All enamel.
- A—Time and temperature control.
- X—Unit for warming compartment.
- T—Temperature Control

### Instructions for Ordering

State model number of range and add code letters, as shown, to indicate particulars and the equipment to be shipped with the range.

Specify colors desired—otherwise gray and white will be shipped.

Condiment sets, if desired, must be ordered separately unless listed as standard equipment.

Ranges desired with cookers should be so specified, i.e.—16-77 with cooker.

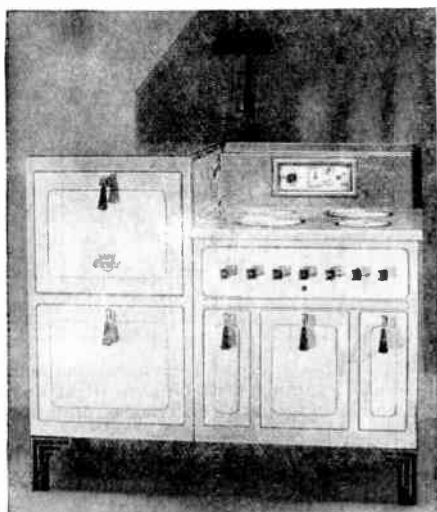
When ordering controls, specify whether a.c. or d.c. and cycles. Unless otherwise specified, heating units and controls will be furnished for connection to standard 3-wire 110-220 volt service, (115 volt units) a.c. 60 cycles. Special arrangements of units or voltages other than standard are furnished at an extra charge.

Specify whether shipment is to be by rail, water, express or parcel post; give routing and lines to be used.



## Graybar-Crawford Triple-Automatic Electric Ranges

No. 18-290 RPA—Epicure Model



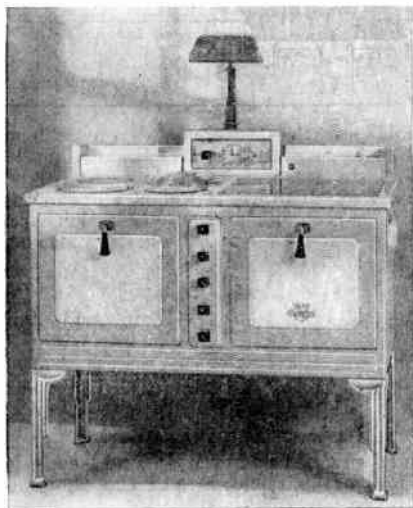
Speedwell cooker, platform lamp, foot rests, card index recipe file and condiment set are standard equipment.

Oven Size.....	18x14x18½"	Cooking Top	
Floor Space.....	50x28"	Units...	2-6" 1200 Watts
Cooking Top.....	28½x21"		1-8" 1200 Watts
Cooking Top			1-8" 2000 Watts
from Floor....	35"	Oven: Top..	1800 Watts
Warming Drawer	17½x13½x21"	Bottom..	1500 Watts
Warming Unit....	300 Watts	Cooker...	660 Watts
Vertical Boiler...	2000 Watts	Appliance	
Ship. Weight....	595 Lbs.	Outlet...	660 Watts

No. 18-292 LPA—Two-Oven Model

Identical with above range except has second oven in place of warming drawer. Shipping wt. 645 lbs.

No. 16-280 RPA



Foot rests and condiment set are standard equipment. Optional equipment at extra cost: cooker, platform lamp, warming unit and removable monel work top tray. Cooker, 660 watts, when used replaces 8-inch 1200-watt unit.

Oven Size.....	16x14x18½"	Cooking Top	
Floor Space.....	41½x28"	Units...	2-6" 1200 Watts
Cooking Top....	43½x21"		1-8" 1200 Watts
Cooking Top			1-8" 2000 Watts
from Floor....	36"	Oven: Top	1500 Watts
Utility Com-		Bottom..	1500 Watts
partment.....	16x13½x19½"	Appliance	
Ship. Weight....	400 Lbs.	Outlet..	660 Watts

No. 16-78 RPA



Foot rests and condiment set are standard equipment. Optional equipment at extra cost: cooker, platform lamp.

Cooker, 660 watts, when used replaces 8-inch 1200-watt unit.

Oven Size.....	16x14x18½"	Cooking Top	
Floor Space.....	41½x27½"	Units...	2-6" 1200 Watts
Cooking Top....	21½x22"		1-8" 1200 Watts
Ht. Cooking Top			1-8" 2000 Watts
from Floor....	32½"	Oven: Top	1500 Watts
Ship. Weight....	300 Lbs.	Bottom..	1500 Watts
		Appliance	
		Outlet..	660 Watts

No. 16-477 RPA



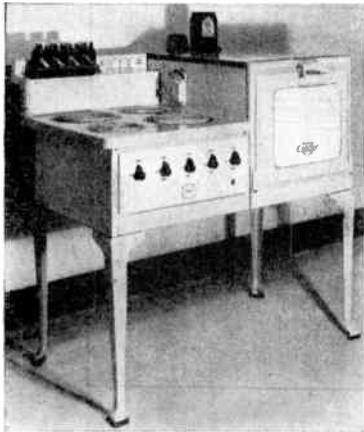
Utility drawer under oven may be equipped with warming unit (300 watts). Optional equipment at extra cost: cooker, condiment set, timer, foot rests, warming unit.

Cooker, 660 watts, when used replaces 8-inch 1200-watt unit.

Oven Size.....	16x14x18½"	Cooking Top	
Floor Space.....	41x27"	Units...	2-6" 1200 Watts
Cooking Top....	21½x22"		1-8" 1200 Watts
Cooking Top			1-8" 2000 Watts
from Floor....	36"	Oven: Top	1500 Watts
Drawer Under		Bottom..	1500 Watts
Top.....	18x6½x19½"	Appliance	
Drawer Under		Outlet..	660 Watts
Oven.....	15½x6½x19½"	Ship. Wt..	360 Lbs.

Prices on Application

## Graybar-Crawford Triple-Automatic Electric Ranges



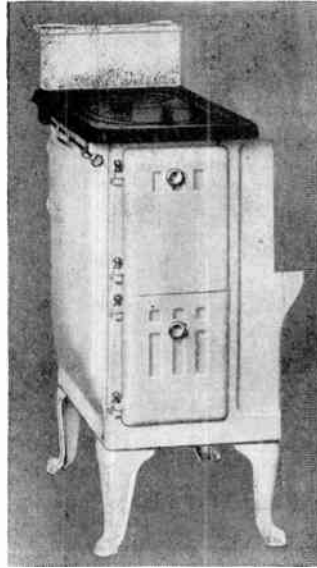
**No. 16-77 RPA**

Cooker, 660 watts, when used replaces 8-inch 1200-watt unit.

Optional equipment at extra cost: cooker, condiment set, timer and foot rests.

Oven Size.....	16"x14"x18½"	Cooking Top Units.....	2-6" 1200 Watts
Floor Space...	27"x42½"		1-8" 1200 Watts
Cooking Top.....	22"x22"		1-8" 2000 Watts
Ht. Cooking top from Floor.....	32½"	Oven: Top.....	1500 Watts
Ship. Weight.	265 Lbs.	Bottom.....	1500 Watts
		Appliance Outlet.....	660 Watts

## Graybar-Crawford Heat Ends



This heat end provides an auxiliary room and water heater, burning coal, wood, oil and other combustion fuels.

Furnished with either cast iron or brick firebox linings.

Waterfront or brass coils for heating water are extra.

Can be attached to No. 16-77 range, right hand oven only and adds 13 inches to overall length.

Size of firebox, 16¼x7¼x8½ inches.

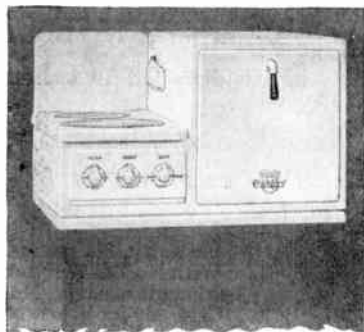
Shipping weight, 245 pounds.

## No. 12-R40 PT Graybar-Crawford Kitchenette Ranges

This model answers the demand for a small range where conservation of space is essential. It can be built in with any cupboard-sink unit or can be fitted to the top of any refrigerator with a flat top not over 26½ inches wide, nor over 37½ inches high. Made only in white porcelain with right hand oven.

Optional equipment at extra cost: timer with cord and plug for time controlled operation of oven.

Height.....	15⅝"	Cooking Top Units...	1-8" 2000 Watts
Width.....	26⅝"		1-6" 1200 Watts
Depth.....	23⅝"	Oven: Top, Broiling..	1000 Watts
Cooking Top.....	11¾"x21⅞"	Bottom, Baking....	1000 Watts
Oven.....	12⅛"x12"x17⅝"	Appliance Outlet.....	660 Watts
Shipping Weight.....	190 Lbs.		



## Graybar-Crawford Electric Ranges

**No. 16-52 PT**



In gray and white porcelain enamel.

Oven Size.....	16"x12"x12½"
Floor Space.....	18"x24"
Height Cooking Top....	34"
Cooking Top Units.....	1-8" 2000 Watts
	1-6" 1200 Watts
Oven: Top, Broiling....	1000 Watts
Bottom, Baking.....	1000 Watts
Appliance Outlet.....	660 Watts
Shipping Weight.....	140 Lbs.

**No. 16-56 PT**



In gray and white porcelain enamel.

Oven Size.....	16"x12"x12½"
Floor Space.....	19"x20"
Cooking Top.....	19"x20"
Height Cooking Top....	34"
Cooking Top Units.....	1-8" 2000 Watts
	2-6" 1200 Watts
Oven: Top, Broiling....	1000 Watts
Bottom, Baking.....	1000 Watts
Appliance Outlet.....	660 Watts
Shipping Weight.....	160 Lbs.

**No. 16-251 PT**

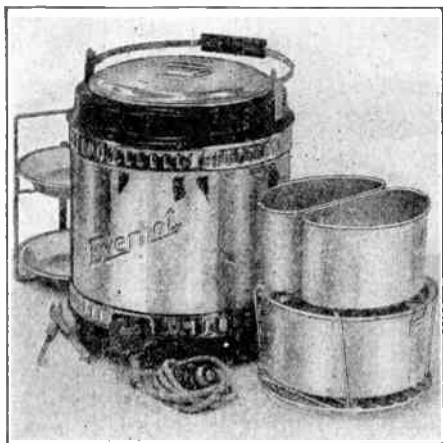


In gray and white porcelain enamel.

Oven Size.....	16"x12"x12½"
Floor Space.....	21"x23"
Cooking Top.....	19"x20"
Total Height.....	35"
Cooking Top Units.....	1-8" 2000 Watts
	2-6" 1200 Watts
Oven: Top, Broiling....	1000 Watts
Bottom, Baking.....	1000 Watts
Appliance Outlet.....	660 Watts
Shipping Weight.....	170 Lbs.

Prices on Application

No. EC-15 Everhot Electric Cookers



This cooker will satisfy the demand for a large capacity electric cooker.

A 7-pound roast and three vegetables may be prepared at the same time in this cooker.

Has chromium-plated body. The element is guaranteed against burnout.

Equipment: No. 271 three-quart covered utensil; No. 264 half round set, each utensil 1 3/4 pints; No. EC-26 baking rack with 2 pie tins; No. EC-395 special roasting rack; No. EC-35 utensil lifter; No. HC-15 heater cord; No. 304 cook book.

Overall dimensions: height, 15 inches; diameter, 12 inches. Compartment: diameter, 8 7/8 inches; depth, 10 inches. Liquid capacity, 10 quarts.

Wattage: 660 on high; 140 on low.

Shipping weight, 21 pounds.

No. EC-15.....each \$15.00

Everhot Broiler-Fryer Attachments

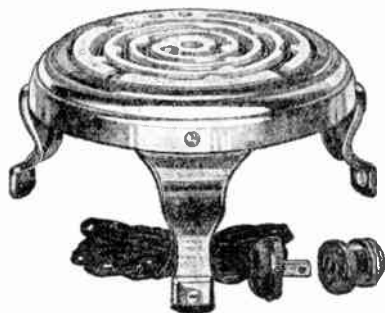


The Everhot Electric Cooker may be equipped with a broiler-fryer attachment, a reversible cover which has a built-in heating element that makes it possible to broil or fry steak or chops in the cooker; fry eggs and bacon, percolate coffee, etc.

No. 525, for No. EC-10 Cooker, Shipping Weight 3 Pounds.....each \$3.50

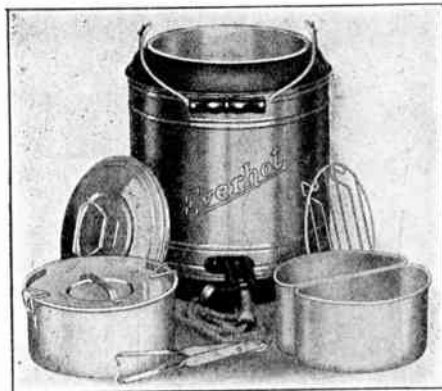
No. 530, for No. EC-15 Cooker, Shipping Weight 4 Pounds.....each 3.75

Special Model Everhot Hot Plates



A single heat hot plate; consumes 600 watts. Has heater cord attached. Nickel-plated body, black enameled legs. Special Model, Shipping Weight 3 Pounds.....each \$2.00

No. EC-10 Everhot Electric Cookers



A 4-pound roast, 8 whole potatoes, 1 quart of vegetables and 1 quart of extra vegetables may be cooked at one time in this cooker. Bakes pies and biscuits, browns like an oven. Popular for carrying hot or cold food on picnics and motor trips.

Waterless principle used. Has insulated body. Continuous cooking with current disconnected.

Body is chromium-plated and trimmed in dull ebony enamel. Has heavy seamless aluminum cooking compartment of 5-quart capacity. With strong bail and wooden handle.

Equipment: No. 161 two-quart covered utensil; No. 249 half rounds, each 1 1/2 pints; No. EC-27 rack and 2 pan set; No. EC-34 trivet; No. EC-35 utensil lifter; No. HC-14 heater cord; No. 303 cook book.

Overall size: height, 13 5/8 inches; diameter, 10 inches.

Wattage: high, 450; low, 100.

Shipping weight, 17 pounds.

No. EC-10.....each \$10.00

Everhot Electric Casseroles

No. 7



Capacity, 2 3/4 quarts. With No. EC-77 Pyrex baking glass cover, No. HC-14 six-foot heater cord, 3 point connector, rubber plug and No. 326 instruction folder.

Overall size: height, 8 inches; width, 11 1/2 inches. Inside diameter, 7 1/4 inches; inside height, 4 1/4 inches. Diameter glass cover, 8 inches.

Wattage at 115 volts: high, 360; low, 120.

Standard package, 6; shipping weight, 63 pounds. No. 7.....each \$5.50

No. 8

Equipped same as No. 7 and with pair of seamless aluminum half round utensils No. 249-B, with capacity of 1 1/2 pints each.

Shipping weight, 11 pounds.

No. 8.....each \$6.50

No. 9

Equipped same as No. 7 and with No. 525 electric broiler and fryer and broiling rack. Top element provides for broil-used separately as a hot plate.

Upright it may be used for any open burner purpose (frying, broiling, percolating); reversed (element side down) it is an efficient broiler for steaks, chops, etc. Broiler, 600 Watts. Shipping weight, 13 pounds.

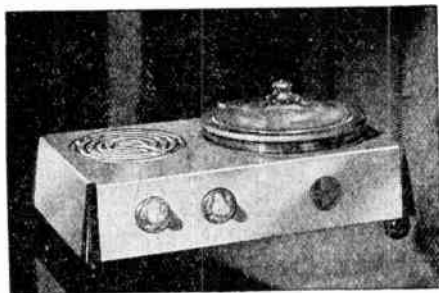


No. 525 Broiler and Fryer

No. 9.....each \$8.50



## No. 625 Everhot Casserole-Hot Plate Combinations



The surface burner, combined with the casserole, makes a fairly complete outfit for the light housekeeper, the summer cottage and the kitchenette apartment. Dozens of different foods may be cooked in the insulated casserole compartment. Can be used for many kinds of baking and roasting.

The casserole has a capacity of 2¾ quarts, enough for a family of 8 persons. The seamless aluminum compartment is equipped with removable aluminum utensil insert and Pyrex glass cover. Controlled by a 3-heat range switch.

Body is vitreous enameled, light green speckled color; black trim; has ball feet.

Two range type switches; separate control of hot plate and casserole or work simultaneously.

Equipped with No. 265 aluminum insert and No. EC-77 glass cover.

Hot plate is 6½ inches in diameter; has 3 heats—700 high; 350 medium; 175 low.

Casserole wattage: 500 high; 250 medium; 125 low.

Shipping weight, 23 pounds.

No. 625 .....each \$13.85

## Everhot Kitchen Compacts

No. 630



Note the drawer. This is the broiling and baking section; contains a removable aluminum pan and a broiling rack.

Toasting is done on the square heating element above the drawer—4 slices—and also on the broiling rack, totaling 8 slices at one time when desired. Frying, coffee-making, etc., may also be done on the square burner. Has hinged cover.

Left-hand element is used for boiling, frying, etc.

Has two 3-heat switches.

Body is porcelain enameled in a delicate shade of green.

Oven lining is rust-resisting steel.

Equipped with No. 11 square oven roaster and HP-314 rack.

Length 20½ inches; width, 11½ inches; height to top of deck, 6¼ inches; height to top of splasher back, 9¼ inches.

Wattage: Left-hand burner, 550 high; 275 medium; 135 low; right-hand burner, 1100 high; 550 medium; 275 low. Total watts, 1650.

No. 630, Shipping Weight, 30 Pounds.....each \$19.95

No. 632

Same as No. 630 without the left-hand burner as illustrated above.

Dimen. 11½x12½x7 in. high. Wattage 1100 high, 350 low.

No. 632, Shipping Weight, 18½ Pounds.....each \$12.50

## Everhot Kitchen Compacts

No. 631



The casserole prepares escalloped dishes, cooks vegetables, bakes biscuits, etc. Has pyrex glass cover; capacity, 2¾ quarts.

The drawer section broils, bakes, toasts and fries. Each section controlled by a 3-heat range switch.

Body is porcelain enameled in a delicate shade of green.

Equipped with casserole, No. 265 aluminum inset; broiler-fryer, No.11 square oven roaster. HP314 rack.

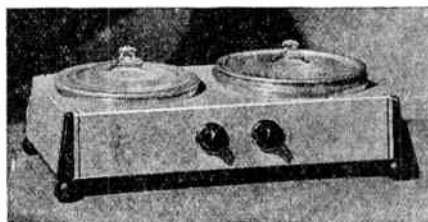
Length, 22 inches; width, 11½ inches; height to top of deck, 6¼ inches; height to top of splasher back, 9¼ inches.

Wattage: Casserole, 500 high, 250 medium, 125 low; broiler-fryer section, 1100 high, 550 medium, 275 low. Total 1600 watts.

Shipping weight, 32½ pounds.

No. 631 .....each \$23.50

No. 627



Consists of one 2¾-quart and one 4-quart casserole. Each has removable aluminum insets and pyrex glass covers; fully insulated. Each casserole controlled by 3-heat range switch. The larger inset has a removable partition and false bottom so that two foods may be cooked at one time.

Body is porcelain enameled in a delicate shade of green.

Equipped with No. 265 and No. 274 insets.

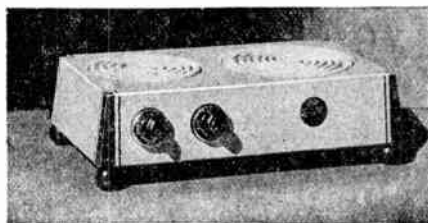
Length 22¾ inches; width, 11 inches; height, 5¾ inches.

Wattage: Small casserole, 500 high, 250 medium, 125 low; larger casserole, 600 high, 300 medium, 150 low.

Shipping weight, 26 pounds.

No. 627 .....each \$21.00

## High Speed Hot Plates



No. 624

Has one 6⅝-inch and one 8-inch surface burner; Each burner controlled by 3-heat double pole range switch.

Body is porcelain enameled in a delicate shade of green.

Length, 18 inches; width, 10 inches; height, 5¼ inches.

Wattage: Small burner, 660 high, 330 medium, 165 low; large burner, 990 high, 495 medium, 248 low. Total, 1650 watts.

Shipping weight, 20 pounds.

No. 624 .....each \$12.50

No. 623

Has 6⅝-inch burners. Dimensions, finish and shipping weight same as No. 624. Two switch control.

Wattage: Each burner, 660 high, 330 medium, 165 low. Total, 1320 watts.

No. 623 .....each \$10.00

**Proctor Hotplates**

Capacity, 110 volts a.c. or d.c., 1500 watts. With two 750-watt elements in 6-inch refractory bases. Frame, 8½x18 inches; 16-gauge steel legs and handles, nicked.

Packed in individual cartons. Shipped in cases of 6.

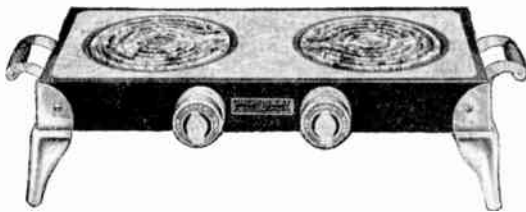
**No. 402**



Twenty-gauge steel frame; cobalt blue-black vitreous enamel finish. Controlled by two 3-heat rotary switches. Weight, 12¾ pounds. Case shipping weight, 63 pounds.

No. 402, With Cord and 2-Piece Plug.....each \$8.45

**No. 404**



Twenty-gauge Armeo iron frame; blue-black skirt, white vitreous enamel top or marbled green with tinted refractories. Unless color is specified, white top will be furnished.

Controlled by two 3-heat reciprocating switches. Weight, 10½ pounds. Case shipping weight, 65 pounds. No. 404, With Cord and 2-Piece Plug.....each \$10.65

**Proctor Hotplates**

Frame and coaster legs are of 20-gauge steel, nicked. Furnished with genuine nickel chromium element. Equipped with suitable gauge silk-covered heating cord and 2-piece plug.

Packed in individual cartons. Shipped in cases of 12 to 24.

**No. 601**



Capacity, 110 volts a.c. or d.c., 660 watts. Element mounted in 5¼-inch special refractory base. Weight, 2¾ pounds. Shipping weight: 12 in case, 33 pounds; 24 in case, 70 pounds. No. 601, With Cord and 2-Piece Plug.....each \$2.85

**No. 701**



Capacity, 110 volts a.c. or d.c., 500 watts. Element mounted on thick composition heat and current insulator mat. Diameter, 7 inches; height, 4 inches. Weight, 2¼ pounds. Shipping weight: 12 in case, 30 pounds; 24 in case, 55 pounds. No. 701, With Cord and 2-Piece Plug.....each \$2.50

**Nesco Electric Casseroles**

Capacity, 2 liquid quarts. Has self seal waterless cooking feature and bakelite knob.

In cartons. Six cartons to a shipping container. Made in 110-120 volts.

**No. B50 Colonial Model**

Ivory and green finish. Wattage: high, 325; low, 100.

Shipping weight of 6 cartons, 50 pounds.

No. B50.....each \$5.50

**No. B45**

**Princess Model**

Has removable cooking well.

Modernistic chromium finish.

Wattage: high, 425; low, 130.

Shipping weight of 6 cartons, 60 pounds.

No. B45.....each \$8.50



**No. R95 Nesco Electric Roasters**

**Colonial Model**

Capacity, 6 liquid quarts.

Will accommodate a 6-pound fowl or a 10-pound ham. Cooks a complete meal.

With porcelain enameled cooking well, heating well and cover; japanned sides and base; bakelite handles; rubber feet.

Length of cooking well, 12 inches; width, 8½ inches; depth, 6 inches.

Has heating units on sides and bottom. Wattage at 115 volts: high, 635; low, 275. Made in 110-120 volts.

In individual cartons; weight, 15 pounds. No. R95, Ivory and Green Finish.....each \$10.50

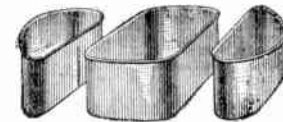


**No. R3-95 Nesco Cooking Sets**

For cooking a whole meal this set is indispensable. Made of heavy gauge metal; enameled to match interior of roaster.

The two end pans are each of 1 quart capacity and the center pan of 2½ quart capacity.

In cartons. Six cartons to a shipping container; weight, 28 pounds. No. R3-95.....each \$1.75



**No. R5-95 Nesco Baking Sets**



Constructed of heavy tin plate. Fits into cooking well of roaster, which accommodates one pan at a time.

Pie and cake pans are 8 inches in diameter. Size of bread pan, 9¾x4½x3 inches.

In cartons. Six cartons to a shipping container; weight, 17 pounds. No. R5-95.....each \$.60



## M-B Electric Coffee Services

110-125 Volts, 350 Watts

The urns of these coffee services are protected from overheating by a fuse device which prevents damage to the urn if it is allowed to boil dry or is started without water. Faucets are dripless.

Sugar bowls and creamers are gold-lined.  
Chromium-plated finish.

### No. K4780/9—Canterbury Pattern



Has jet black handles with small contrasting bands of ivory.

Standard package, 2. Shipping weight each, 15 pounds.

- No. K4780/9, Set of 4 Pieces..... each **\$29.95**
- No. K478/9, Urn, 9-Cup Cap., 14½ Inches High each **13.45**
- No. K144, Sugar Bowl and Creamer..... each **8.00**
- No. K4518, Tray, 19x11½ Inches Overall..... each **8.50**

### No. K4760/8—Radcliffe Pattern

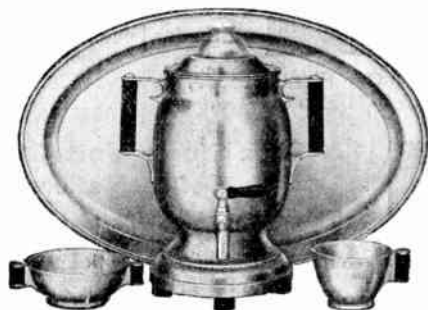


Handle mounts are of red or jet black Arinite.

Standard package, 2. Shipping weight, each, 10 pounds.

- No. K4760/8, Set of 4 Pieces..... each **\$19.95**
- No. K476/8, Urn, 8-Cup Cap., 15 Inches High each **9.95**
- No. K141, Sugar Bowl and Creamer..... each **6.50**
- No. K2718, Tray, 18x11¼ Inches Overall..... each **3.50**

### No. K4750/9—Weyburne Pattern



Mounts on sugar and creamer are ebonized to match urn.

Standard package, 2. Shipping weight each, 12 pounds.

- No. K4750/9, Set of 4 Pieces..... each **\$15.95**
- No. ...., Urn, 9-Cup Cap., 10½ Inches High each .....
- No. ...., Sugar Bowl and Creamer..... each .....
- No. ...., Tray, ..... Inches Overall..... each .....

## M-B Electric Coffee Services

110-125 Volts, 350 Watts

### No. K4770/9—Norham Pattern



Protected from overheating by a fuse device which prevents damage to urn if it is allowed to boil dry or is started without water. With dripless faucet.

Sugar bowl and creamer are gold-lined. Decorated with gemlike Arinite either in red or jet black. Chromium-plated finish.

Standard package, 2. Shipping weight each, 13 pounds.

- No. K4770/9, Set of 4 Pieces..... each **\$24.95**
- No. K477/9, Urn, 9-Cup Cap., 14 Inches High..... each **13.45**
- No. K142, Sugar Bowl and Creamer..... each **6.50**
- No. K4418, Tray, 22x11¾ Inches Overall..... each **5.00**

## M-B Electric Percolators

110-125 Volts, 350 Watts

### No. K369/7—Bexley Pattern



Capacity, 7 cups.

Has heavy copper body, hinged cover, dripless spout, obscure terminal guard and ebonized handle.

Chromium-plated finish.

Height, 11 inches.

Standard package, 3. Shipping weight each, 5 pounds.

No. K369/7..... each **\$13.50**

### No. K28—Wrentham Pattern



Capacity, 7 cups.

Has heavy copper body, dripless spout and ebonized wood handle.

Chromium-plated finish.

Height, 11½ inches.

Standard package, 6. Shipping weight each, 5 pounds.

No. K28..... each **\$9.95**

### No. K379/7—Wickshire Pattern



Capacity, 7 cups.

Has heavy copper body, ebonized handle and dripless spout.

Chromium-plated finish.

Height, 10¾ inches.

Standard package, 6. Shipping weight each, 5 pounds.

No. K379/7..... each **\$6.95**



**Silex Glass Coffee Makers  
Combination Electric and Gas Models**

Made of non-tarnishing chrome. Knob on cover, the ring insulating the handles and holding lower decorator shell in place are ebony composition. Pyrex heatproof glass is used.

Regularly furnished for 110-120-volt circuits; special voltages can be supplied at 50 cents per element extra.



**Lido Model**

In 4, 6 and 8-cup sizes, taking UP and LP bowls. Metal decorator for lower bowl matches in motif the pattern of the 550-watt stove.

- No. LE42, 4-Cup Size...each \$8.95
- No. LE62, 6-Cup Size...each 9.45
- No. LE82, 8-Cup Size...each 9.95

May be purchased without decorative shells and tea cap stopper at \$1.00 less.



**Pinehurst Model**

Made in 6-cup and 8-cup sizes.

Supplied with decorative shell and cover similar to those supplied with Lido model. Takes LK6 and UK6 bowls. Tea cap is supplied.

- No. HE62, 6-Cup size...each \$7.95
- No. HE82, 8-Cup size...each 7.95



**Coronado Model**

This unit embodies all the features of the more expensive models and yet is low priced.

Available in 6-cup and 8-cup sizes.

Takes LK6 and UK6 bowls.

- No. KE6D, 6-Cup size each \$6.95
- No. KE8D, 8-Cup size each 6.95

**Coffee Maker May Also Be Used as Tea Maker**



The new stopper for the lower bowl may be used as a cover when serving coffee, or will allow the use of the Silex as a tea maker.

A slot is provided in the cover so that the string from the tea bag may be wound around the knob. Tea or coffee is poured with the stopper in place.

Furnished with Lido and Pinehurst models or may be bought separately at 50 cents.

**Silex Warming Stoves**



May be placed at strategic serving locations to keep a bowl of brewed coffee at drinking temperature indefinitely without boiling.

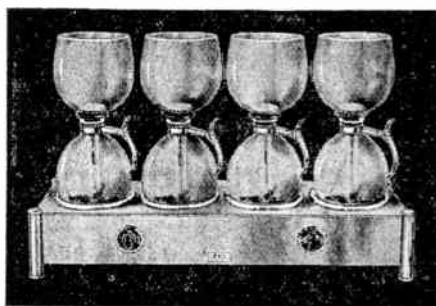
Stove is chrome plated.

Standard package, 3.

- No. SW80, 80 Watt...each \$3.45
- Model SUS, 660 Watt...each 4.45

**Silex Glass Coffee Makers**

**Model BE—4 Units**



This coffee maker has an operating capacity of approximately 225 to 300 cups per hour. Size, 27x7½x4½ inches. With 4 glass assemblies and 50 strainer cloths.

Range is stainless steel; unit reflectors chromium-plated. With 440-watt elements; 660-watt elements on special order. Pyrex heatproof glass is used. Necessity of removing glass from range is avoided with quick cooling units. Patented filter produces amber clear coffee.

No. of Cups	Size Ounces	With Quick Cooling Elements		With Slow Cooling Elements	
		No.	Each	No.	Each
9-11	52	BE-1	\$56.95	BE-2	\$53.95
7-9	42	BE-3	52.95	BE-4	49.95
Range Only		BRE-1	32.95	BRE-2	29.95

**Model CE—2 Units**

Same as Model BE, except has 2 units; operating capacity, 115 to 150 cups per hour. Size, 14x7½x4½ inches. With 2 glass assemblies and 50 strainer cloths.

No. of Cups	Size Ounces	With Quick Cooling Elements		With Slow Cooling Elements	
		No.	Each	No.	Each
9-11	52	CE-1	\$33.95	CE-2	\$31.95
7-9	42	CE-3	31.95	CE-4	29.95
Range Only		CRE-1	21.95	CRE-2	19.95

**Silex Coffee Maker Assortments**



Ideal for the small restaurant or operator serving a limited amount of coffee. Consists of a complete making unit, extra lower bowl and 80-watt warming stove permitting the storage of coffee indefinitely without boiling and insuring a reserve of coffee always ready for serving while the making unit is being used for a fresh brew.

Standard package, 3.

- No. DE8, 7-9-Cup Size...each \$15.95
- Model DEC, 9-11-Cup Size...each 17.45



**Silex Single Unit Glass Coffee Makers**

This unit is ideal for placing along the backbar where space does not permit passing to one central dispensing point.

Stove and handle are chrome.

Standard package, 3.

No. of Cups	With Stove		Without Stove	
	No.	Each	No.	Each
7-9	SE-82	\$8.95	G-82	\$4.95
9-11	SE-92	9.95	G-92	5.95

**No. DS2 Silex Deauville Model  
Coffee Service**

Combination Electric and Gas Model



Made in 6-cup size only in non-tarnishing chrome. Tray is 18x11 inches overall; heavy gauge 18 per cent nickel silver. Sugar and creamer are 18 per cent nickel silver, gold lined. Metal decorator is attractively pierced. The feet, handles on tray, knob on cover, ring insulating the handle and holding lower decorator shell in place are all ebony composition.

Pyrex heatproof glass is used. The bowls are regular UP6 and LP6. Furnished with stopper for lower bowl that may be used for cover for coffee service or which will allow the use of the Silex as a tea maker with tea bag.

Regularly furnished for 110-120-volt circuits; special voltages can be supplied at 50 cents per element extra.

No. DS2, Complete.....each \$27.00

**M-B Automatic Electric Drip Coffee Urns**

**No. K252/6—Sussex Pattern**  
110-125 Volts, 350 Watts—A.C. Only



Capacity, 6 cups. The automatic device guarantees excellent coffee; keeps it hot indefinitely.

Operation: Cold water is placed in lower compartment, finely ground coffee in basket in upper compartment. When attached to lighting current a small quantity of water at proper temperature is pumped up tube where it drips back through coffee in basket.

Has ivory handles and feet; chromium-plated finish.

Height, pewter-lined urn, 12½ in. Standard package, 3. Shipping weight each, 8 pounds.

No. K252/6.....each \$12.50

**No. 101/2 M-B Electric Tobacco Lighters**

110-125 Volts, 100 Watts

This lighter will light a pipe, cigar or cigarette equally well.

Operates on the principle of heated air and the tobacco does not come in contact with the unit.

Height, 7 inches.

Finished in statuary bronze.

Equipped with a cord to match.

Standard package, 6. Shipping weight each, 6 pounds.

No. 101/2.....each \$5.00



**Model A Sunbeam Coffee Makers**



A glass coffee maker with a capacity of 8 cups.

Complete with two graceful heat-proof glass bowls, chrome-plated table stove and cover, black handle.

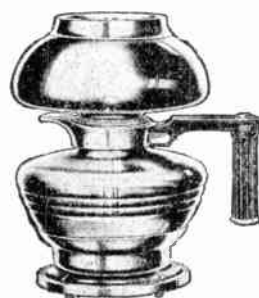
Glass stopper rod does away with filter cloths, springs, etc.

Coffee comes in contact only with glass—no metallic taste.

Height, 11 inches.

Model A.....each \$6.50

**Model B Sunbeam Coffee Makers**



This glass coffee maker has a capacity of 8 cups.

With handy spout—a permanent part of the lower bowl. Chrome finished table stove and cover, heat-proof bowls, black handle.

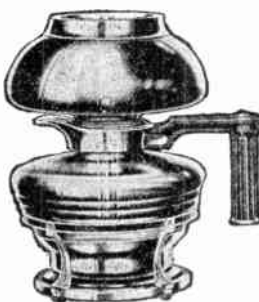
Glass stopper rod does away with filter cloths, springs, etc.

There is no metallic taste—coffee comes in contact only with glass.

Height, 9 inches.

Model B.....each \$8.95

**Model C Sunbeam Coffee Makers**



An efficient coffee maker with a capacity of 8 cups.

Has handy spout—a permanent part of the lower bowl. With special de luxe decorative chrome stove, black handle, heat-proof bowls.

Glass stopper rod does away with filter cloths, springs, etc.

There is no metallic taste—coffee comes in contact only with glass.

Height, 9 inches.

Model C.....each \$10.45

**Sunbeam Smokemasters**



Press button and out comes a cigarette. One puff—and it lights itself.

Holds a full package of cigarettes.

Black metal barrel with chrome trim and rich black ash-tray base.

Model 6, with Barrel on Side.....each \$3.50

Model 7, with Barrel Upright.....each 3.50



**M-B Electric Toasters**

**No. K63—Fernleigh Pattern**  
110-125 Volts, 550 Watts



This two-slice tip and turn toaster has a mica wound unit and because of its attractive design is a popular appliance.

Finished in chromium plate; handles and feet are of contrasting ebony.

Standard package, 6. Shipping weight each, 4 pounds.

No. K63.....each \$3.95

**No. K69—Stancliffe Pattern**

110-125 Volts, 550 Watts



Has an efficient mica wound unit and the tip and turn feature. Just lower the doors for toasting the two slices of bread on the other side.

Finished in chromium plate; ebonized mounts.

Standard package, 6. Shipping weight each, 4 pounds.

No. K69.....each \$3.95

**No. K76—Lyndhurst Pattern**

110-125 Volts, 550 Watts



Toasts two slices of bread at a time. Has mica wound unit and reversible feature. Lowering the doors turns the bread for toasting on the other side.

Finished in chromium plate with black Arinite base. Handles and feet are of the same material available in the following two-color combinations: red balls with black collars or ivory balls with black collars.

Standard package, 6. Shipping weight each, 4 pounds.  
No. K76, with Red or Ivory Handles and Feet...each \$6.75

**No. K105—Automatic Type**

110-125 Volts, 680 Watts



This toaster toasts two slices of bread, both sides, at once. By means of the adjustable heat control lever, toast is browned just the way desired, and current automatically clicks off, telling when toast is done.

Chromium-plated finish; ebonized mounts. Has crumb drawer to keep toaster clean.

Standard package, 3. Shipping weight each, 8 pounds.

No. K105.....each \$12.50

**No. K600 M-B Electric Chafing Dishes**

110-125 Volts, 550 Watts



For preparing rarebits, relishes, game dishes, candies and dozens of other recipes. Because of the special low heat unit, this dish can be used for keeping foods hot. Has two degrees of heat.

Finished in chromium plate with either red or jet black handles of gemlike Arinite.

Capacity of pans, 3 pints. Height, 9 1/4 inches; diameter of base, 11 1/2 inches.

Furnished with a complete recipe booklet giving most of the famous chafing dish recipes.

Standard package, 3. Shipping weight, each, 10 pounds.

No. K600, with Red or Black Handles.....each \$14.95

**M-B Combination Cooker and Waffle Iron**

**No. K5157**  
110-125 Volts, 800 Watts



Can be used as a double grid, or closed to cook both sides at once; bakes, broils, fries, toasts sandwiches and by interchanging the waffle grids, bakes waffles.

A simple device incorporated in hinge, holds cover in half open position. With grease drain on lower grid. Removable grids are easily washed.

Finished in chromium plate with ebonized handles.

Standard package, 3.

Shipping wt., ea., 15 lbs.

No. K5157 Combination Cooker-Waffle Iron...each \$14.95

No. K515 Cooker Only.....each 11.95

No. 7 Waffle Grids, Size 7x11 Inches.....each 3.00

**No. K508**

110-125 Volts, 660 Watts



May be used as an open grid or closed to cook both sides at once; bakes, broils, fries, toasts sandwiches and bakes waffles.

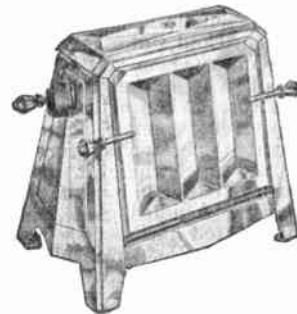
Interchangeable grids are pure aluminum, 7 inches in diameter. A special type hinge holds cover in half open position. Chromium-plated finish; ebonized wood handles.

Standard package, 6. Shipping weight, each, 10 pounds.

No. K508, Complete.....each \$8.75

**No. 1420 Proctor 2-Slice Automatic Glow-Cone Toasters**

**Turnover Type**



Toasts 2 slices of bread, one side at a time, the bread turning itself for toasting the other side as doors are flipped open and shut by a finger touch to the door handles.

Crystal glow cone, in crown of toaster, is lighted up by heating element when bread is toasting. When toasting is done, thermostat automatically shuts off current and glow-cone light goes out.

Pointed adjuster knob on control dial regulates setting of thermostat to give any degree of toasting from light to dark. Finished in chromium plate.

For use only with a.c., 110-120 volts, 500 watts.

Height, 7 1/2 inches. Table space, 7 3/4 x 4 3/4 inches.

Single package, 3 3/4 pounds. Standard carton of 6 packages; weight, 22 pounds.

No. 1420.....each \$6.75

**No. 25 M-B Disc Stoves**

110-125 Volts, 550 Watts



A 3-heat, nickel-plated disc stove which can be used for a variety of odd jobs about the house, workshop or factory.

Shipping Weight, 5 pounds.

No. 25.....each \$7.50



## M-B Electric Waffle Irons

**No. K1638—Fenway Pattern**  
110-125 Volts, 660 Watts



Heat indicator in cover gives correct baking temperature. Grids are 7 inches in diameter. Lower one is equipped with batter trough to catch any overflow.

Chromium-plated finish. Arinite handle mounts: black

balls with ivory collars or red balls with black collars. Overall diameter, 11¼ inches.

Standard package, 6. Shipping weight each, 6½ pounds. No. K1638, with Red or Black Handle Mounts... each \$7.95

**No. K1637—Chatham Pattern**  
110-125 Volts, 660 Watts



With aluminum grids; batter trough on lower one. Heat indicator gives correct baking temperature.

Chromium-plated finish; jet black moulded handles.

Diameter, 11¼ inches; height, 3¾ inches. Standard package, 6.

No. K1637, Shipping Weight 6½ Pounds.....each \$6.50

**No. K1641—Dunkirk Pattern—Automatic Type**  
110-125 Volts, 800 Watts—A.C. Only

By means of an adjustable level, waffles may be baked light or dark. Small red light in cover signals when waffle is done; automatic thermostat in base.

Finish and grids same as No. K1637. Diameter base, 11½ inches; diameter grids, 7 inches. Standard package, 6.

No. K1641, Shipping Weight, 7 Pounds.....each \$9.50

**No. K1640—Stanwick Pattern—Automatic Type**  
110-125 Volts, 800 Watts—A.C. Only



Small red light in cover flicks off when waffle is done; thermostat in base shuts off current. Adjustable bake control allows waffles to be baked light or dark.

Chromium-plated finish with black rings of baked enamel inlay on

cover and base; black and ivory Arinite handles. Aluminum grids with batter trough on lower one to catch any overflow.

Diameter base, 11½ inches; diameter grids, 7 inches. Standard package, 6.

No. K1640, Shipping Weight, 7 Pounds.....each \$10.50

**No. K1639—Fenley Pattern**  
110-125 Volts, 660 Watts



Heat indicator in cover gives baking temperature.

With aluminum grids; batter trough on lower one to catch any overflow.

Chromium-plated finish; ivory Arinite handles.

Diameter, 11½ inches; height 3¾ inches; diameter

grid, 7 inches. Standard package, 6.

No. K1639, Shipping Weight, 6½ Pounds.....each \$6.95

## No. 15102 Proctor Automatic Glow-Cone Waffle Irons

Makes a 7-inch waffle. Crystal glow cone set in lid, glows when heat is on. When light goes out, thermostat has automatically shut off heat. Proper temperatures for preheating grids or baking are selected by a turn of adjuster knob on control dial. Knob also serves to switch current off by hand.



Chromium plated finish.

Dimensions, 11½x4 inches. Capacity, 700 watts, 120 volts a.c. only.

With 6-foot cord and plug.

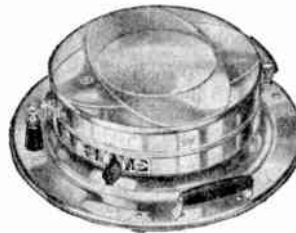
Weight, 6 pounds. Standard cartons of 6; weight, 50 pounds.

No. 15102.....each \$7.95

## No. 15101 Proctor Automatic Glow-Cone Waffle Irons

**DeLuxe Model**

A chromium-plated iron which makes a 7-inch waffle. Crystal glow cone set in lid, glows when heat is on. When light goes out, thermostat has automatically shut off heat. Proper temperatures are selected by a turn of adjuster knob on control dial. Knob also serves to switch current off by hand.



Chromium-plated iron which makes a 7-inch waffle. Crystal glow cone set in lid, glows when heat is on. When light goes out, thermostat has automatically shut off heat. Proper temperatures are selected by a turn of adjuster knob on control dial. Knob also serves to switch current off by hand.

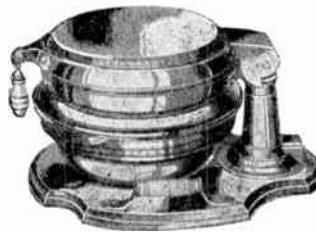
Dimensions, 11½x4 inches. Capacity, 700 watts, 120 volts a.c.

With 6-foot cord and plug.

Weight, 6 pounds. Standard cartons of 6; weight, 50 pounds.

No. 15101.....each \$11.50

## No. F3 Waffle-Witch



A complete waffle unit with bowl, ladle and grids all in one. Ladle holds just enough for one waffle.

Chromium-plated finish.

No. F3.....each \$15.00

## Silex Hi-Speed Broilers

The extremely intense heat from a 2000 watt core type heating element, properly focused in the reflector, is reflected uniformly over the entire cooking area. Food is placed immediately below the reflector on a removable griddle which is ribbed on one side and flat on the other.



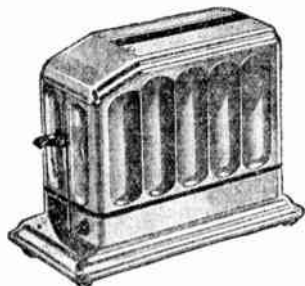
Broils ordinary steaks and chops on both sides in 4 to 7 minutes; hamburgers and frankfurters in 3 to 5 minutes. Broils chickens, fish and even small lobsters. Will shir eggs, toast bread cinnamon toast.

Capacity, 10 to 12 tenderloin steaks or approximately 125 to 140 per hour.

Each..... \$29.95

**Toastmaster Automatic Toasters**

This toaster toasts automatically. The bread is dropped into the oven slot, one lever is pressed down; the whole operation is controlled by pressing one lever. When toast is done it pops up and current is automatically turned off.

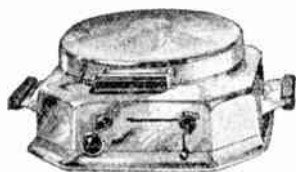


The degree of toasting is easily regulated. A perfect slice of toast is delivered in a little over a minute.

Finished in chromium plate.

Style.....	1-Slice	2-Slice
Each.....	\$11.50	\$16.00
Length...in.	9	9
Width...in.	4 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>
Height...in.	7 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>
Wattage...	600	1050
Shipping		
Wt...lbs.	4 <sup>7</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>

**Wafflemaster Automatic Waffle Irons**



Capacity, one 7-inch waffle.

A red signal shows when grids are the right heat for the batter. When waffle is done signal light changes and current is automatically cut down to low heat.

Finished in chromium plate. Artistic drip ring

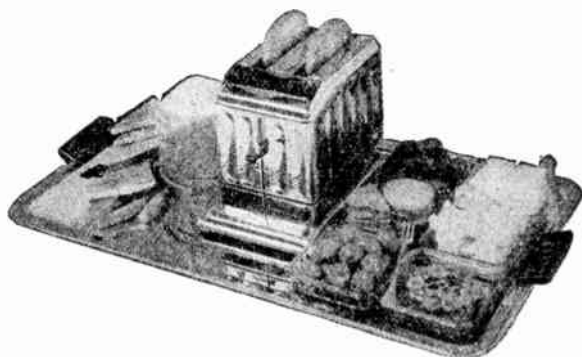
around grids is removable for easy cleaning.

Width of base, 9 inches; depth of base, 9 inches. Overall dimensions: width, 11 inches; depth, 10 inches; height, 4<sup>1</sup>/<sub>2</sub> inches. Wattage, 800.

Packed 1 in a carton; shipping weight, 10<sup>3</sup>/<sub>4</sub> pounds.

Each..... \$14.50

**Toastmaster Hospitality Units**



This unit consists of a chromium-plated tray, cutting block and knife, 6 crystal-clear glass dishes for butter, cheese, etc., and the new flexible clock Toastmaster.

Dimensions of tray: width, 14<sup>1</sup>/<sub>8</sub> inches; length, 25<sup>1</sup>/<sub>4</sub> inches; depth, 1<sup>1</sup>/<sub>8</sub> inches.

2-Slice Toastmaster and Tray Complete..... each \$19.75  
 1-Slice Toastmaster and Tray Complete..... each 15.25  
 Hospitality Tray Only..... each 7.50



**No. 193 Hankscraft Special Egg Cookers**



This cooker is simple to operate. Just place the eggs in the cooker with the proper amount of water and when steam stops, the eggs are done.

Cooks eggs evenly throughout.

Capacity, 4 eggs.

Has copper dome and ivory base.

Standard package, 4.

No. 193.....each \$2.95

**No. 1933 Hankscraft Special Egg Service Sets**



The No. 1933 set includes the No. 193 egg cooker with ivory base and copper dome, 4 double egg cups in hobnail crystal, poaching dish and copper service tray.

Standard package, 4.

No. 1933 each \$4.95

**No. 742 Hankscraft DeLuxe Egg Service Sets**



Set consists of a No. 730 polished ivory porcelain egg cooker decorated with silver, 4 matched egg cups, poaching attachments and a chromium-plated service tray.

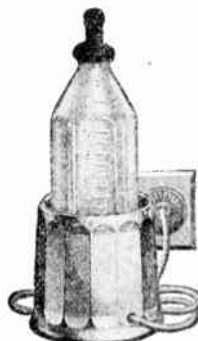
Automatic egg cooker boils, poaches, scrambles, shirrs or steam fries eggs. Has no wire coils to burn out.

Standard package, 4.

No. 742.....each \$8.50

**No. 673 Hankscraft Bottle Warmers**

**Junior Model**



The No. 673 bottle warmer heats bottles to the correct feeding temperature and then automatically shuts off.

Will heat all standard sizes of bottles.

Works on 110 volts a.c.

Furnished in blue or pink.

Standard package, 4.

No. 673.....each \$2.95



## Marion Electric Irons

### No. 111—Non-Automatic



A 6-pound fast-heating iron. Has beveled edges.

Can be used on 110 volts a.c. or d.c.

Furnished with 10000-cycle approved cord and heavy duty grip-all plug.

Wattage, 660.

Standard package, 6; shipping weight, 43 pounds.

No. 111, Nickel Finish.....each \$3.75  
No. 111, Chrome Finish.....each 3.95

### No. 111A—Automatic



A 6-pound iron which maintains a temperature at any selected degree; safeguards from overheating.

For use on a.c. only.

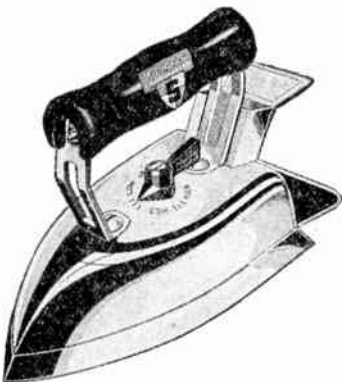
Equipped with 7-foot cord, retrieving coil, bakelite iron plug and rubber attachment plug.

Rating, 660 watts; standard voltages: 95, 110, 125, 220, 250; 60 cycles a.c. Shipping weight each 7 pounds.

No. 111A, Chrome Finish.....each \$5.95

## No. L3 Sunbeam Ironmaster Irons

For 110 Volts A.C. Only



A full size, perfectly balanced 1000-watt automatic electric iron weighing only 3½ pounds.

Has free-acting, trouble-proof thermostat control.

With tapered nose, pointed heel, heel rest and rosewood handle. Finished in chromium plate.

Packed in cartons of 6; shipping weight per carton, 30 pounds.

No. L3.....each \$6.95

## Proctor Automatic Heat-Adjusting Speed Irons



No. 930

This iron has a temperature control dial on which is marked the names of different fabrics, so that the placing of pointer on any name gives the correct temperature for that fabric.

Switch-off gives convenience of turning off current without removing plug from wall.

The attached cord removes all plug and terminal pin trouble.

Has a strong well-balanced heel rest and a cork insulated handle, air-cooled.

No. 930 has a magic stand. By pressing the thumb lever the stand swings under the iron. It may be placed anywhere, adds no weight and is never in the way.



No. 940

Over all dimensions: Length, 8¼ inches; width, 4½ inches; height, 5 inches.

No. 930, 1000-Watt, with Cord Support.....each \$8.95  
No. 940, 1000-Watt.....each 7.95  
No. 941, 800-Watt.....each 5.95

## American Beauty Irons

For domestic, laundry and industrial use.

Bottom, 6½x3¾ inches. Finished in chromium plate.

In standard voltage ranges: 100-109, 110-120, 121-130, 190-209, 220-240 and 241-260.

### Nos. 44-AB and 66-AB—Adjustable-Automatic For A.C. Only



Through increase of wattage and extra supply of heat units, same results can be obtained with No. 44-AB iron as with heavier irons. If work is properly dampened, extra heat supplied permits of less pressure on work. As thermostat switch controls overheating, it is possible to use higher wattage and gain these advantages. Through the control lever thermostat can be adjusted for low heats for lighter work and for delicate fabrics.

No. 66-AB in 1000-watt size has great heat capacity for heaviest work; lower heats are under perfect control.

Has separate stand, No. 880 cord set and No. 808 plug.

Packed 6 in a case; shipping weight, No. 44-AB, 43 pounds; No. 66-AB, 53 pounds.

No. 44-AB, 1000 Watts, Weight 4½ Pounds.....each \$8.95

No. 66-AB, 660 or 1000 Watts, Weight 6½ Pounds.....each 8.95

### Nos. 45-AB and 65-AB—Adjustable-Automatic For A.C. Only



With "on" and "off" switch which is operated by control lever. By turning control lever past "low" position to "off," current is turned off; reverse operation turns on current. Has attached heel stand, readily removable. Conductor cord is permanently attached to iron; connections enclosed in metal housing. With 6½-foot cord and attachment plug cap. In other respects same as No. 66-AB.

Packed 6 in a case; shipping weight, No. 45-AB, 37 pounds; No. 65-AB, 46½ pounds.

No. 45-AB, 1000 Watts, Weight 4½ Pounds.....each \$8.95

No. 65-AB, 1000 Watts, Weight 6½ Pounds.....each 8.95

### No. 6½-B and No. 3-B—Non-Automatic —For A.C. or D.C.



This iron has a cut-away nose and a comfortable handle. With heat-insulating stand and No. 830 cord set having No. 802 detachable composition plug and attachment plug. Elements, contacts, contact sleeves, etc., of nickel-chromium and nickel-copper alloys.

In standard voltage ranges: 100-109, 110-120, 121-130, 190-209, 219-240, and 241-260.

Packed 6 in a case; shipping weight, 52½ pounds.

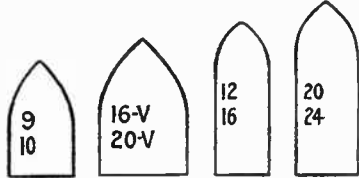
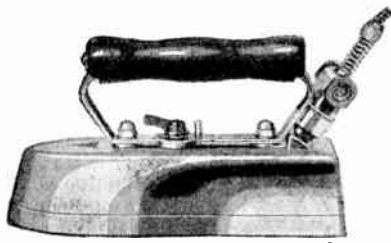
No. 6½-B, 525 Watts, Weight 6½ Pounds.....each \$7.50

No. 3-B, 350 Watts, Weight 3 Pounds.....each 6.75



**American Beauty Pressing Irons**

**Type AA—Adjustable-Automatic—For A.C. Only**



Relative Bottom Shapes

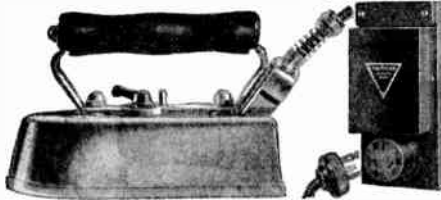
These irons are used for all kinds of commercial and industrial work.

Temperature and heat are controlled. The use of rayon and other fabrics makes imperative the use of low temperatures. At the same time where heat requirements are heavy the automatic thermostatic control permits the use of higher temperature in heating elements and a greater supply of heat.

Equipped with No. 880 cord set, 6½-foot cord and No. 808 metal-sheathed plug.

Finished in chromium plate. Furnished with separate stands.

**Type DC—Adjustable-Automatic—For D.C. Only**



The d. c. iron has the same general performance-characteristics as the Type AA iron.

With separate automatic relay switch which turns on and off the main current supply; switch action controlled by thermostatic switch within iron. Connecting cord (3-conductor) is connected to 3 terminals on iron (protected by metal housing) and has 3-point terminal attachment plug that is plugged into receptacle on relay switch base. Current may be turned "on" or "off" at the iron. Adjustable control lever when swung past "low" position turns off current; reverse action, "on." With 8-foot cord.

Relay switch should be fastened to wall or support in vertical position; will not operate properly lying down.

For A.C. Only		For D.C. Only		Size of Bottom Inches	Watts	Wt., Lbs.	Net	Ship.
Cat. No.	Each	Cat. No.	Each					
9-AA	\$12.50	9-DC	\$16.00	7 <sup>3</sup> / <sub>16</sub> x4 <sup>1</sup> / <sub>4</sub>	1000	9	11 <sup>1</sup> / <sub>4</sub>	
10-AA	14.00	10-DC	18.00	7 <sup>3</sup> / <sub>4</sub> x5	1000	10	12 <sup>3</sup> / <sub>4</sub>	
12-AA	20.00	12-DC	23.00	9 <sup>5</sup> / <sub>8</sub> x3 <sup>3</sup> / <sub>16</sub>	1000	12	16	
16-AA	21.00	16-DC	25.00	9 <sup>5</sup> / <sub>8</sub> x3 <sup>3</sup> / <sub>16</sub>	1000	16	20	
20-AA	23.00	20-DC	27.00	11 x3 <sup>3</sup> / <sub>4</sub>	1000	20	25	
24-AA	27.00	24-DC	30.00	11 x3 <sup>3</sup> / <sub>4</sub>	1000	24	30	
16-VAA	26.00	16-VDC	29.00	8 <sup>1</sup> / <sub>2</sub> x5 <sup>5</sup> / <sub>8</sub>	1000	16	25	
20-VAA	27.00	20-VDC	30.00	8 <sup>1</sup> / <sub>2</sub> x5 <sup>5</sup> / <sub>8</sub>	1000	20	28	

Types AA and DC voltage ranges: 100-109, 110-120, 121-130, 190-209, 220-240 and 241-260.

**Type B—Non-Automatic—For A.C. or D.C.**

Cat. No.	Each	Size of Bottom Inches	Watts	WEIGHT POUNDS	
				Net	Ship.
9-B	\$11.00	7 <sup>3</sup> / <sub>16</sub> x4 <sup>1</sup> / <sub>4</sub>	675	9	11 <sup>1</sup> / <sub>4</sub>
10-B	12.50	7 <sup>3</sup> / <sub>4</sub> x5	675	10	12 <sup>3</sup> / <sub>4</sub>
12-B	16.00	9 <sup>5</sup> / <sub>8</sub> x3 <sup>3</sup> / <sub>16</sub>	650	12	16
16-B	17.00	9 <sup>5</sup> / <sub>8</sub> x3 <sup>3</sup> / <sub>16</sub>	650	16	20
20-B	19.00	11 x3 <sup>3</sup> / <sub>4</sub>	750	20	25
20-HB	20.00	11 x3 <sup>3</sup> / <sub>4</sub>	1000	20	25
24-HB	23.00	11 x3 <sup>3</sup> / <sub>4</sub>	1000	24	30
16-VB	22.00	8 <sup>1</sup> / <sub>2</sub> x5 <sup>5</sup> / <sub>8</sub>	1100	16	25
20-VB	23.00	8 <sup>1</sup> / <sub>2</sub> x5 <sup>5</sup> / <sub>8</sub>	1100	20	28

Type B voltage ranges: 100-109, 110-120, 121-130, 190-209, 220-240 and 241-260.

**No. 100 Arvin Standard Fan-Forced Electric Heaters**



This heater heats the air and circulates it. Has induction type fan. Air intake is through louvres in back.

This heater has a black enamel grille and handle.

The cabinet is of heavy gauge steel with attractive and permanent green morocco finish.

Operates on 110-125 volts, 60 cycles a.c. Uses 9½ amperes at 110 volts.

Size at base, 9½x5 inches. Height, 11 inches.

Packed 6 to a case.

Shipping weight, 7 pounds.

No. 100.....each \$5.95

**No. 200 Arvin DeLuxe Fan-Forced Electric Heaters**

This heater heats the air and circulates it. Has induction type fan. Air intake is through louvres in back.



With heavy gauge steel cabinet; green morocco finish. Completely enclosed bottom; convenient switch in front. With rubber feet.

Operates on 110 or 125 volts a.c. 60 cycles; also on 110 volts 25 cycles. Uses 9½ amperes at 110 volts.

Size at base, 10x5½ inches. Height, 13 inches.

Packed 6 to a case.

Shipping weight, 9 pounds.

No. 200.....each \$7.95

**No. 1200 M-B Fan Type Auxiliary Heaters**

110-125 Volts, 1000 Watts



A small quietly-operating electric fan located directly in back of the suspended heating element throws a clean steady flow of heat almost instantly to all parts of a room.

The circular heat outlets in front and back are guarded by wire grills and the brown wood handle at top makes the heater easily portable.

Metal case is finished in beige enamel; base and outline of case are dark brown.

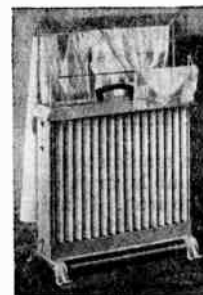
Overall height, 14 inches.

Standard package, 3. Shipping weight, each, 6½ pounds.

No. 1200.....each \$8.45

**No. 1110 Proctor Electric Radiators and Dryers**

Convactor Type



Serves as a quick dryer for small articles; equipped with telescoping rustproof racks.

Exposed surfaces kept at a maximum of 200° F. Made of heavy terne plate sheet metal; rust-resisting.

Separate circuit switches control two 660-watt elements; also with two 750-watt elements. For 110-120 volts a.c. or d.c.

Statuary bronze, pastel green or old ivory lacquer finish.

With 8-foot cord and plug.

Width, 9 inches; length, 21 inches; height, 23 inches.

No. 1110, Shipping Weight 24 Pounds.....each \$15.00

## Hewitt Electric Heating Pads

The flexible woven elements used in this pad free it from all feeling of ridges and stiff wires.

Each of the two woven elements in the pad covers its entire area, giving an even heat distribution at all times.

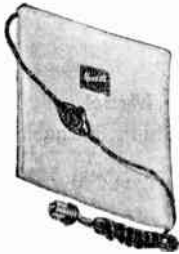
Ready to use in 2 or 3 minutes after being turned on.

Non-radio-interfering precision thermostats and low temperature heating elements insure an increased factor of safety in use.

Size, 12x15 inches. Wattage, 60; voltage, 110-125.

Each pad is wrapped in cellophane.

### No. 46—6 Heats—Wetproof



This pad has an outer cover of fine grade eiderdown—under this an inner covering made of a new permanently wetproofed fabric which permits the pad to be used for hot wet packs, etc., and also prevents damage through accidental wetting.

The label side always runs about 15° hotter than the reverse side, thus the user has the choice of 6 temperatures (two on each setting of the control switch).

Made in peach or lavender.

No. 46 ..... each \$6.50

### No. 44S—3 Heats—Wetproof

A popular new model of a newly developed fabric with a soft and woolly outside and a permanently wetproofed inner surface.

The cover is snap fastened and is removable and washable.

Made in blue only.

No. 44S ..... each \$4.45



### No. 44—3 Heats

A full-sized eiderdown pad with interior construction, thermostats, etc., identical to that of the No. 44S pad, but without the wetproof feature.

Made in brown only.

No. 44 ..... each \$3.95



## Hewitt Electric Heating Blankets

The warmth of this blanket is distributed evenly, leaving only a small unheated margin at sides and ends to permit tucking in.

Ten-foot cord has convenient on and off switch. Thermostats of low temperature setting are a positive protection against overheating, should blanket be folded up and covered over.

No. 173, 3 Heats, 120 Watts, 60x80 Inches. .... each \$17.50

No. 183, DeLuxe Model, 3 Heats, 120 Watts, 66x80

Inches, All wool ..... each 55.00

## No. 190 Hewitt Electric Sweat Blankets



This multiple heat wool blanket has a heating capacity to induce copious perspiration. It is intended for use in hospitals, electro-therapy studios or in the home under the direction of a physician or skilled attendant.

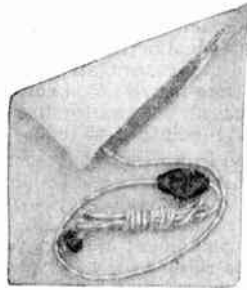
Rheostat heat control from mild to very hot. A rubber sheet is provided to protect blankets from moisture.

Size, 66x80 inches. Wattage, 220; voltage, 100-125.

No. 190 ..... each \$85.00

## No. 685 M-B Electric Heating Pads

110-125 Volts, 50 Watts



An outstanding feature of these pads is the sanitary washable velour cover. Simply slide back the zipper fastener, remove the unit, and wash the cover.

Furnished in three pastel shades: orchid, peach and apple green.

Full size, 12x15 inches.

A non-radio interfering unit.

With three heats (low, medium and high). Equipped with harmonizing 10-foot cord and pull plug.

Standard package, 3. Shipping weight, each, 2 pounds.

No. 685/2, Apple Green Cover ..... each \$6.95

No. 685/4, Orchid Cover ..... each 6.95

No. 685/5, Peach Cover ..... each 6.95

## No. 686 M-B Electric Heating Pads

110-125 Volts, 50 Watts



A permanently covered heating pad which meets the demand for a low-priced yet thoroughly dependable and guaranteed pad.

The eiderdown cover is light blue with a decorative white dot motif.

Full size, 12x15 inches.

With three heats (low, medium and high).

Equipped with 10-foot cord.

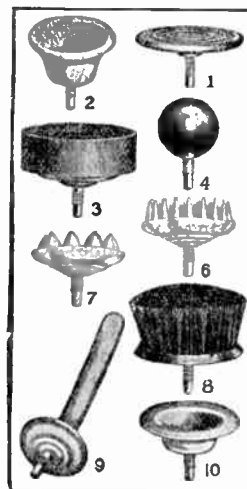
Standard package, 3. Shipping weight each, 2 pounds.

No. 686 ..... each \$3.95

## H-B Vibrator Applicators

H-B Applicators have been found to be the most practical to fill every need of every case where vibration is advisable. Each is fitted with a little threaded stem, which may be readily screwed into the end of the shaft and quickly taken off and changed when desired.

The first six applicators are included with every H-B Vibrator. Nos. 8, 9, and 10 are special, and may be had for the prices given below.



Cat. No.	Description	Price Each
1	Flat Disc made of Hard Rubber for Rubbing and Kneading the Muscles of the Body	\$ .50
2	Soft Rubber, Bell-Shaped Applicator, for Face, Neck, Arms and Bust	.50
3	Velvet Sponge for the Face, Especially Adapted to the Treatment of Eyes, Nose and Throat	.75
4	Round Ball made of Hard Rubber, the most Powerful Applicator made for Cases Requiring Vigorous Treatment	.50
6	Soft Rubber. A Favorite for Treating Skin and Scalp	.50
7	Soft Rubber, 12-prong, similar to No. 6, except it has fewer Prongs	.50
8	Bristle Brush. Wonderfully Effective for Scalp Treatment	1.00
9	Soft Rubber Rectal Applicator	1.50
10	Soft Rubber, similar to No. 2 but Larger	.50



**Type A Hamilton Beach Vibrators**



For home use. Consists of 1 vibrator, with cord and attachment plug for connecting to electric light fixture, and 6 applicators, all packed in a fibre-board fitted carrying case. The motor has a speed regulating switch.

The following applicators are furnished: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for face; No. 3 velvet sponge for face; No. 6 soft rubber for head; and

No. 7 soft rubber with 12 prongs. Revised edition, "Health and How to Get It," furnished free.

Type A Complete. . . . . each \$16.50

**Type C Hamilton Beach Vibrators**

Used by physicians, nurses and masseurs. Of heavier construction and has a more powerful motor than the vibrator for home use. For cases requiring energetic treatment. Packed in a black leatherette case, plush lined.



Following applicators are furnished with machine: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for face; No. 3 velvet sponge for face; No. 6 soft rubber for head; and No. 7 soft rubber with 12 prongs. Revised edition, library bound book, "Health and How to Get It" furnished free with vibrator.

Type C Complete. . . . . each \$19.25

**Type D Hamilton Beach Vibrators**



For family use and for the professional hair dresser and masseur who calls on patrons at their homes. Has no speed regulator. Instantly stopped or started by button in handle. Motor is universal and operates on either a.c. or d.c. Following applicators furnished with machine: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for face; No. 3 velvet sponge for face; No. 6 soft rubber for head; and No. 7 soft rubber with

12 prongs. Revised edition, library bound book, "Health and How to Get It" furnished free with vibrator.

Type D Complete. . . . . each \$13.50

**Type F Hamilton Beach Vibrators**

Provided with a speed controlling device. It gives both the rubbing and percussion strokes and is guaranteed against electrical and mechanical defects. Packed in fibre board fitted carrying case.



Following applicators furnished with this machine: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for the face; No. 3 velvet sponge for face; No. 6 soft rubber for the head; and No. 7 soft rubber with 12 prongs. Revised edition, library bound book, "Health and How to Get It" furnished free with vibrator.

Type F Complete. . . . . each \$13.50

**Klenzairs**

Circulates, purifies and refreshes 6000 cubic feet of air an hour. A gallon or so of water is used in the machine. Water is taken to four monel metal discs revolving at high speed. Spray dashes off edges of discs. Temperature of water is reduced, air is cooled and partially de-humidified in hot weather; in winter, humidification takes place.

Has rust-resisting steel body; chromium-plated hardware. Upper structure, vitreous porcelain enamel, grain walnut finish; lower structure, walnut tone lacquer finish.

Has 10-foot cord with standard plug; 60-cycle, a.c. or d.c., standard type, fractional h.p. motor; standard 2-speed "on" and "off" toggle switch.

**No. 700, Floor Model**

Height, 40 inches. Shipped knocked down. No. 700, Ship. Wt., 35 Lbs. . . . ea. \$25.00

**No. 710, Wall Bracket Model**

Adjustable as to direction of draft. No. 710, Ship. Wt., 25 Lbs. . . . ea. \$25.00

**No. 720, Desk Model**

Height, 15 inches; width of base, 17 1/4 inches; depth of base, 11 inches. No. 720, Ship. Wt., 44 Lbs. . . . ea. \$32.50

**No. 725, Hay Fever Attachment**

Fits No. 700 only. Consists of fabric tunnel with felt air filter and adjustable metal window shield. No. 725. . . . . each \$10.00



No. 700

**No. B-182B Gilbert Standard Automatic Electric Humidifiers**

Humidifies 7500 cubic feet of air.



An inverted revolving cone submerged in water draws water onto disc above it, which, also revolving and synchronizing with cone, throws water outward by centrifugal force against shutter-like vanes by which it is broken up into tiny particles that are propelled by disc and rising are absorbed by atmosphere.

With metal pedestal and copper container. Finished in green.

A.c. or d.c. 110-volt motor. Height, 37 1/2 inches. Weight, 25 1/2 pounds.

No. B-182B, Capacity, 1 Gallon. . . each \$32.50

**No. B-185 Gilbert DeLuxe Automatic Electric Humidifiers**

Humidifies 7500 cubic feet of air.



An inverted revolving cone submerged in water draws water onto disc above it, which, also revolving and synchronizing with cone, throws water outward by centrifugal force against shutter-like vanes by which it is broken up into tiny particles that are propelled by disc and rising are absorbed by atmosphere.

With metal pedestal, Fleuron Art Pottery container; humidity control automatically measures moisture content of room at all times and switches humidifier on and off. Light green finish.

A.c. or d.c. 110-volt motor. Height, 37 3/4 inches. Weight 35 3/4 pounds.

No. B-185, Capacity 1 Gallon. . . . each \$49.50



## Mixmasters



## Model B Hamilton Beach Food Mixers



For all mixing, beating, whipping and mashing. Has plenty of power for cakes, icings, salad dressings, etc.

Has self-revolving bowls with control that regulates speed at which bowls turn. Motor may be lifted from stand and used for mixing

over the stove in a double boiler or any pan. Motor tips back so beaters drain into bowl. Beaters are easily removed for cleaning. Has single agitator for mixing malted milk in a glass.

Furnished with two opaque glass ivory bowls; small bowl holds one quart, large bowl holds three quarts. With 6-foot rubber cord. Has three speeds. The Hamilton Beach motor operates on a.c. or d.c., 105-120 volts, 25 to 60 cycles; worm gear drive.

Height, 13 inches. Length of base, 12½ inches; width of base, 7 inches.

Ivory and black baked enamel finish; cast iron base has rubber feet; chromium-plated steel beaters.

Packed one in a carton. Shipping weight, 19 pounds. Model B.....each \$18.75

## Attachments

### Juice Extractor Attachment

Extracts juice from oranges, lemons and small grapefruit. Sanitary; no metal parts connected to bowls; may be washed. Has ball thrust bearings. With removable strainer, Beeteware reamer, ivory bowl of opaque glass, and removable spout to guide juice into glass.

Packed one in a carton. Shipping weight, 4 pounds. Each..... \$2.75

### Potato Peeler Attachment

Removes peel by the abrasion method. Operation: Fill top container with water. Place 8 to 10 potatoes in peeling container. Run motor about 2 minutes or until water container is empty. Potatoes will then be peeled.

Height, 11¾ inches; diameter, 9¾ inches. Made of galvanized steel, ivory enamel finish. Abrasion liner and revolving disc lift out for easy cleaning. Packed one in a carton. Shipping weight, 12 pounds. Each..... \$8.00

### Coffee Grinder Attachment

Sets on motor where extractor lifts off. No power unit is needed. Top glass jar holds one pound. Adjustable; grinds coarse for boiling, medium for percolating and very fine for vacuum or drip coffee makers.

Packed one in a carton. Shipping weight, 5¼ pounds. Each..... \$3.00

### Slicer and Shredder Attachment

Cannot be used without power unit. Slicer cone with 6 knives revolves in housing and quickly slices potatoes, beets, turnips, cucumbers, apples and other fruits or vegetables. Slicer cone is easily replaced by shredder cone. Shreds practically all vegetables and fruits.

Packed one in a carton. Shipping weight, 2¾ pounds. Attachment without Power Unit.....each \$3.50

### Meat Grinder and Chopper Attachment

For grinding meat, chopping vegetables, fruits and nuts and for crumbing bread or crackers. Cannot be used without power unit. Has inside cutter for grinding meat without crushing it; also has coarse plate and two cutters for chopping vegetables. Furnished with wooden stomper.

Packed one in a carton. Shipping weight, 4¾ pounds. Each..... \$3.00

### Power Unit

For use with meat grinder and slicer-shredder attachment. Power unit is not connected to mixer, instead, motor is taken to power unit. Power unit stands on its own rigid base. Ball-bearing construction; drive attachments about 40 r.p.m.

Packed one in a carton. Shipping weight, 6½ pounds. Each..... \$4.50

For mashing, juicing, beating, whipping, stirring and blending. Enclosed motor tilts back; bowls are easily removed. Bowls revolve on ball-bearing platform. Base and upright is one die-cast unit; handle turns down on side, out of the way of juicer attachment.

Ivory enamel and chrome finish; jade green bowls. Model D, with Beaters and 2 Bowls,.....each \$18.25 Model K, with Beaters, Bowls, Juice Extractor and Strainer, Automatic Mayonnaise Oil-Dropper as Shown.....each \$21.00

## Attachments

### Food Chopper



Chops vegetables; grinds meat. With power transfer unit. Each..... \$6.25 Power Unit Only...ea. 2.50

### Can Opener



Turns can, opens it and holds it until removed. Uses same power unit as chopper. Without Power Unit...ea. \$2.00

### Drink Mixer



Operates at same high speed as commercial mixers. No power unit required. With Mixing Glass...ea. \$2.25

### Slicer-Shredder



For vegetables and fruit. No power unit required. Each... \$5.00 Grater Disc.....each 1.00

### Potato Peeler



Removes only surface skin. No power unit required. Each..... \$4.50

### Freezer



No power unit required. Each..... \$3.50

### Coffee Grinder



Grinds coffee coarse, medium or fine. Uses same power unit as chopper. Each..... \$2.50

### Knife Sharpener



Puts smooth edge on knife and scissor blades. Uses same power unit as chopper. Without Power Unit...ea. \$2.25

### Polisher-Buffer



For metal surfaces. No power unit required. With Sunbeam Polishing Compound.....each \$.75

**Hamilton Beach Hair Dryers**

115 Volts, A.C. or D.C.

Ideal for professional use in barber shops and beauty parlors, or for hard service in a large family.

Handy in a drafting room for quick-drying blue prints, in photograph galleries for all drying, and for medical heat treatment.

The case is of finest solid aluminum, triple-buffed and polished.

The convenient button in the handle controls the motor, as well as the cold and hot blasts, which are evenly distributed, by the improved high velocity muzzel.

Fan is fully enclosed.

Weight, packed, 5 pounds.



No. 2 .....each \$16.50

**No. 3 Hamilton Beach Hair Dryers**

110-120 Volts, A.C. or D.C.

Light, simple and powerful. Can be held in the hand or set in the stand at any desired angle, leaving hands free for scalp massage while hair is drying. Adjustment is instantaneous and automatic. Stays where it is put and stand is quickly detachable. Finished in ivory, old rose, orchid or robin's egg blue.

Fan is fully enclosed. Dries the heaviest head of hair in a few minutes.

Gives hot or cold blast by simply touching the switch.



No. 3, Without Stand .....each \$12.75

No. 3, With Stand .....each 14.00

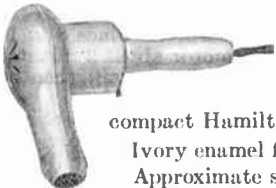
**No. 5 Hamilton Beach Hair Dryers**

This dryer gives warm or cool blasts of air. Has a quiet, compact Hamilton Beach motor.

Ivory enamel finish. Gray silk cord.

Approximate shipping weight, 4 pounds.

No. 5 .....each \$7.95



**No. B-92 Gilbert Hair Dryers**

110 Volts A.C. or D.C.

Designed for home use, for drying hair, shoes, delicate fabrics, etc.

This is a motor-driven blower type dryer; throws hot air only. Operates on 110 volts a.c. or d.c. 60 cycles or less.

Has ivory colored handle; finished in ivory.

Equipped with toggle switch, green cord and plug cap.

Weight each, 2¾ pounds; carton of 6 weighs 18 pounds.

No. B-92 .....each \$5.95

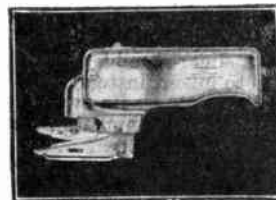


**No. S2 Electric Scissors**

A fast, easy way to cut all kinds of cloth and fabrics.

Simple, compact and easily handled.

No. S2 .....each \$6.50



**No. 1 Gilbert Electric Mixers**

A portable type mixer for mixing drinks, whipping cream, beating eggs and other light mixtures.

With 110-volt induction motor; operates on a.c. 60 cycles only. Encased in chromium-plated shell.

Detachable agitators are nickel-plated heavy gauge steel wire securely fastened to motor spindle. With metal base and rubber feet. Curved-nickel-plated upright rod with extension supporting arm for motor. Adjustable at top and bottom for varying heights. Has large glass mixing receptacle.

Finished in chromium, blue and gray. Size, 5¾x8¾ in. Wt. each, 4 lbs. Packed 6 to a carton; wt., 38 lbs. No. 1 .....each \$2.95



**No. B-124 Sunkist Juniette Apartment Size Juice Extractors**

A compact, attractive juice extractor with useful glass and strainer.

Has toggle switch.

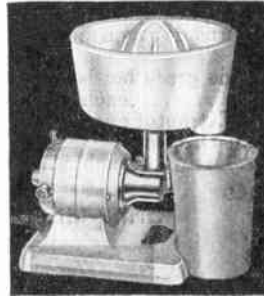
Operates on 110 volts, 60 cycles or less, a.c. or d.c.

Finished in ivory and nickel.

Height over all, 7½ inches; width over all, 7 inches.

Weight, 5 pounds.

Packed 6 in a carton; weight, 42 pounds.



No. B-124 .....each \$6.95

**No. B-123 Gilbert Sunkist Junior Electric Fruit Juice Extractors**

For home use. Quickly and efficiently extracts juice from oranges and lemons, leaving only the membranous tissue and the rind.

Universal motor operates on 110 volts, 60 cycles or less, a.c. or d.c. Motor protected from moisture.

With chromium-plated body, black base, removable bowl and reaming bulb, ivory.

Bowl 6¼ inches in diameter, 2¾ inches deep. Metal base with rubber feet. Toggle switch, standard cord with plug cap.

Height over all, 10 inches; width, 7 inches.

Packed 6 in a carton; weight, 64 pounds.

No. B-123 .....each \$12.50



**No. B-87 Gilbert Vibrators**

110 Volts A.C. or D.C.

A universal motor vibrator that operates on 110 volts a.c. or d.c., 60 cycles or less. Complete with 3 applicators—brush, button and cup. Circular vibration. Automatic oiling system. Used on either a.c. or d.c. socket rotator, spring friction relief. Two part drawn

steel shell and ivory colored wood handle, finished in ivory. Has toggle switch and green cord with plug cap.

Length of handle, 4¾ inches; length over all, handle and motor, 7 inches. Weight each, 2¾ pounds.

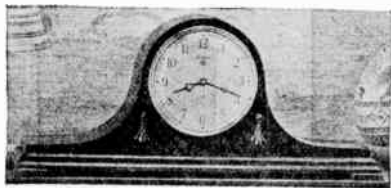
Packed 1 dozen to a carton; weight, 30 pounds.

No. B-87 .....each \$5.50





## Warren Telechron Self-Starting Electric Clocks



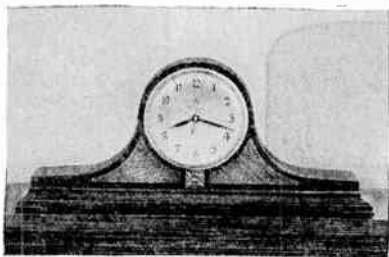
**Huntington Model**

A low-priced tambour model clock.

Has mahogany case with Spanish high-lighted finish and relief ornaments. Ivory enamel dial, 4½ inches.

Height, 7¾ inches; width, 17¼ inches; depth, 3¾ inches.

No. 563.....each \$8.95

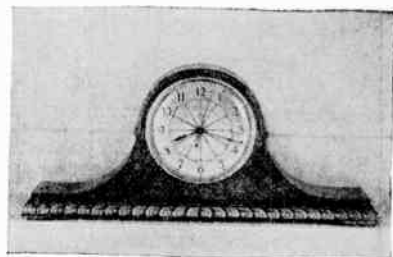


**Maynard Model**

Has mahogany case with Spanish high-lighted finish; lacewood panels in front. Gold finished, etched dial, 4½ inches.

Height, 7¾ inches; width, 17¼ inches; depth, 3¾ inches.

No. 4FO1.....each \$9.95



**Norwood Model**

A large tambour model clock. Mahogany case has Spanish high-lighted finish and carved base. Gold finished, etched dial, 5½ inches.

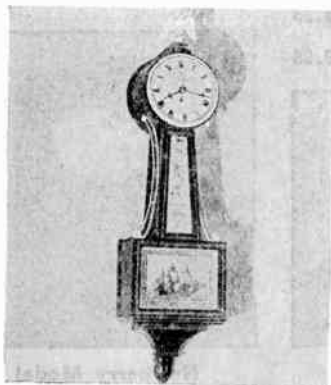
Height, 8¼ inches; width, 20 inches; depth, 5 inches.

No. 5FO1.....each \$15.00

### Auxiliary Movement Household Clocks

The Telechron auxiliary movement is a simple mechanism which maintains correct time when electric current is interrupted. Should a current interruption occur, it immediately starts to work, and continues to operate for a period of about two hours—should an interruption last that long.

This movement automatically starts, stops and winds itself. Equipped with Telechron self-starting motors.



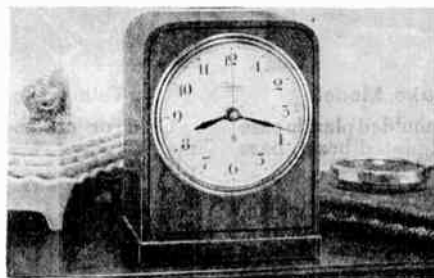
**Bullfinch Model**

A half size banjo wall model clock. Has mahogany case with colored glass panels. Early American clipper-ship scene.

Enameled dial. 3½ inches.

Height, 20¼ inches.

No. 694.....each \$17.50

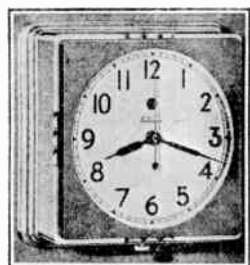


**Renault Model—Directoire Style**

Has mahogany case, Spanish high-lighted, lacquer finish with inlaid border. Dial, 3½ inches.

Height, 6 inches; width, 4¾ inches; depth, 3¾ inches.

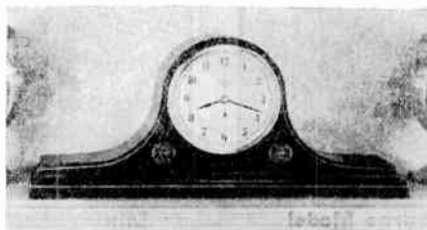
No. 3A51.....each \$16.00



**Consort Model**

A wall model clock for kitchens and bathrooms. Has chrome plated brass case with Beetle moulded bezel in green, ivory, white, black, blue and red. Size across, 5¾ inches.

No. 2FO1.....each \$4.95



**Bishop Model—Sheraton Style**

Has mahogany case, Spanish high-lighted, lacquer finish with inlaid border and carved overlay ornaments. Dial, 4½ inches.

Height, 6¾ inches; width, 17 inches; depth, 3¾ inches.

No. 4A01.....each \$20.00



**Square Wood Case**  
Oak or Mahogany Finish

No.	Oak Each	*Mahogany Each	Case Size In.	Diam. Dial In.
908	\$17.00	\$18.00	10¾	8
910	19.00	20.00	13	10
912	20.00	21.00	15½	12
915	27.00	28.00	19	15
918	42.00	46.00	23	18
924	85.00	90.00	30	24

\*Spanish high-lighted finish.

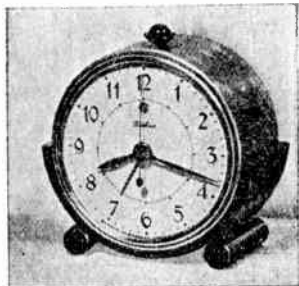


**Round Metal Case**  
Statuary Bronze Finish

No.	Each	Case Size In.	Diameter Dial In.
108	\$15.00	12	8
110	16.00	14	10
112	17.00	16¾	12
115	24.00	19¾	15
118	40.00	24	18
124	85.00	30¾	24



Warren Telechron Self-Starting Electric Clocks



**Telebell Alarm Clock**

With Butler-finish metal case; polished moulded plastic base. Ivory enamel finish dial, 3½ inches.

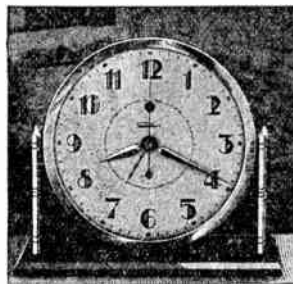
Height, 4¾ inches; width, 4½ inches; depth, 3 inches.  
 No. 7F53A, Gold Color Case; Black or Ivory Base... each \$5.95  
 No. 7F53B, Chrome Case; Green, Black or Red Base... each 5.95



**Telalarm Alarm Clock**

Dial can be clearly illuminated through diffusing glass by means of a tiny Mazda lamp.

Dura-alloy (silver color) case, non-tarnishing finish Moulded, black base.  
 Height, 5 inches; width, 4¼ inches; depth, 3 inches.  
 No. 711.....each \$9.95



**Signalette Alarm Clock**

The unusual visibility of this clock (4½-inch dial) is immediately discernible.

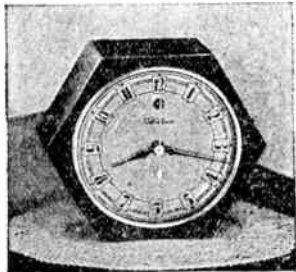
Gold or chrome finish metal frame; glossy black plastic base.  
 Height, 5½ inches; width, 6½ inches; depth, 3 inches.  
 No. 7F55A, Gold Finish.....each \$9.95  
 No. 7F55B, Chrome Finish.....each 9.95



**Autolarm Alarm Clock**

Has an illuminated dial. With 24-hour, automatic alarm feature.

Moulded walnut color Heppel white style case with gold finished handle and feet.  
 Height, 6½ inches; width, 4¾ inches; depth, 3½ inches.  
 No. 7B01.....each \$12.50



**Daphne Model**

Moulded Catalin (natural buffed finish) case in green, ivory, black, red or rose quartz.

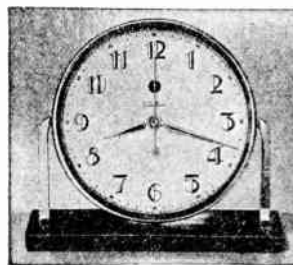
Height, 3⅝ inches; width, 4⅜ inches; depth, 2⅜ inches.  
 No. 3F53.....each \$4.50



**Duke Model**

Black moulded plastic case with gold-plated bezel, base outline and feet.

Height, 4⅜ inches; width, 4 inches; depth, 2¼ inches.  
 No. 3F51.....each \$4.50



**Telart Model**

Gold or chrome finished metal frame; glossy black plastic base. Dial, 4½ inches.

Height, 5½ inches; width, 6¼ inches; depth, 3 inches.  
 No. 4F51A, Gold,each \$5.95  
 No. 4F51B, Chrome Finish.....each 5.95



**Newberry Model**

Polished lacquer finish case with relief ornament.

Height, 6½ inches; width, 6 inches; depth, 2¾ inches.  
 No. 3F55M, Mahogany Case.....each \$5.95  
 No. 3F55MP, Maple Case.....each 5.95

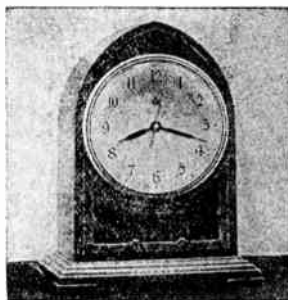


**Diana Model**

With translucent illuminated dial. Rheostat can regulate intensity of light.

Beetle black case; chrome finished metal feet and handle.

Height, 7½ inches; width, 4¾ inches; depth, 3⅝ inches.  
 No. 358..... each \$9.95



**Shelburne Model**

Has mahogany case with Spanish high-lighted finish; lacewood panels.

Gold finished etched dial, 4½ inches.  
 Height, 9 inches; width, 7 inches; depth, 4½ inches.  
 No. 532.....each \$9.95



**Minitman Model**

Brown mahogany case; matched satinwood ornamental front and top panels; statuary bronze escutcheon plate. Three drum type dials indicate hours and minutes.

Height, 6¼ inches; width, 4⅜ inches; depth, 3⅝ inches.  
 No. 8B03.....each \$9.95



**Minitmaster Model**

Time is indicated by numerals; seconds "pass in review" on a revolving disc. Has illuminated face.

Black plastic case; gold finished metal ornaments; etched design on crystal.  
 Height, 6⅝ inches; width, 4⅜ inches; depth, 3⅝ inches.  
 No. 8B01..... each \$10.95

## Revere Chiming Clocks

Telechron Motored Self-Starting Synchronous Movement

Westminster Chimes

Westminster chimes on all quarters on deep, resonant, silver-toned rods, with harmonious chord hour strike.

Chimes can be silenced.



**No. R-642** ..... each \$50.00

Honduras mahogany, lacquer finish; bird's-eye maple overlay. Metal feet, handle and corner ornaments.

Height, 12 inches; width, 8½ inches; depth, 5 inches.

Dial, 5 inches. Raised numerals.



**No. R-820** ..... each \$30.00

Honduras mahogany, lacquer finish.

Height, 11¾ inches.

Width, 7½ inches.

Depth, 5⅞ inches.



**No. R-802** ..... each \$35.00

Honduras mahogany, inlaid lines; lacquer finish.

Height, 7¾ inches; width, 18½ inches; depth, 5½ inches.



**No. R-603** ..... each \$37.00

Honduras mahogany, lacquer finish; bird's-eye maple overlay.

Height, 9 inches; width, 21 inches; depth, 6 inches; dial, 5 inches.



**No. R-822** ..... each \$40.00

Honduras mahogany, lacquer finish; burl overlay.

Height, 7¾ inches; width, 17½ inches; depth, 4⅞ inches.

Raised numerals.



**No. R-608** ..... each \$42.50

Honduras mahogany, lacquer finish; bird's-eye maple overlay.

Height, 9 inches; width, 20½ inches; depth, 6 inches.

Dial, 5 inches. Raised numerals.



**Revere Chiming Clocks**  
**Telechron Motored—Self-Starting Synchronous Movement**  
**Westminster Chimes**

Westminster chimes at all quarters on deep, resonant, silver-toned rods, with harmonious chord hour strike. Chimes can be silenced.

Floor model clocks are made in various models only two of which are shown. Special bulletins on other models gladly furnished on application.



**Vivienne Model Grandmother Clock**

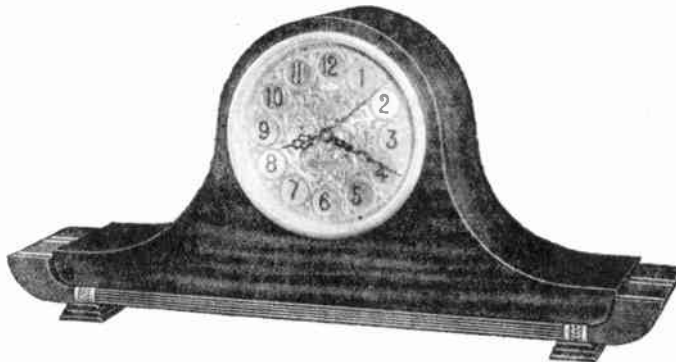
Early American style.

Honduras mahogany; lacquer finish.

Height, 73 inches; width, 13 inches; depth, 8 inches.

Silver dial. Westminster chimes.

Each ..... \$110.00



**No. R-444** ..... each \$55.00

Honduras mahogany, lacquer finish; clear maple end. Cast metal decorations.

Height, 10¾ inches; width, 22½ inches; depth, 6 inches. Six-inch gold dial. Raised numerals.



**No. R-442** ..... each \$70.00

Honduras mahogany, lacquer finish; matched grain mahogany front. Hand carved decorations.

Height, 11 inches; width, 21 inches; depth, 7¼ inches. Gold dial six-inch. Raised numerals.

**Hour and Half-Hour Strike**

Strikes on hour and half hour on rich tone spiral silver-toned rod.



**No. R-934** ..... each \$27.00

Honduras mahogany, lacquer finish; crotch mahogany panels.

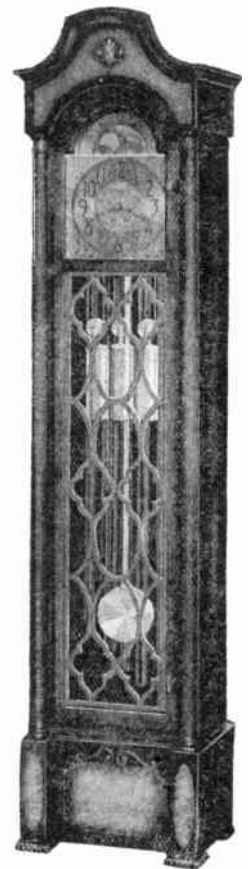
Height, 11¾ inches; width, 7½ inches; depth, 4¼ inches.



**No. R-932** ..... each \$21.50

Honduras mahogany, lacquer finish bird's-eye maple overlay.

Height, 7¾ inches; width, 17¼ inches; depth, 4½ inches.



**Roxbury Model**

Colonial style.

Honduras mahogany, lacquer finish; burl panels, gold dial.

Height, 72½ inches; width, 17¼ inches; depth, 12 inches.

3 Chimes on 9 Tubular Bells, Movement A. ea. \$340.00

2 Chimes on 7 Tubular Bells, Movement B. ea. \$300.00

1 Chime on 5 Tubular Bells, Movement C. ea. \$270.00



**No. R-930** ..... each \$21.50

Oak or mahogany; raked grain, dove color finish.

Height, 9¼ inches; width, 6¾ inches; depth, 4 inches.



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## Hubbard Forged Steel Pins

With 1-Inch Lead Thread for Low Voltage Insulators

Hot Galvanized

For lighting, telephone and telegraph lines on which insulators with 1-inch pin holes are used. Eliminates danger of extreme temperature changes causing rupture of porcelain due to expansion.

Pins can be driven into crossarms or poles without injury to thread, although driving is not recommended.

### Long Shank Type—For Wood Crossarms

Furnished with lock nuts.



No. 981S

No.	Per 100	Diam.		LENGTH, INCHES			Ship. Wt. Lb. per 100
		Shank In.	Base In.	Above Base	Below Base	Overall	
971	\$59.48	1/2	1 3/4	5	5 1/2	10 1/2	129
981	67.85	5/8	2	5	5 3/4	10 3/4	206
981A	68.69	5/8	2	5	6 1/2	11 1/2	214
983	74.65	5/8	2	6	5 3/4	11 3/4	224
984	70.21	5/8	2	6	6 1/2	12 1/2	219
990	99.89	3/4	2 1/2	6	6 1/2	12 1/2	304
990A	97.98	3/4	2 1/2	5	6 1/2	11 1/2	294
<b>Saddle Base</b>							
981S	\$74.99	5/8	2	5	5 3/4	10 3/4	238
981AS	75.83	5/8	2	5	6 1/2	11 1/2	246
983S	81.79	5/8	2	6	5 3/4	11 3/4	256
984S	77.35	5/8	2	6	6 1/2	12 1/2	251
990AS	105.12	3/4	2 1/2	5	6 1/2	11 1/2	336
990S	107.03	3/4	2 1/2	6	6 1/2	12 1/2	326

### Short Shank Type—For Wood Crossarms

Furnished with spring lock washers.



No.	Per 100	DIAMETER INCHES		LENGTH, INCHES			Ship. Wt. Lb. per 100
		Shank	Base	Above Base	Below Base	Overall	
972	\$58.11	1/2	1 3/4	5	1 1/4	6 1/4	105
986	63.64	5/8	2	5	1 1/2	6 1/2	126
987	85.41	5/8	2	6	1 1/2	7 1/2	135
993-A	119.03	3/4	2 1/2	4 3/4	1 1/2	6 1/4	181
993	119.03	3/4	2 1/2	6	1 3/4	7 3/4	181

### Lag Screw Type—For Pole and Transformer Wiring



No.	Per 100	DIAMETER INCHES		LENGTH, INCHES			Ship. Wt. Lb. per 100
		Shank	Base	Above Base	Below Base	Overall	
973	\$53.33	1/2	1 3/4	4 3/4	3	7 3/4	97
975	61.33	1/2	1 3/4	6	3	9	109
988	60.04	5/8	2	4 3/4	3	7 3/4	116
989	90.01	5/8	2	7 1/2	4	11 1/2	150
994	120.95	3/4	2 1/2	6	4	10	184

## Hubbard Broad Base Forged Steel Pins

With 1-Inch Lead Thread

Hot Galvanized

For supporting heavy primary and secondary lines on wood crossarms.

For flat top arms and roof arms.

Width of base, 2 1/2 inches. Diameter of shank, 5/8-inch.



No. 1091S

No.	Per 100	Flat Base		Length Shank In.	Wt. Lb. per 100
		Height Above Arm, In.	Wt. Lb. per 100		
1091	\$114.21	4 1/2	5 1/2	209	
<b>Saddle Base</b>					
1091S	\$121.37	4 1/2	5 1/2	244	

## Hubbard O-B Insulator Pins

Hot Galvanized

For Wooden Arms

PATENTED



Pins with 5/8-inch shanks are furnished with 2 1/4-inch square washer.

Pins with 3/4-inch shanks have 3-inch square washers.

Furnished with M.F. locknut, as shown.



### With 1-Inch Lead Thread

No.	Per 100	Rectangular Curved Base	Per 100	DIMENSIONS, INCHES				Approx. Ship. Wt. Lb. per 100		
				Length Above Arm	Length Below Arm	Shank Diam.	Curved Base			
71305	\$130.74	71345	\$142.17	5	6 1/2	5/8	2 5/8 x 2 7/8	2 3/4	7/8	273
71308	135.54	71348	146.97	6	6 1/2	5/8	2 5/8 x 2 7/8	2 3/4	7/8	298
71807	151.04	71857	169.61	6	6 1/2	3/4	3 x 3 1/2	3	1	305
71820	155.44	71860	174.01	7	7	3/4	3 x 3 1/2	3	1	330

### With 1 1/4-Inch Lead Thread

71810	\$141.25	71850	\$152.68	6	6 1/2	5/8	2 5/8 x 2 7/8	2 3/4	7/8	445
71811	145.71	71851	157.50	7	7	5/8	2 5/8 x 2 7/8	2 3/4	7/8	490
71814	150.47	71852	161.90	8	7	5/8	2 5/8 x 2 7/8	2 3/4	7/8	515
71404	150.20	71454	167.71	5	6 1/2	3/4	3 x 3 1/2	3	1	457
71407	156.76	71457	175.33	6	6 1/2	3/4	3 x 3 1/2	3	1	451
71411	161.16	71461	179.73	7	7	3/4	3 x 3 1/2	3	1	491
71414	167.12	71464	185.69	8	7	3/4	3 x 3 1/2	3	1	525
71420	238.06	71470	296.97	10	7	3/4	3 x 3 1/2	3	1	580
71423	244.15	71473	300.03	11	7	3/4	3 x 3 1/2	3	1	614
71426	250.24	71476	306.13	12	7	3/4	3 x 3 1/2	3	1	660
71417	231.96	71467	290.86	9	7	3/4	3 x 3 1/2	3	1	549
71608	216.13	71658	272.01	8	7	3/4	3 3/4 x 4	3 3/4	1 1/8	601
71611	284.19	71661	340.07	9	7	3/4	3 3/4 x 4	3 3/4	1 1/8	638
71614	289.22	71664	345.10	10	7	3/4	3 3/4 x 4	3 3/4	1 1/8	677
71617	321.54	71667	377.42	11	7	3/4	3 3/4 x 4	3 3/4	1 1/8	710
71620	350.78	71670	435.89	12	7	3/4	3 3/4 x 4	3 3/4	1 1/8	752
71623	380.01	71673	435.89	13	7	3/4	3 3/4 x 4	3 3/4	1 1/8	784

### For Channel Arms

PATENTED

Shank extends 1 1/2-inch below the base and has 3/4-inch diameter threads.



### With 1-Inch Lead Thread

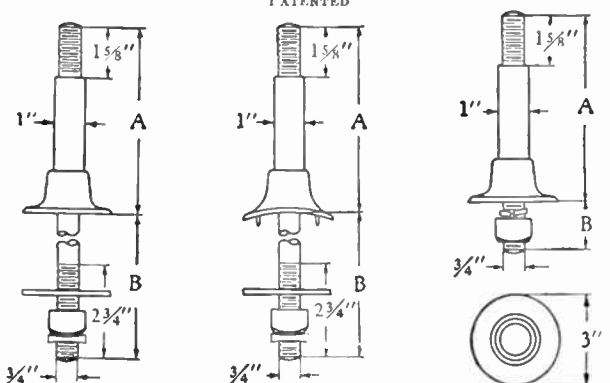
No.	Per 100	DIMENSIONS, INCHES			Ship. Wt. Lb. per 100
		Length Above Arm	Base Diam.	Body Diam.	
71952	\$129.21	6	3	1	355
71953	133.37	7	3	1	382

### With 1 1/4-Inch Lead Thread

71552	\$134.93	6	3	1	358
71553	139.09	7	3	1	384
71554	146.88	8	3	1	410
71556	200.13	10	3	1	433
71557	205.48	11	3	1	497
71558	210.83	12	3	1	537
71752	202.41	8	3 3/4	1	503
71753	262.19	9	3 3/4	1 1/8	524
71754	266.49	10	3 3/4	1 1/8	589
71755	304.39	11	3 3/4	1 1/8	623
71756	332.08	12	3 3/4	1 1/8	653
71757	359.75	13	3 3/4	1 1/8	687



**Hubbard O-B Insulator Pins**  
Separable Thimble Type  
Hot Galvanized



Insulator end has 3/4-inch thread for attaching a separable thimble.

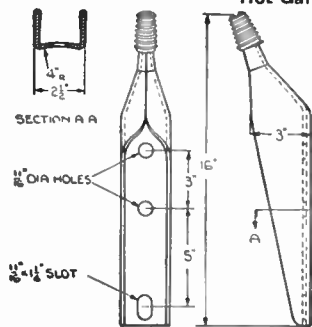
**For Wood Arms**

Flat Base		Curved Base		DIMENSIONS, INCHES			
No.	Per 100	No.	Per 100	A	B	Curved Base	Flat Ship. Base Wt. Lb. per 100
71485	\$150.20	71515	\$167.71	4 5/8	7	3x3 1/2	3 316
71491	161.16	71521	179.73	6 5/8	7	3x3 1/2	3 372
71497	231.96	71527	290.85	8 5/8	7	3x3 1/2	3 419
71500	238.05	71530	296.95	9 5/8	7	3x3 1/2	3 446

**For Channel Arms**

		DIMENSIONS, INCHES			Ship. Wt. Lb. per 100
No.	Per 100	A	B	Base Diam.	
71432	\$129.90	4 5/8	1 1/2	3	234
71433	134.93	5 5/8	1 1/2	3	260
71434	139.08	6 5/8	1 1/2	3	275
71435	146.87	7 5/8	1 1/2	3	314
71436	194.78	8 5/8	1 1/2	3	341
71437	200.13	9 5/8	1 1/2	3	367

**No. 3029 Hubbard Angle Pressed Steel Pole Top Pins**  
Hot Galvanized



Angle of 20°.

Has standard 1-inch diameter lead thread.

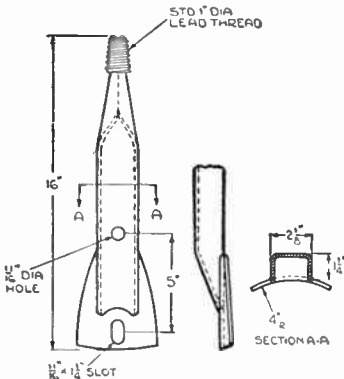
Overall length, 16 inches. Hole spacing, 3 and 5 inches.

Thickness of steel, 3/16-inch.

Approximate shipping weight, 490 pounds.

No. 3029..per 100 \$193.27

**No. 3283 Hubbard Pressed Steel Pole Top Pins**  
Hot Galvanized



Has flared base, and standard 1-inch diameter lead thread.

Overall length, 16 inches. Hole spacing, 5 inches.

Thickness of steel, 3/16-inch.

Approximate shipping weight, 294 pounds.

No. 3283 .....per 100 \$102.00

**Peirce Standard Pressed Steel Pole Top Pins**  
Hot Galvanized



Made from No. 9 gage sheet steel, pressed to a channel shape measuring 1 3/4 x 1 1/8 inches.

**Lead Thread Type**

No.	Per 100	Lgth. Over-All In.	Hole Spacing In.	Diam. Thrd. In.	Ship. Wt. Lb. per 100
3034	\$99.10	18	8	1	319
3039	122.02	18	8	1 3/8	409
3044	200.99	24	8	1	424
3049	223.90	24	8	1 3/8	506

**Peirce Pole Top Pins**  
Hot Galvanized

For higher voltage lines, extra heavy pipe pins are often used because of their high strength and light weight. They offer a considerable extension above the pole top.

Mounting holes are 1/16 inch in diameter.

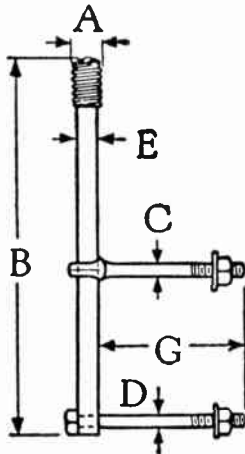
If it is desired to mount these pins by means of the pipe supporting fixtures listed below, specify pins with bottom mounting hole only.

**1 3/8-Inch Lead Thread**

No.	Per 100	Lgth. In.	Nom. Size Pipe, In.	Hole Spacing In.	Ship. Wt. Lb. per 100
3070	.....	18	1 1/4	8	385
3071	\$330.39	18	1 1/2	8	503
3073	398.15	24	1 1/2	8	908
3075	.....	28	1 1/2	8	985
3076	650.32	28	2	8	1207
3077	.....	32	1 1/2	10	1040
3078	.....	32	2	10	1391
3079	.....	36	2	10	1576
3093	.....	22 1/2	1 1/2	8	908



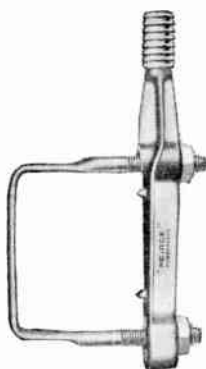
**Hubbard O-B Solid Steel Pole Top Pins**



8-Inch (G)			11-Inch (G)			DIMENSIONS, INCHES				
No.	Per 100	Wt. Lb. per 100	No.	Per 100	Wt. Lb. per 100	A	B	C	D	E
71120	\$294.85	767	71122	\$300.57	831	1	20	5/8	1/2	1
71124	324.87	879	71126	330.59	937	1	24	5/8	1/2	1
71140	304.24	835	71142	309.96	895	1 3/8	20	5/8	1/2	1
71144	333.33	949	71146	339.04	1010	1 3/8	24	5/8	1/2	1
71148	368.83	1070	71150	374.55	1120	1 3/8	28	5/8	1/2	1
71152	406.76	1180	71154	412.47	1240	1 3/8	32	5/8	1/2	1
71156	446.34	1280	71158	452.05	1340	1 3/8	36	5/8	1/2	1
71164	346.01	1200	71166	351.73	1280	1 3/8	24	3/4	5/8	1 1/8
71168	380.83	1320	71170	386.55	1400	1 3/8	28	3/4	5/8	1 1/8
71172	417.86	1450	71174	423.58	1530	1 3/8	32	3/4	5/8	1 1/8
71176	457.96	1580	71178	463.67	1660	1 3/8	36	3/4	5/8	1 1/8

## Peirce 1-Inch Drop-Forged Clamp Pins

Hot Galvanized



May be used at angles in the line when assembled with a crossarm reinforcing plate.

On straight line runs the pin is used without the plate and is prevented from canting by two 1/4-inch lugs. Mounting slots are for 1/2-inch diameter crossarm straps.

Has 1-inch lead thread.

Size of crossarm, 4x5 inches and smaller.

Pin height above arm, 4 3/4 inches.

No. ....	4420
Per 100 .....	\$82.21
Shipping Weight per 100 .....	175 pounds

## Peirce Wide Base Clamp Pins

For 1-Inch Pin Hole

Hot Galvanized



Designed for angle and corner construction.

Each pin is forged from a single piece of hot rolled open hearth steel. The broad base rests evenly on the arm and prevents pin from cutting into the wood, while the four lugs hold the pin from twisting on the crossarm.

Pins are used with 5/8-inch crossarm straps.

Pin height above arm, 5 3/4 inches.

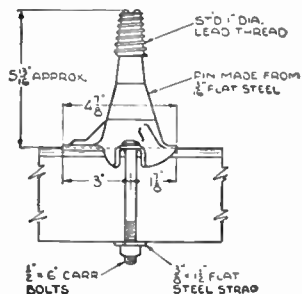
With Lead Threads

Flat Base No.	Curved Base No.	Per 100	Size of Crossarm Inches	Ship. Wt. Lb. per 100
4320	4220	\$220.70	3 1/4 x 4 1/4	405
4321	4221	220.70	3 1/2 x 4 1/2	405
4322	4222	220.70	3 3/4 x 4 3/4	475
4323	4223	220.70	4 x 5	475

Price does not include crossarm straps.

## Hubbard Broad Base Clamp Pins

Hot Galvanized



Flat Arm No.	Roofed Arm No.	Per 100	DIMENSIONS, INCHES—		Approx. Ship. Wt. Lb. per 100
			Size of Arm	Diam. of Thread	
4820	4720	\$137.35	3 1/4 x 4 1/4	1	355
4821	4721	141.79	3 1/2 x 4 1/2	1	360
4822	4722	149.25	3 3/4 x 4 3/4	1	365
4823	4723	153.67	4 x 5	1	370

## Peirce Transformer Pins

With 1-Inch Thread

Hot Galvanized

No. 126 is used for running transformer leads from the line crossarm to transformer arm. May also be used on pole for lamp leads, or for attaching any wires which are not subjected to line strains.

Screw: No. 22x2 inches.



No. 126

Forged Steel Type

Has square shoulder.

No. ....	Lead Thread No.	Per 100 .....	Shipping Weight per 100 .....
126	126	\$55.87	130 lb.
Length Above Shoulder.....	inches	5	
Length Overall.....	inches	7	
Diameter Base.....	inches	2	

## Peirce Crossarm Reinforcing Plates

Hot Galvanized



No. 5072

Used on angles and corners of lines as a reinforcement to clamp pins.

Holds the pin rigid under strains of 1200 pounds in any direction.

Used in connection with crossarm straps as listed in table.

Flat Top Arm No.	Roofed Top Arm No.	Per 100	Size of Arm Inches	Use Cross-Arm Strap No.	Ship. Wt. Lb. per 100
5071	5081	\$41.48	3 1/4 x 4 1/4	1001	110
5072	5082	42.22	3 1/2 x 4 1/2	1002	116
5073	5083	44.13	3 3/4 x 4 3/4	1003	122
5074	5084	44.51	4 x 5	1004	128
5075	5085	41.48	3 1/4 x 4 1/4	2001	110
5076	5086	42.22	3 1/2 x 4 1/2	2002	116
5077	5087	44.13	3 3/4 x 4 3/4	2003	122
5078	5088	44.51	4 x 5	2004	128

## Hubbard Drop-Forged Crossarm Straps

Hot Galvanized



For Side Arm Mounting

Designed with the spread equal to the larger dimension of the arm.

Thread length is 2 inches.

Light Type

No.	Per 100	Size of Arm Inches	SIZE STRAP, INCHES				Ship. Wt. Lb. per 100
			Spread	Lgth.	Flat Section	Round Section	
1001	\$55.49	3 1/4 x 4 1/4	4 1/4	5	3/16 x 1 1/8	1/2	103
1002	59.83	3 1/2 x 4 1/2	4 1/2	5 1/4	3/16 x 1 1/8	1/2	108
1003	64.00	3 3/4 x 4 3/4	4 3/4	5 1/2	3/16 x 1 1/8	1/2	112
1004	68.34	4 x 5	5	5 3/4	3/16 x 1 1/8	1/2	121
<b>Heavy Type</b>							
2001	\$62.29	3 1/4 x 4 1/4	4 1/4	5	1/4 x 1 3/8	5/8	145
2002	67.98	3 1/2 x 4 1/2	4 1/2	5 1/4	1/4 x 1 3/8	5/8	152
2003	73.68	3 3/4 x 4 3/4	4 3/4	5 1/2	1/4 x 1 3/8	5/8	158
2004	79.22	4 x 5	5	5 3/4	1/4 x 1 3/8	5/8	165

For Mounting on Top or Bottom of Arm

Similar to the crossarm straps listed above except that the spread is equal to the smaller dimension of the arm.

Thread length is 2 inches.



No.	Per 100	Size of Arm Inches	SIZE STRAP, INCHES				Ship. Wt. Lb. per 100
			Spread	Lgth.	Flat Section	Round Section	
1871	\$55.62	3 1/4 x 4 1/4	3 1/4	6	3/16 x 1 1/8	1/2	103
1872	59.83	3 1/2 x 4 1/2	3 1/2	6 1/4	3/16 x 1 1/8	1/2	108
1873	64.13	3 3/4 x 4 3/4	3 3/4	6 1/2	3/16 x 1 1/8	1/2	112
1874	68.48	4 x 5	4	6 3/4	3/16 x 1 1/8	1/2	121
<b>Heavy Type</b>							
1881	\$62.86	3 1/4 x 4 1/4	3 1/4	5 3/8	1/4 x 1 3/8	5/8	145
1882	68.74	3 1/2 x 4 1/2	3 1/2	5 5/8	1/4 x 1 3/8	5/8	152
1883	74.42	3 3/4 x 4 3/4	3 3/4	5 7/8	1/4 x 1 3/8	5/8	158
1884	80.23	4 x 5	4	6 1/8	1/4 x 1 3/8	5/8	165

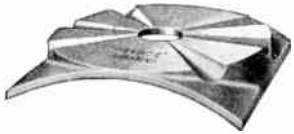
**Peirce Crossarm Saddles**  
Hot Galvanized  
Pressed Steel Type



Used in adapting a roofed top arm to a flat base pin. Fits the curve of the arm and presents a broad, flat area as a seat for the pin base.

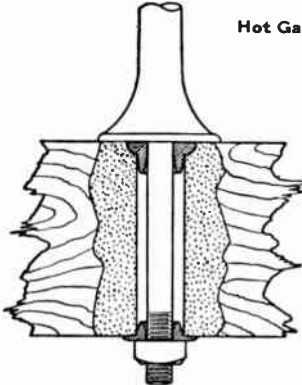
No.	Per 100	Width of Crossarm Inches	Diameter Pin Hole Inches	Shipping Wt. Lb. per 100
5001	\$29.58	3 1/4	1 3/16	104
5002	33.75	3 1/2	1 3/16	114
5003	35.52	3 3/4	1 3/16	124
5004	37.04	4	1 3/16	134
5005	45.02	5	1 3/16	144
5011	29.58	3 1/4	1 1/16	104
5012	33.75	3 1/2	1 1/16	114
5013	35.52	3 3/4	1 1/16	124
5014	36.78	4	1 1/16	134
5015	45.02	5	1 1/16	144

**No. 5008—Malleable Iron Type**



Crossarm is made in all widths. Diameter of pin hole, 1 3/16 inch. Shipping weight per 100, 109 pounds. No. 5008 . . . . per 100 \$55.88

**Hubbard Centering Washers**



Hot Galvanized

Used on stock cross arms which have been drilled for wood pins, to adopt washer to smaller shanks of steel pins. Top centering washer designed to draw down into pin hole when pin is tightened on arm, leaving top surface clear for pin base. May be used on either flat or roofed arms.

Top centering washer may also be used on bottom of arm if a standard flat washer is placed between it and nut.

**Malleable Iron Bottom Centering Washers**



No.	Per 100	DIAM. PIN HOLE, IN. In Arm	In Washer	O.D. Washer Inches	Shipping Wt. Lb. per 100
5027	\$26.41	1 1/2	1 1/16	2 1/2	33
5028	26.41	1 1/4	1 3/16	2 1/2	33

**Malleable Iron Top Centering Washers**



Provided with wings which are drawn into wood as a means of preventing turning and to provide a more solid installation.

72237	\$26.41	1 1/2	1 1/16	1 1/2	37
72225	26.41	1 1/2	1 3/16	1 1/2	44

**Pressed Steel Bottom Centering Washers**

No. 5032 is used in conjunction with a standard flat washer.

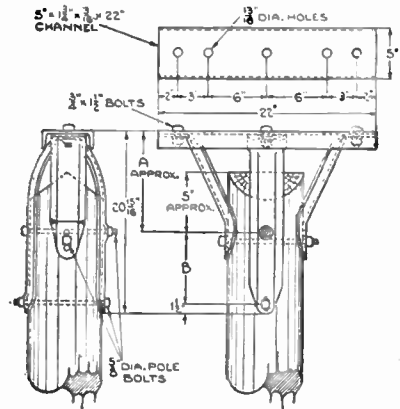
5030	\$29.33	1 1/4	1 3/16	2 1/16	34
5031	29.33	1 1/4	1 1/16	2 1/16	34
5032	29.33	1 1/2	1 3/16	2 1/16	34
5033	29.33	1 1/2	1 1/16	2 1/16	34
5029	29.33	2	1 3/16	2 7/8	39

**Forged Steel Bottom Centering Washers**



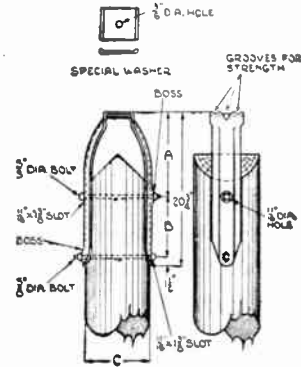
No.	Per 100	DIAM. PIN HOLE, IN. In Arm	In Washer	O.D. Washer Inches	Ship. Wt. Lb. per 100
72238	\$29.19	1 1/2	2 1/32	3 3/4	40
70346	29.19	1 1/2	2 5/32	3 3/4	40

**Hubbard Double Arming Ridge Irons**  
Hot Galvanized



No.	Per 100	Pole Diam.	Mtg. Bolt Size	Pin Hole Size	A	B	Approx. Ship. Wt. Lb. per 100
6320	\$640.07	5 1/2 to 6 3/4	5/8	1 3/16	11 1/16	8	2800
6321	640.07	6 3/4 to 8	5/8	1 3/16	11 1/16	8	2800
6322	640.07	8 to 8 1/2	5/8	1 3/16	11 1/16	8	2800

**Hubbard Ridge Irons**  
Hot Galvanized



No.	Per 100	Pole Diam.	Mtg. Bolt Size	Pin Hole Size	A	B	Approx. Ship. Wt. Lb. per 100
6308	\$321.16	5 1/2 to 6 3/4	5/8	1 3/16	11 1/4	8	1100
6309	321.16	6 3/4 to 8	5/8	1 3/16	11 1/4	8	1100
6310	321.16	8 to 8 1/2	5/8	1 3/16	11 1/4	8	1100

**Hubbard Insulated Clevises**  
Hot Galvanized



No.	Per 100	Ext. to Ctr. of Bolt	Mtg. Bolt Size	Style of Insulator	Approx. Ship. Wt. Lb. per 100
1352	\$74.38	5	5/8x4 3/8	355 Dry	305
1353	77.54	5	5/8x4 3/8	455 Wet	305

**Nos. 2968 and 2978**



Identical to Nos. 1352 and 1353 except for the addition of a No. 2969 shackle.

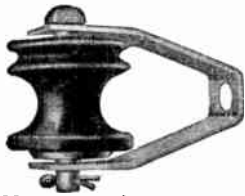
No.	Per 100	Ext. to Ctr. of Bolt	Mtg. Bolt Size	Style of Insulator	Approx. Ship. Wt. Lb. per 100
2968	\$101.96	7 1/2	5/8x4 3/8	455 Wet	319
2978	98.79	7 1/2	5/8x4 3/8	355 Dry	319



## Hubbard Insulated Clevises

Hot Galvanized

Nos. 1342 and 1333

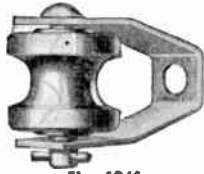


A standard, flat steel type clevis for mounting on a through bolt or an insulator bolt. Designed for  $\frac{5}{8}$ -inch bolts. Uses the standard No. 355 dry process insulator for low voltage lines. Oval mounting hole,  $\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight, 253 pounds per 100.

No. 1342, with Insulators (No. 355 Dry).....per 100 \$66.67  
 No. 1333, with Insulators (No. 455 Wet).....per 100 69.83

No. 1341



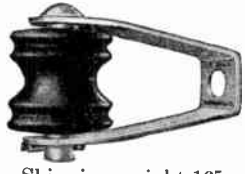
Uses the No. 1606 dry process insulator.

These clevises are similar except for the attachment hole. No. 1341 has oval hole for  $\frac{5}{8}$ -inch bolts; No. 1343 has round hole for  $\frac{1}{2}$ -inch bolts.

Shipping weight, 154 pounds per 100.

No. 1341.....per 100 \$50.23  
 With Insulators.....per 100 \$50.23  
 Mounting Hole.....inches  $\frac{1}{16} \times \frac{3}{4}$  Oval

No. 1339



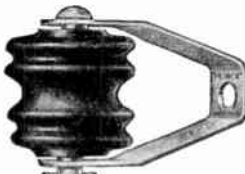
Popular for rural construction. Has sufficient conductor clearance for low or medium voltage lines.

Uses No. 1608 wet process insulator. Oval mounting hole,  $\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight 165 pounds per 100.

No. 1339, with Insulators.....per 100 \$56.82

No. 1340



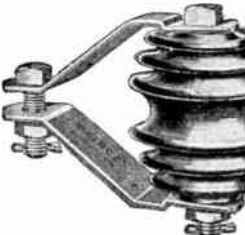
This clevis has a higher flash-over rating than the No. 1339. Used where high mechanical strength is desirable as well as electrical efficiency.

Furnished in  $\frac{3}{16} \times \frac{1}{2}$ -inch steel with  $\frac{5}{8}$ -inch diameter cotter bolt. Uses No. 1609 wet process insulator. Oval mounting hole,  $\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight, 288 pounds per 100.

No. 1340, with Insulators.....per 100 \$73.53

No. 1330



Used extensively on medium voltage lines for corner or dead-end attachments. Especially for 4000-volt primaries.

The  $\frac{5}{8}$ -inch attachment bolt is designed for fastening on eye or hook bolts. Pole mounting bolts not included. With lead sleeve on insulator bolt at extra cost.

Uses No. 1613 wet process insulator. Machine mounting bolt,  $\frac{5}{8} \times 2\frac{3}{8}$  inches.

Shipping weight, 572 pounds per 100

No. 1330, with Insulators.....per 100 \$187.54

No. 1344



Designed for through bolt or crossarm bolt mounting. Similar to No. 1330 clevis shown above.

Mounting bolts are not included. With lead sleeve on insulator at extra cost.

Uses No. 1613 wet process insulator.

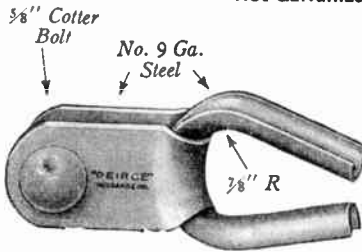
Oval mounting hole,  $\frac{1}{16} \times \frac{3}{4}$  inches.

Shipping weight, 550 lbs. per 100.

No. 1344, with Insulators.....per 100 \$167.64

## Hubbard Standard Thimble Clevises

Hot Galvanized



No. 673

Used for dead-ending lines to suspension insulators.

Formed by combining a special wire rope thimble with a pressed steel attachment clevis.

Thimble has a 2-inch diameter for the conductor loop and a groove for  $\frac{3}{4}$ -inch strand or smaller.

Freedom of the thimble allows enough swing for a desirable flexibility.

No.	Per 100	Steel Gage	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb. per 100
			Cotter Bolt Diam.	Strand or Wire Size	
673	\$67.60	9	$\frac{5}{8}$	$\frac{3}{4}$ or Under	95

## Hubbard Hi-Tension Thimble Clevises

Hot Galvanized



Designed for dead-ending lines of high voltage. A  $3\frac{1}{2}$ -inch diameter makes it especially desirable for aluminum and copper conductors.

Pressed in a single piece with a wire groove suitable for  $\frac{3}{4}$ -inch or smaller conductors.

There is ample clearance for armor rods or tape.

No.	Per 100	Steel Gage	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb. per 100
			Cotter Bolt Diam.	Strand or Wire Size	
675	\$89.73	12	$\frac{5}{8}$	$\frac{3}{4}$ or Under	95

## No. 674 Hubbard Open Side Thimble Clevises



Designed to eliminate the difficulties of line threading. Intended for angle work from 30° to 60°; can be used for lesser angles if desired.

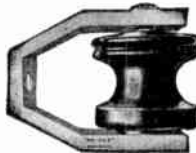
Tie-wires can be used safely without danger of crystallization.

Side wire groove,  $\frac{3}{4}$  inch; diameter of thimble,  $3\frac{3}{4}$  inches. Length overall,  $6\frac{5}{8}$  inches.

No. 674, Shipping Weight 145 Pounds.....per 100 \$94.72

## Hubbard Insulated Clevises

Hot Galvanized



No. 561

Formed of  $1\frac{1}{2} \times \frac{3}{16}$ -inch channel steel. A sturdy dead-end or corner attachment.

Used with No. 355 dry process insulator for low voltage lines.

Oval mounting hole,  $\frac{1}{16} \times 2\frac{3}{32}$  inches. Shipping weight, 242 pounds per 100.

No. 561, with Insulators.....per 100 \$84.25

No. 8820



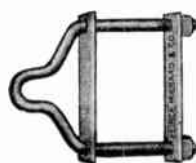
Formed of flat steel. Has  $\frac{1}{16}$ -inch round mounting hole for  $\frac{5}{8}$ -inch mounting bolts.

Uses No. 357 dry process insulator. Shipping weight, 131 pounds per 100.

No. 8820, with Insulators.....per 100 \$46.13

## Peirce Crossarm Clevises

Hot Galvanized



For dead-ending line wires on single arms.

No.	Per 100	Cross-Arm In.	Diam. Steel In.	Steel Plates In.	Ship. Wt. Lb. per 100
549	\$86.88	$3\frac{1}{4} \times 4\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2} \times 1\frac{1}{32}$	193
550	88.51	$3\frac{1}{2} \times 4\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2} \times 1\frac{1}{32}$	198
551	89.64	$3\frac{3}{4} \times 4\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2} \times 1\frac{1}{32}$	203
552	90.80	4 x 5	$\frac{1}{2}$	$\frac{1}{2} \times 1\frac{1}{32}$	209

**Hubbard Insulated Fork Bolts**

Type No. 1

Hot Galvanized

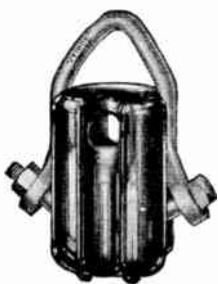


Equipped with insulator No. 357.

No. ....	8811	8814	8815
Per 100 .....	\$108.97	120.07	125.21
Length of Bolt.....in.	9 <sup>13</sup> / <sub>16</sub>	11 <sup>13</sup> / <sub>16</sub>	13 <sup>13</sup> / <sub>16</sub>
Diameter.....in.	1/2	5/8	5/8
Ship. Wt. per 100.....lb.	205	226	247

**Peirce Porcelain Strain Insulators**

Standard Type—Dry Process



No. 506

Ordinarily used for dead-ending secondary circuits or guying.

Made with dimensions in accordance with recommended specifications of the Edison Electric Institute. Sharp corners and edges have been eliminated.

The radius of bolt or wire hole gives maximum bearing surface on clevis bolt. It may be used with guy strand or insulated wire.

When ordering insulators and clevises not listed as being applicable to each other, or when fitting different makes of insulators on

clevises, make certain that proper clearances are allowed. Clevises are not included with insulators.

No. ....	502	504	506
Per 100 .....	\$58.70	72.83	119.27
Length Overall.....inches	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>
Diameter Overall.....inches	2 <sup>5</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
Diameter Over Groove.....inches	1 <sup>7</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>
Shipping Weight per 100.....pounds	128	158	209

Clevises Used With Insulators

Insulator No. ....	502	504	506
Heavy Double Type Clevis, No....	782	785 <sup>1</sup> / <sub>2</sub>	789
Heavy Type Clevis, No.....	825	827 <sup>1</sup> / <sub>2</sub>	831 <sup>1</sup> / <sub>2</sub>
Barmack Forged Type Clevis, No..	865	871	869
Light Double Type Clevis, No....	882	885 <sup>1</sup> / <sub>2</sub>	889
Flexible Bale Type Clevis, No....	1552	1554	1556

Multi-Fin Type—Wet Process



No. 516

For dead-ending primary circuits or guying high tension lines. With rugged fins and well-rounded edges.

When Hubbard Clevises and Peirce Multi-Fin Strain Insulators are used together, clevis leg rides at bottom of groove where unequal strain is best absorbed.

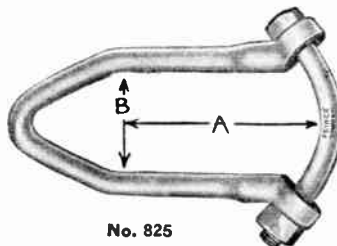
No. ....	512	514	516
Per 100 .....	\$78.81	161.33	218.99
Length Overall.....inches	3 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>
Diameter Overall.....inches	2 <sup>15</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>11</sup> / <sub>16</sub>
Diameter Over Groove.....inches	1 <sup>7</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>
Shipping Weight per 100.....pounds	158	268	418

Clevises Used With Insulators

Insulator No. ....	512	514	516
Heavy Double Type Clevis, No....	789	785 <sup>1</sup> / <sub>2</sub>	782
Heavy Type Clevis, No.....	832	828	825
Barmack Forged Type Clevis, No..	869	871	865
Light Double Type Clevis, No....	889	885 <sup>1</sup> / <sub>2</sub>	882
Flexible Bale Type Clevis, No....	1556	1554	1552

**Hubbard Strain Insulator Clevises**

Hot Galvanized



No. 825

Drop-forged from 1/2-inch diameter open hearth steel. Ultimate strength, 13,000 pounds. Has 1/2-inch bolt and lock washer.

A 1 1/2-inch inside diameter eye is required to accommodate this clevis.

No.	Per 100	DIMENSIONS INCHES		INSULATOR No.		Ship. Wt. Lb. per 100
		A	B	Dry Process	Wet Process	
825	\$80.72	3	2	502	512	113
827 <sup>1</sup> / <sub>2</sub>	86.34	3 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	504	...	122
828	83.71	4	2 <sup>1</sup> / <sub>4</sub>	514	514	121
831 <sup>1</sup> / <sub>2</sub>	86.67	4 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	506	506	135
832	86.91	5	2 <sup>1</sup> / <sub>2</sub>	516	516	138

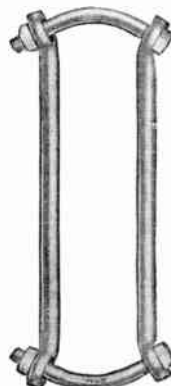
Standard Double Type

Hot Galvanized

Light Type

Made from 1/16-inch round steel with 3/8-inch curved bolts.

With this type of clevis two strain insulators can be assembled in series.



No. 885

No.	Per 100	Inside		Used With Insulator No.	Ship. Wt. Lb. per 100
		Length In.	Width In.		
882	\$108.51	8	2	502 or 512	139
882 <sup>1</sup> / <sub>2</sub>	112.68	8	2 <sup>1</sup> / <sub>4</sub>	504	140
885	126.99	10	2	502 or 512	157
885 <sup>1</sup> / <sub>2</sub>	155.84	10	2 <sup>1</sup> / <sub>4</sub>	504 or 514	158
886	155.84	10	2 <sup>1</sup> / <sub>2</sub>	506	160
888	159.12	12	2	502 or 512	180
888 <sup>1</sup> / <sub>2</sub>	164.55	12	2 <sup>1</sup> / <sub>4</sub>	504 or 514	183
889	164.55	12	2 <sup>1</sup> / <sub>2</sub>	506 or 516	185

Heavy Type

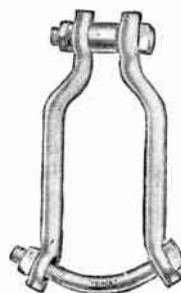
Made from 1/2-inch round steel with 1/2-inch curved bolts.

No.	Per 100	Inside		Used With Insulator No.	Ship. Wt. Lb. per 100
		Length In.	Width In.		
782	\$143.69	8	2	502 or 512	151
782 <sup>1</sup> / <sub>2</sub>	143.69	8	2 <sup>1</sup> / <sub>4</sub>	504	152
785	156.85	10	2	502 or 512	180
785 <sup>1</sup> / <sub>2</sub>	156.85	10	2 <sup>1</sup> / <sub>4</sub>	504 or 514	182
786	156.85	10	2 <sup>1</sup> / <sub>2</sub>	506	183
788	164.79	12	2	502 or 512	202
788 <sup>1</sup> / <sub>2</sub>	164.79	12	2 <sup>1</sup> / <sub>4</sub>	504 or 514	204
789	164.79	12	2 <sup>1</sup> / <sub>2</sub>	506 or 516	205

**Hubbard Strain Insulator Clevises**

Barmack Drop-Forged Type (Patented)

Hot Galvanized



Designed to provide a strong and adjustable means for dead-ending wires. Will fit many sizes and types of strain insulators. Well adapted to dead-ending on steel work where the size of the attaching hole is too small to permit the use of the ordinary steel clevis. Also used to assemble two strain insulators in series.

To assemble the split clevis place the two members into opposite grooves of insulator and estimate the spacing between parallel flat flanges of clevis. Insert curved bolt and screw nut on until above spacing is obtained. Then

securely fasten assembly to eyelet or steel structure with the 1/2-inch bolt.

Pressed Steel Type

PATENTED

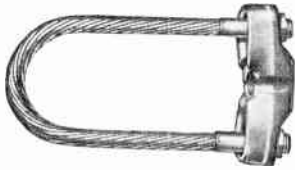
No.	Per 100	DIMENSIONS, INCHES		Approx. Ship. Wt. Lb. per 100
		Inside Length	Inside Width	
900	\$113.96	2 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	68
902	114.21	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	83

Drop Forged Type

PATENTED

No.	Per 100	Inside Length	Inside Width	Approx. Ship. Wt. Lb. per 100
861	\$92.09	3	1 <sup>1</sup> / <sub>2</sub>	103
865	117.42	4	2	114
869	124.66	5	2 <sup>1</sup> / <sub>2</sub>	126
871	117.42	4	2 <sup>1</sup> / <sub>4</sub>	115

## Hubbard Flexible Bail Clevises Hot Galvanized



The stranded bail, when placed under tension, forms to fit any size or curvature of insulator. Yokes can be mounted on eye bolts or machine bolts (square head recommended). A groove around side of yoke is provided to keep eye centered.

Diameter bail,  $\frac{7}{16}$  inch; with  $\frac{1}{2}$ -inch machine threaded studs on ends. Bail nuts are trapped in yoke.

No.	Galv. Strand Bails Per 100	With Copperweld Strand Bails Per 100	Inside Lgth. In.	INSIDE WIDTH INCHES		Used with Insulator No.	Ship. Wt. Lb. per 100
				Min.	Max.		
1552	\$160.95	1562 \$196.43	$3\frac{7}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	502 or 512	160
1554	160.95	1564 196.43	$4\frac{13}{16}$	$1\frac{3}{4}$	$2\frac{1}{2}$	504 or 514	165
1556	160.95	1566 196.43	$5\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{2}$	506 or 516	170

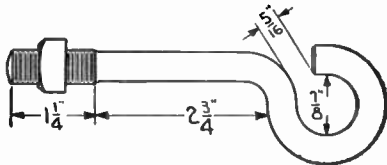
## No. 655 Peirce Forged Steel Thimble Clevises Hot Galvanized



For dead-ending lines to suspension insulators. With  $\frac{5}{8}$ -inch cotter bolt; will develop an ultimate strength of 20,000 pounds. A  $\frac{1}{2}$ -inch cotter bolt may be substituted for the  $\frac{5}{8}$ -inch size if fittings require.

Diameter wire groove,  $1\frac{1}{4}$  inches.  
Shipping weight 122 pounds.  
No. 655.....per 100 \$57.62

## No. 9245 Hubbard Guard Arm Hooks Hot Galvanized



Used on guard arms as dead-ends for telephone services. Fastened by bolting through the arm.

Diameter steel,  $\frac{1}{2}$  inch. Overall length,  $5\frac{7}{8}$  inches.  
Diameter eye,  $\frac{7}{8}$  inch.  
A. T. & T. Co. Std.  
Shipping weight 45 pounds.  
No. 9245.....per 100 \$22.97

## Hubbard Standard Transposition Brackets Hot Galvanized



Nos. 9252 and 9255 furnished in heavy stock for use with pins having transposition insulators.

Except for No. 9255 all have  $\frac{3}{8}$ -inch hole for a wood screw and holes for  $\frac{3}{8}$ -inch carriage bolt. No. 9255 has  $\frac{7}{16}$ -inch wood screw hole and  $\frac{9}{16}$ -inch carriage bolt hole.

No.	Per 100	Steel Size Inches	Crossarm Size Inches	Ship. Wt. Lb. per 100
9249	\$76.65	$1\frac{1}{4} \times \frac{5}{16}$	$2\frac{3}{4} \times 3\frac{3}{4}$	277
*9250	76.91	$1\frac{1}{4} \times \frac{9}{16}$	3 x 4	286
†9251	76.91	$1\frac{1}{4} \times \frac{9}{16}$	$3\frac{1}{4} \times 4\frac{1}{4}$	284
†9252	134.28	$1\frac{1}{2} \times \frac{9}{8}$	$3\frac{1}{4} \times 4\frac{1}{4}$	416
9255	171.71	$1\frac{1}{2} \times \frac{7}{8}$	$3\frac{1}{2} \times 4\frac{1}{2}$	475

\*Western Union Std. †A. T. & T. Co. Std.

## No. 9270 Hubbard Transposition Brace Plates Hot Galvanized



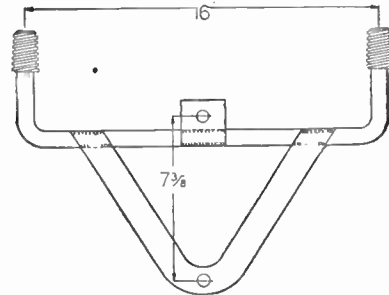
This brace plate is designed to prevent the transposition bracket from being pulled out of vertical, on slight angles in the line, because of the constant strain in one direction.

Holds the bracket in perfect alignment under excessive side pull.

Used with Nos. 9262 and 9275 on R.S.A. roofed cross arms.

No. 9270, Ship. Wt. 58 Pounds.....per 100 \$48.93

## No. 3144 Hubbard Pole Top Brackets Hot Galvanized



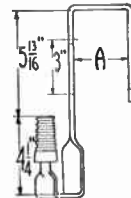
No. 3144

Made of  $\frac{3}{4}$ -inch round steel braced with  $\frac{1}{4} \times 1\frac{1}{4}$ -inch flat steel.

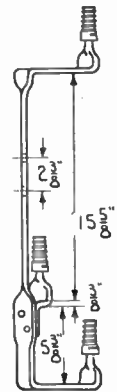
Lead thread is standard 1-inch Allen type.  
All joints are solidly welded.

No. ....	3144
Spread.....inches	16
Bolt Spacing.....inches	$7\frac{3}{8}$
Shipping Weight per 100.....pounds	450
Price upon application.	

## Hubbard 1-Piece Transposition Brackets For Phantom Circuits Hot Galvanized



No. 9260



No. 9262

The end of this bracket is turned up and fitted with a standard wood cob. No. 9262 is mounted with  $\frac{1}{2}$ -inch machine bolts.

No. ....	9260	9261	9262
Per 100.....	\$155.13	155.72	526.18
No. of Points.....	1	1	3
Steel Size.....inches	$1\frac{1}{4} \times \frac{5}{16}$	$1\frac{1}{4} \times \frac{5}{16}$	$1\frac{1}{2} \times \frac{3}{8}$
Cross Arm Size.....inches	3x4	$3\frac{1}{4} \times 4\frac{1}{4}$	All Sizes
Ship. Wt. per 100.....pounds	341	346	918



**No. 9275 Hubbard Transposition Brackets**

**For Phantom Circuits**

**Hot Galvanized**

Furnished in two pieces.

Pin holes are for 1/2-inch short shank pins.

Assembly on arm is accomplished with 1/2-inch machine bolts.

Size steel, 1 1/2 x 3/8 inches. Any size crossarm can be used.

Pins and bolts are not included.

Western Union Std.

No. 9275, Ship. Wt. 797 Lb.  
..... per 100 \$276.72



**No. 9265 Hubbard Transposition Brackets**

**Hot Galvanized**

No. 9265 is bolted to the pole by 1/2-inch machine bolts.

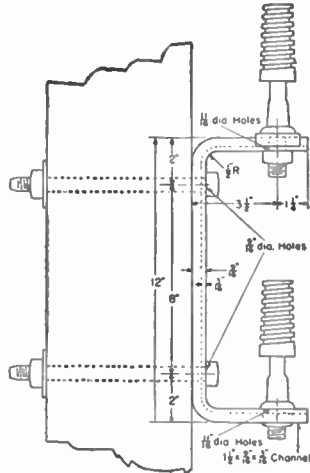
Uses two No. 8015 pins and glass insulators.

A special bridging washer is used in attaching the top pin.

Pin hole size, 1/16 inches. Pole mounting hole size, 3/16 inches.

Channel size, 1 1/2 x 3/16 x 3/16 inches.

Approx. shipping weight, per 100, 250 pounds.



No. 9265..... per 100 \$72.79

**Peirce Single Point Type Transposition Brackets**

**Hot Galvanized**

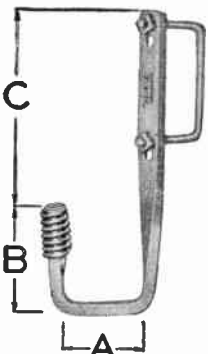
Made of channel steel and fitted for one insulator.

Threads are standard 1-inch diameter.

No. 20110 is used for normal spans and No. 20111 is used for long spans.

Unless otherwise specified, cross-arm U-bolt No. 1021, for 3/4 x 4 1/2-inch arms, will be furnished.

Furnished punched and slotted.



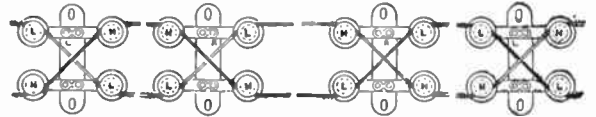
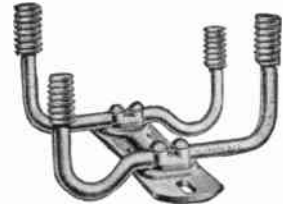
No. 20111

No.	Per 100
20110	\$88.00
20111	113.24

Channel	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb. per 100
	A	B	C	
3/4 x 3/8 x 1/8	3 1/2	4 3/8	6 1/2	101
1 x 1/2 x 1/8	3 1/2	4 1/2	8	171

**Hubbard Point Type Transposition Brackets**

**Hot Galvanized**



L—On Insulator = Low Point  
M—On Insulator = High Point  
L—On Bracket Base = Left Hand  
R—On Bracket Base = Right Hand

Hubbard point type right and left hand transposition brackets are attached on standard crossarms through adjacent pin holes with 1/2 x 6-inch crossarm bolts fitted with a clipped washer. Both attachment holes are slotted to provide a total of two inches of adjustment.

Mounting hole spacing, 10 to 12 inches.

Line spacing, 6 3/4 inches.

Base steel size, 1/4 x 3 x 1 3/16 inches.

Point steel size, 3/4-inch round.

**System of Transposition**

PATENTED

In establishing a transposition of the right and left hand point type, a pair of brackets is employed as shown by the illustration in which one wire is black to distinguish it from the other.

Assuming that a complete transposition is the crossing of one wire over the other and then eventually back to its original position in relation to the other wire, two complete transpositions are shown by the illustration. Note that the first one is black over white and the second is black under white, maintaining perfect balance. No cutting is necessary, and no tangles result when arms or poles are wrecked as is the case with the spiral type of transposing on the average bracket.

Mounting slots fit standard drilled arms with a 2-inch adjustment range.

Mounting bolts are furnished.

Lead thread or wood cobs are available.

Hubbard point type brackets listed were designed specifically for use with this system. The purchaser of Hubbard brackets is assured a license permitting the transposing of wires as covered by the above patent.

If further details are desired, communicate with the nearest Hubbard factory office.

No.	Description	Approx. Ship. Wt. Lb. per 100
9272LT	Right Hand Bracket, Lead Thread.....	*900
9273LT	Left Hand Bracket, Lead Thread.....	*900
9272	Right Hand Bracket, Wood Cob.....	*800
9273	Left Hand Bracket, Wood Cob.....	*800

Prices upon application.

**Accessories**

No.	Each	Description	Approx. Ship. Wt. Lb. Per 100
9706	\$11.18	1/2 x 6-Inch Bolt (Two Furnished)...	45.1
7881	1.82	1/2-Inch Clipped Washer (Two Furnished).....	3.3

\*Including bolts.

## Peirce Crossarm Spreader Brackets

Hot Galvanized



No. 20217 furnished with a hole so that No. 20217A, consisting of a single point and attachment bolt, may be added, forming a three point bracket similar to No. 20317.

Threads are standard 1-inch lead type.

No.	Per 100	No. Wires	Wire Spacing Inches	Steel Size Inches	Ship. Wt. Lb. per 100
20217	\$259.06	2	13	No. 9 Ga.	390
20217A	59.42	1	....	No. 9 Ga.	128
20317	302.07	3	6½	No. 9 Ga.	500

No. 20317

## No. 9280 Break Iron Brackets

Hot Galvanized



Used for dead-ending and breaking communication system wires for take-off.

Furnished complete with pins and bolt.

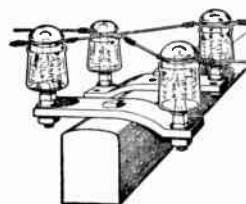
Pin spacing, 6½ inches; size wood cob, 1 inch; pin extension, 4¼ inches.

Western Union Standard. A.R.A. Standard.

No. 9280. Ship. Wt. per 100, 448 Lb. .... per 100 \$182.29

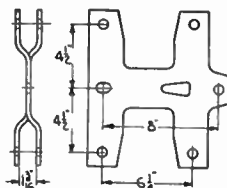
## Hubbard Transposition Break Iron Brackets

Hot Galvanized

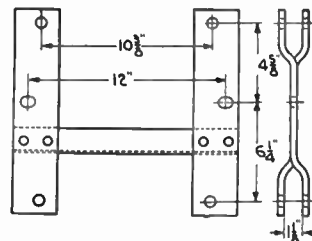


No. 9285

No. 9285 covers a plate, two No. 8061 pins and a machine bolt. Two sets are needed for transposition. Pins and 5/8-inch bolt are included.



No. 9286

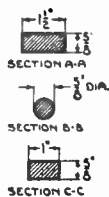
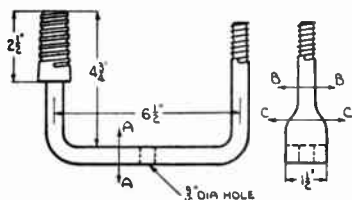


No. 9287

Nos. 9286 and 9287 accomplish the same result except that the entire assembly is made up in one piece. Neither pins nor mounting bolts are included.

## No. 9281 Hubbard Break-Iron Brackets

Hot Galvanized



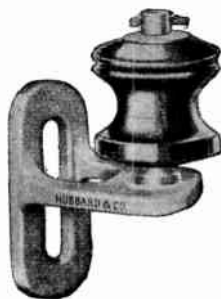
No.	Per 100	Pin Spacing Inches	Steel Size Inches	Mtg. Hole Size In.	Approx. Ship. Wt. Lb. per 100
9281	\$220.39	6½	5/8x1½	9/16	340

No. ....	9285	*9286	*9287
Per 100.....	\$236.97	345.88	576.68
Type.....	Single	Double	Riveted
Size Steel.....inches	1/2	5/16	3/8
Size Mounting Holes....inches	1/16	1/16x1	1/16x1/8
Diameter of Pin Holes...inches	1/16	1/16	1/16
Ship. Wt. per 100.....pounds	470	660	1100

\*A. T. & T. Co. Standard.

## No. 4435 Hubbard Secondary Brackets

Hot Galvanized



Made of malleable iron.

No.	*Per 100	Insulator No. (Not Included)	Mtg. Bolt Size In.	Approx. Ship. Wt. Lb. per 100
4435	\$142.52	355 or 455	5/8	112

\*Without insulator.

## Peirce Wireholders

Multi-Point Type

Hot Galvanized



No. 3299

The insulators can be installed after back has been mounted to building. Insulators can be easily removed or installed to make wireholders of various wire spacing.

Back pressed from 12-gage steel; has 1/16-inch holes in center of 5/16x1½-inch slot.

No.	No. Wires	Wire Spacing In.	Ext. to Ctr. of Wire Hole, In.	Insulator No.	Ship. Wt. Lb. per 100
3296	2	6	2½	1654	297
3299	2	9	2½	1654	325
3394	3	4½	2½	1654	410
3396	3	6	2½	1654	435
24296	2	6	2½	4-11-64	245
24299	2	9	2½	4-11-64	260
24394	3	4½	2½	4-11-64	330
1654	Insulator with 3/8" Bolt & Cork Washer				90
4-11-64	Insulator with 3/8" Bolt				70

Prices upon application.

**Hubbard Telephone Distributing Brackets**

Hot Galvanized

**No. 9200 L House Type**



Used at the house end of a telephone service for dead ending twisted pair telephone wires. Size steel, 3/16x1 3/4 inches. Length legs, 3 7/16x2 inches.

A. T. & T. Co. Std. No. 9200, Ship. Wt. 56 Pounds..per 100 \$16.36

**L Pole Type**

For taking off telephone services, or for short runs on poles.

Size steel, 1/4x2 inches. Length legs, 4x2 inches. Approximate shipping weight, 100 pieces, 97 pounds.

No. ....	*9202	*9203
Per 100 .....	\$24.87	23.68
No. of Holes.....	3	2
Size Holes.....inches	1 5/32	9/16
*Western Union Std.	†A. T. & T. Co. Std.	

**Hubbard Telephone Corner Brackets**

Hot Galvanized



Used where leads from the pole come to the building at an angle and to carry leads around the corner of a building.

No. ....	*9204	*9205	†9206	†9207
Per 100 .....	\$30.76	34.00	31.99	38.19
Mounting Hole Size.in.	1 1/32	1 1/32	9/32	9/32
Insulated Holes....in.	1 1/32	1 1/32	1 1/32	1 1/32
Size Steel.....in.	7/32x1 7/32	7/32x1 7/32	3/16x 1/2	1 1/4x1 1/2
Length Overall.....in.	4 3/8x2 1/2	8 1/2x1 5/16	3 1/4x3 1/8	3 1/4x4 7/8
Ship. Wt. per 100...lb.	66	96	71	121
*Western Union Std.	†A. T. & T. Co. Std.			

**Porcelain Knobs for Telephone Brackets**

Dry Process



White glaze, porcelain knob insulator for use with telephone corner brackets.

No. ....	9225	9226
Per 100 .....	\$14.79	25.39
No. of Grooves.....	2	4
Diam. Bolt Hole.....inches	3/8	7/16
O.D.....inches	1 1/8	1 3/4
Height.....inches	1 7/16	2 1/4
Ship. Wt. per 100.....pounds	22	40



**Hubbard Bolts for Telephone Brackets**

Hot Galvanized

Used for attaching porcelain knob insulators to telephone pole or house brackets.

No. ....	Stove Bolt		Machine Bolt	
	9232	9233	9603	9605 1/2
Per 100 .....	\$3.77	4.76	5.12	6.50
Diam.....inches	5/16	5/16	3/8	3/8
Length.....inches	2	3	3	5 1/2
Ship. Wt. per 100....lb.	6.6	8.6	13.8	22.9

**Peirce Cross Arm U-Bolts**

**Horizontal Construction**

Hot Galvanized

Used in position illustrated. Formed of 3/8-inch round steel. Has 1 1/2 inches of thread.

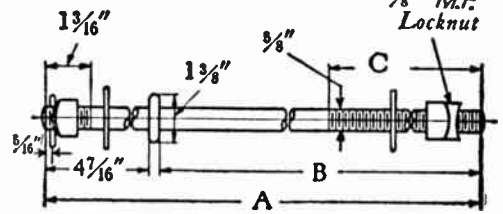


No. ....	1018	1021	1022	1023	1024
Per 100 .....	\$40.25	40.13	40.15	40.19	40.23
Size Crossarm....in.	2 3/4x3 3/4	3 1/4x4 1/4	3 1/2x4 1/2	3 3/4x4 3/4	4x5
Diam. of Steel...in.	3/8	3/8	3/8	3/8	3/8
Spread.....in.	3 3/4	4 1/4	4 1/2	4 3/4	5
Length of Bolt...in.	3 3/4	4 1/4	4 1/2	4 3/4	5
Ship. Wt. per 100.lb.	40	53	59	66	73

**Hubbard Insulator Bolts**

Hot Galvanized

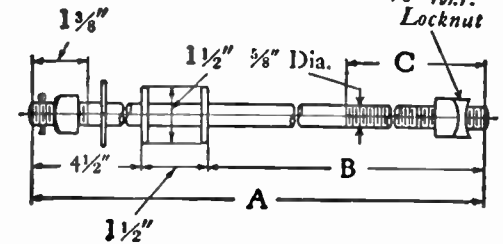
**Single Up-Set Type**



Single up-set bolts are fitted at the insulator end with a nut and 1 5/16 inches of thread. An M.F. nut (lock nut) is also furnished and the bolt is drilled for a cotter pin 5/16-inch in from the end.

No.	Per 100	DIMENSIONS, INCHES			Thread Diam.	For Use with Insulator No. (Not Included)	Approx. Ship. Wt. Lb. per 100
		A	B	C			
8739 1/2	\$48.03	10 3/4	6	4	5/8	355 or 455	160
8740	49.80	11 3/4	7	5	5/8	355 or 455	170
8741	51.58	12 3/4	8	6	5/8	355 or 455	180
8741 1/2	53.43	13 3/4	9	6	5/8	355 or 455	189
8742	55.20	14 3/4	10	6	5/8	355 or 455	197
8743	58.74	16 3/4	12	6	5/8	355 or 455	215
8744	62.28	18 3/4	14	6	5/8	355 or 455	234
8745	65.82	20 3/4	16	6	5/8	355 or 455	252

**Double Up-Set Type**

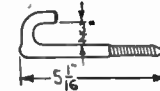


Insulator bolt has an M.F. nut (lock nut) on the pole end.

No.	Per 100	DIMENSIONS, INCHES			Thread Diam.	For Use with Insulator No. (Not Included)	Approx. Ship. Wt. Lb. per 100
		A	B	C			
8822	\$56.41	12	6	3 1/2	5/8	355 or 455	172
8824	57.40	13	7	3 1/2	5/8	355 or 455	179
8826	58.40	14	8	4 1/2	5/8	355 or 455	188
8828	59.39	15	9	5 1/2	5/8	355 or 455	196
8830	60.46	16	10	5 1/2	5/8	355 or 455	204

**No. 1316 Hubbard Drive Hooks**

Hot Galvanized



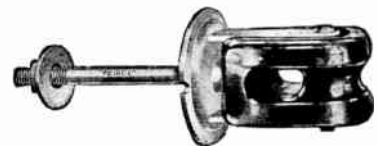
Used for wire clamp attachments on poles, arms or buildings. Has fetter drive threads and a drive head. Steel diameter, 7/16 inch. Overall length, 5 1/16 inches. Length of thread, 2 inches.

No. 1316, Ship. Wt. per 100, 29 Pounds.....per 100 \$15.30

**Peirce Dead-End Brackets**

For Railway Signal Circuits

Hot Galvanized



A 3/8x4 1/2-inch carriage bolt with 1 3/4 inches of thread is riveted to base of bracket. This makes bracket suitable for mounting on crossarms 3 1/4x4 1/4 to 4x5 inches.

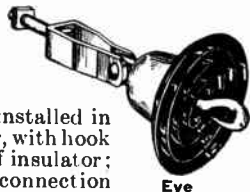
No. ....	195
With Insulators.....per 100	\$80.64
Insulator Hole.....in.	9/16x3/4
Extension to Center of Insulator Hole.....in.	1 5/8
With Insulator No.....	1602
Shipping Weight per 100.....lb.	122



## Klauber Universal Dead-End Clevises

Hot Galvanized

For metal cap insulators using eye type connection; hook type connection, installed in same manner, with hook on cap end of insulator; clevis type connection with legs attaching on outside of legs of clevis.

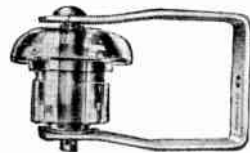


Used on  $\frac{1}{2}$ " or  $\frac{5}{8}$ " bolts. Between legs inside,  $\frac{9}{16}$ "; total width across legs,  $\frac{13}{16}$ ". Diameter: mounting hole,  $\frac{1}{16}$ "; cotter bolt,  $\frac{5}{8}$ ". Steel size,  $\frac{3}{16}$ "x $\frac{1}{2}$ ".

No. ....	555	557
Per 100 .....	\$57.22	94.47
Extension to Center Cotter Bolt.....inches	3 $\frac{1}{2}$	4 $\frac{1}{2}$
Shipping Weight per 100.....pounds	129	153

## Hubbard Dead-Ending Shackles

Hot Galvanized



Used by signal and railroad companies for dead-ending or breaking bare signal wires. Made to clamp around crossarm.

Square holes for  $\frac{1}{2}$ -inch carriage bolt, running vertically through arm;  $\frac{3}{8}$ -inch lag screw at side of arm.

Size crossarm,  $3\frac{1}{4}$ x $1\frac{1}{4}$  inches. Size steel,  $\frac{3}{16}$ x $1\frac{1}{16}$  inches.

No.	Description	Overall Length Inches	Ship. Wt. per 100 Lb.	Per 100
*9290	Shackle Only, less Insulator.....	265	148	\$161.91
9296	Shackle with No. 1609 Wet Process Brown Porcelain Insulator....	401	192	195.34

### Insulators

1612	Wet Process Brown Porcelain, Skirt Style.....	3 $\frac{3}{16}$	148	\$63.87
*9291	Glass, Double Skirt Style.....	3 $\frac{1}{4}$	192	120.19

\*Western Union Standard.

## Hubbard Hub-Rak Secondary Racks

Hot Galvanized



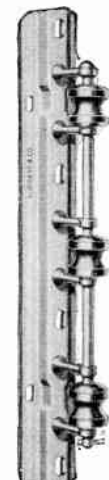
Designed with a heavy pressed steel back and forged points.

**Line Type** racks are made with both extended and non-extended backs. Numbers for non-extended back racks are obtained by suffixing the letter A to the standard number. For example, a 3-wire Hub-Rak with 8-inch spacing and extended back would be 30648; non-extended back would be 30648-A.

**Service Type** is made with extended backs only.

No. 30648

Line Type			Service Type			No.	Line Wires	Wire Spacing In.	Over-all Lgth. In.
No.	With Insulator per 100	Without Insulator per 100	No.	With Insulator per 100	Without Insulator per 100				
20644	\$174.74	\$121.59	20044	\$174.86	\$144.11	2	4	14	
20646	235.54	182.40	20046	174.86	144.11	2	6	16	
20648	235.54	182.40	20048	182.17	151.43	2	8	18	
20652	257.75	204.61	20052	227.77	197.02	2	12	22	
30644	262.11	182.40	30044	243.14	197.03	3	4	18	
30646	330.89	251.18	30046	243.14	197.03	3	6	22	
30648	330.89	251.18	30048	260.13	214.02	3	8	25 $\frac{1}{4}$	
30652	372.78	293.07	30052	323.67	277.56	3	12	34	
40644	349.48	243.19	40044	315.31	253.82	4	4	22	
40646	434.06	327.77	40046	315.31	253.83	6	6	28	
40648	434.06	327.77	40048	339.05	277.56	8	8	34	



No. 30048

## Peirce Secondary Racks

Standard Type

Hot Galvanized

Rack points are of No. 9 gage steel with rounded tops so that wire insulation will not be harmed while stringing. Play between points and insulator is sufficient to eliminate jammed wires. Mounting may be accomplished at any point through the back with through bolts, using the No. 3350 mounting washers furnished. With or without insulators. Side mounting slots are for  $\frac{3}{8}$ -inch lag screws.



No. 1358

### With Extended Back

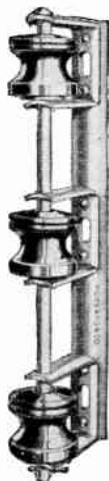
No.	Per 100	No. of Line Wires	Line Wire Spacing In.	Over-all Lgth. Back In.	With Insulators Ship. Per 100
1250	\$244.42	2	4	13 $\frac{9}{16}$	731
1258	288.55	2	8	17 $\frac{1}{16}$	826
1350	315.21	3	4	17 $\frac{9}{16}$	1014
1358	413.16	3	8	25 $\frac{9}{16}$	1344
1450	387.24	4	4	21 $\frac{1}{16}$	1207
1458	548.86	4	8	33 $\frac{9}{16}$	1657
1540	466.30	5	4	25 $\frac{9}{16}$	1700
3158	337.99	3	8	17 $\frac{1}{16}$	1004

### With Non-Extended Back

250	\$244.42	2	4	10 $\frac{1}{16}$	686
258	288.55	2	8	14 $\frac{1}{16}$	786
262	334.09	2	12	18 $\frac{1}{16}$	841
350	315.21	3	4	14 $\frac{1}{16}$	969
358	413.16	3	8	22 $\frac{1}{16}$	1299
362	522.28	3	12	30 $\frac{1}{16}$	1494
450	387.24	4	4	18 $\frac{1}{16}$	1162
458	548.86	4	8	30 $\frac{1}{16}$	1612
540	466.30	5	4	22 $\frac{1}{16}$	1645
566	.....	5	6	32 $\frac{1}{16}$	1750
3058	337.99	3	8	14 $\frac{1}{16}$	959

Prices include insulators.

## Hubbard Rural Type Secondary Racks



No. 2428

Light weight rack using standard spool insulators Nos. 355 or 455 and furnished in standard spacings.

No. 2438-A has an extended back. All others have non-extended backs.

Rack back has a slight curve to fit the pole surface.

No.	*Per 100	Number of Line Wires	Line Wire Spacing, In.	Overall Back Lgth. In.	*Approx Ship' Wt. per 100
2428	\$210.11	2	8	12	696
2438	308.39	3	8	20	1044
2438-A	308.39	3	8	25 $\frac{1}{4}$	1110
2448	407.63	4	8	28	1392

\*Including insulators.

Prices include insulators.

## Peirce Dead-Ending Straps

For Secondary Racks

Hot Galvanized



No.	Per 100	Type	Mounting Pole	Holes, In.	Steel Size In.	Ship. Wt. Lb. per 100
998	\$30.23	Hook	$\frac{9}{16}$	..	$\frac{1}{4}$ x $1\frac{1}{2}$	132
999	27.77	Light	$\frac{9}{16}$	$1\frac{1}{16}$	14 Ga. x $1\frac{1}{4}$	42
1000	31.22	Heavy	$\frac{9}{16}$	$1\frac{1}{16}$	$\frac{1}{4}$ x $1\frac{1}{4}$	118
1010	66.99	Long	$\frac{9}{16}$	$\frac{3}{4}$	$\frac{1}{4}$ x $1\frac{1}{4}$	190

**Hubbard Wireholders**

Hot Galvanized



Will accommodate all normal sized service wires or cables which formerly needed a special sized wire hole.

Screws are smooth, sharp pointed for easy starting and full threaded so they will hold any normal loading even when attached through timbers thinner than the length of the screw.

Size of wire hole, 3/8x1 inch.

No.	Type Bolt or Screw	Size Screw or Bolt, Gage No. or In.	Length Screw or Bolt, In.	Ship. Wt., Lb. per 100
<b>No. 4-11-44</b>				
No.				
4-11-40	Toggle Bolt	3/16	4 1/2	80
4-11-42	Carriage Bolt	3/8	5	80
4-11-44	Wood Screw	No. 22	2 1/4	65
4-11-45	Wood Screw	No. 22	3	67
4-11-46	Wood Screw	No. 22	4	69
4-11-48	Wood Screw	No. 22	6	73
4-11-49	Wood Screw	No. 22	7 1/2	76
4-11-50	Wood Screw	No. 22	2 1/2	66
4-11-64	Stud Bolt	3/8	1 1/2	65
4-11-100	Wood Screw	No. 22	2 1/4	65

Prices upon application.

**Peirce Wireholders**

Standard Type

Hot Galvanized



No. 190



No. 1190

Not affected by temperature changes or by difference in coefficient of expansion of parts.

No. 190 is for making house service connections. Copper cotter pin interlocks insulator with metal portion of wireholder. No. 290 is similar to No. 190 except has wet process porcelain insulator.

No.	Size of Screw, Bolt, or Tap	Extension Base to Ctr. Wire Hole In.	Size of Wire Hole In.	Ship. Wt. Lb. per 100
190	No. 22x2" Wood Screw	1 5/8	1 1/2 x 1 1/16	105
190A	No. 22x2" Wood Screw	2 1/4	1 1/2 x 1 1/16	115
190R	No. 22x2" Wood Screw	4 1/4	1 1/2 x 1 1/16	150
194	5/8" Tap	1 3/32	1 1/2 x 1 1/16	95
195	3/8" x 4 1/2" Carriage Bolt	1 5/8	1 1/2 x 1 1/16	140
290	No. 22x2" Wood Screw	1 5/8	1 1/2 x 1 1/16	105
390	No. 22x3" Wood Screw	1 5/8	1 1/2 x 1 1/16	107
1190	No. 24x2 1/2" Wood Screw	1 15/16	1 1/8 x 1 1/8	228

Prices on application.

**Peirce Wireholders**

All-Porcelain Type



Nos. 1607, 1617, 1707, 1717, No. 1618, Nos. 1621, 1631, Nos. 1625, 1635, 1725, 1735

With Insulators as on No. 1607—Wire Hole 3/4 x 13/16 Inches

No.	Screw or Bolt Cemented In.	Screw or Bolt Led In.	Size of Screw or Bolt Inches	In-ulator Process	Ship. Wt. Lb. per 100
1607	1607L	No. 22x2 1/4 Galv. Screw		Dry	95
1617	1617L	No. 22x2 1/4 Everdur Screw		Dry	95
1619	1619L	No. 24x2 1/4 Galvanized Screw		Dry	95
1627	1627L	1/4 x 4 1/2 Toggle Bolt		Dry	100
1637	1637L	3/8 x 5 Carriage Bolt		Dry	125
1657	1657L	1/4 x 4 1/2 Everdur Toggle Bolt		Dry	105
1707	1707L	No. 22x2 1/4 Galv. Screw		Wet	100
1717	1717L	No. 22x2 1/4 Everdur Screw		Wet	100

With Insulators as on No. 1618—Wire Hole 1/2" Diam.

1618 1618L 14x1 1/2 Cadmium Plated Screw ... 40

With Insulators as on No. 1621—Wire Hole 5/8" Diam.

1621	1621L	No. 20x2 1/4 Galvanized Screw	Dry	65
1623	1623L	No. 22x2 1/4 Galvanized Screw	Dry	70
1631	1631L	No. 20x2 1/4 Everdur Screw	Dry	65
1633	1633L	No. 22x2 1/4 Everdur Screw	Dry	65
1641	1641L	1/4 x 4 1/2 Toggle Bolt	Dry	80
1651	1651L	3/8 x 5 Carriage Bolt	Dry	80

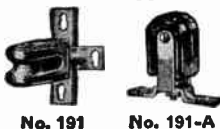
With Insulators as on No. 1625—Wire Hole 29/32" Diam.

1625	1625L	No. 22x2 1/4 Galvanized Screw	Dry	125
1635	1635L	No. 22x2 1/4 Everdur Screw	Dry	125
1645	1645L	1/4 x 4 1/2 Toggle Bolt	Dry	150
1655	1655L	3/8 x 5 Carriage Bolt	Dry	140
1725	1725L	No. 22x2 1/4 Galvanized Screw	Wet	135
1735	1735L	No. 22x2 1/4 Everdur Screw	Wet	135

No. 1670 Led in Screw Only—Wire Hole 1 1/2" Diam.

1670 5/8 x 3, Gimlet Point Lag Screw ... Dry 390

Prices upon application.



No. 191, No. 191-A



No. 296

No. 299A is same as No. 299 except that it has a hole in center of back. When No. 191A is mounted in this hole it changes No. 299 from 2-wire 9-inch spacing to 3-wire 4 1/2-inch spacing. No. 191A is equipped with 5/16 x 3/8-inch stove bolt for attaching to back. Mounting slots are for 1/4 and 3/8-inch screws.

Light Type				Heavy Type			
No.	With Insulators Per 100	Wire Spacing Inches	Shipping Wt. Lb. per 100	No.	With Insulators Per 100	Wire Spacing Inches	Shipping Wt. Lb. per 100
191	\$64.28	1 0	94	394	\$181.60	3 4 1/2	299
191A	58.60	1 0	77	396	185.98	3 6	330
296	127.41	2 6	211	494	252.51	4 4 1/2	430
299	131.87	2 9	229	1602	22.57		
299A	131.87	2 9	229	Insulator Only—Wire Hole 1/2" x 1 1/16" 38			
1191	\$143.35	1 0	222	Heavy Type Insulator Only—Wire Hole 1 1/8" x 1 1/8" 77			
1296	224.13	2 6	340	1396	\$331.52	3 6	568
1299	231.94	2 9	368	1604	36.74		

**Peirce Corner Irons**

Hot Galvanized

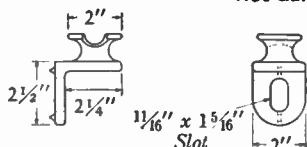
Attached by 5/16-inch screws or expansion bolts. Made of 12-gage, 1-inch steel.

No.	501	503
Per 100	\$30.50	47.29
Extension from Bend.	1/16	3
Mounting Holes	1/32	7/16
Mounting Slots	1 1/2 x 1 1/16	7/16 x 1
Size Bolt	5/16 x 3/4	1/4 x 3/4
Ship. Wt. per 100	44	52

**No. 4470 Hubbard Neutral Wire Brackets**

Hot Galvanized

Wire size, 1/2-inch or under. Mounting bolt hole size, 5/8-inch. Length of pole bearing surface, 2 3/8 inches.

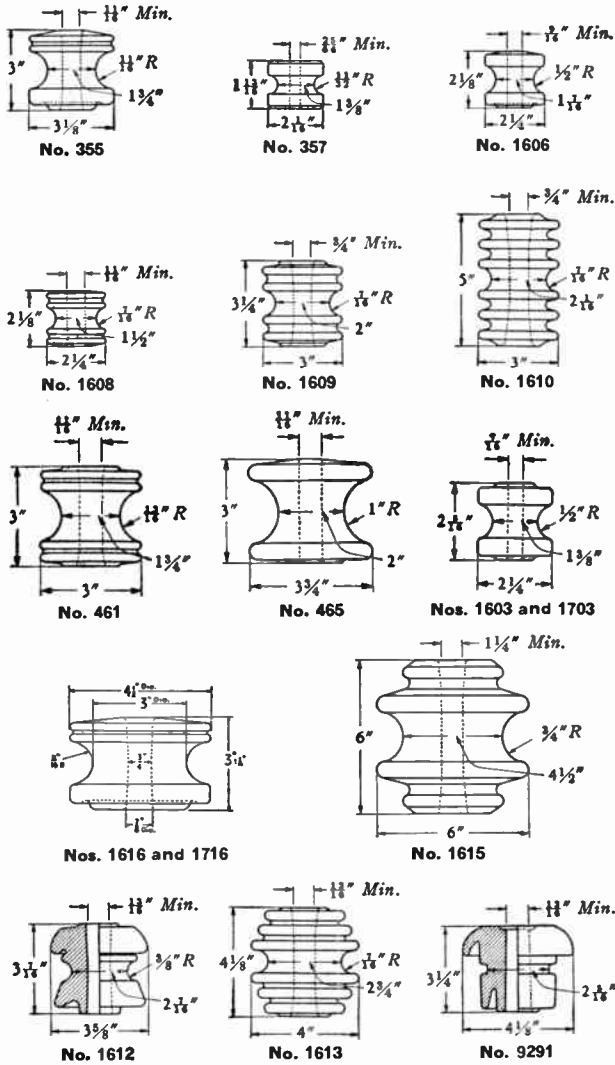


Approx. ship. wt. per 100, 105 pounds.

No. 4470 ..... per 100 \$71.24

## Peirce Spool Insulators

Wet and Dry Process Porcelain and Glass



No.	Per 100	Color of Glaze	Type of Porcelain	Overall Length Inches	Approx. Ship. Wt. Lb. per 100
355	\$26.57	Brown	Dry Process	3	130
355-W	26.57	White	Dry Process	3	130
455	29.73	Brown	Wet Process	3	130
357	12.72	Brown	Dry Process	1 13/16	44
461	.....	Brown	Wet Process	3	118
465	43.99	Brown	Wet Process	3	165
1603	15.37	Brown	Dry Process	2 5/16	48
1703	.....	Brown	Wet Process	2 5/16	48
1606	15.37	Brown	Dry Process	2 1/8	70
1606-W	15.37	White	Dry Process	2 1/8	70
1706	21.33	Brown	Wet Process	2 1/8	70
1608	21.33	Brown	Wet Process	2 1/8	55
1609	33.43	Brown	Wet Process	3 1/4	132
1610	199.42	Brown	Wet Process	5	275
1612	63.87	Brown	Wet Process	3 7/16	149
1613	80.00	Brown	Wet Process	4 1/8	275
1615	300.45	Brown	Wet Process	6	495
1616	.....	Brown	Dry Process	3 1/8	335
1716	61.73	Brown	Wet Process	3 1/8	335

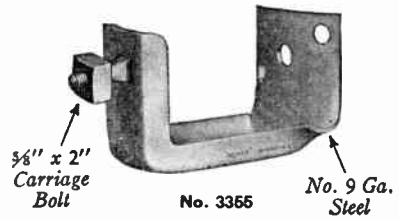
### Glass Double Skirt Style

No.	Per 100	Color of Glass	Overall Length Inches	Approx. Ship. Wt. Lb. per 100
9291	\$120.19	Colorless or Green	3 1/4	193

## Peirce Extension Brackets

For Secondary Racks

Hot Galvanized



Used for mounting secondary racks when a greater extension from the supporting structure is desired than the rack itself offers.

Made in two styles, with flat and curved backs, for wall and pole use respectively. Both styles have one 1 1/16-inch hole and two 9/16-inch holes for mounting.

Made of No. 9 gage steel to provide a 6-inch extension, and a 4-inch bearing on the pole or wall.

Equipped with one 5/8x2-inch carriage bolt.

Also has two 3/8-inch holes in bottom (one at each end) to allow water to drain out.

No.	Per 100	Style	MOUNTING HOLES DIAMETER, INCHES	Approx. Ship. Wt. Lb. per 100
3355	\$85.62	Curved Back, For Poles..	Center 1 1/16 Side 9/16	286
3356	85.62	Flat Back, For Walls.....	Center 1 1/16 Side 9/16	286

## Hubbard Insulator Hook Bolts

Hot Galvanized



No. 642

Used on rural secondary lines.

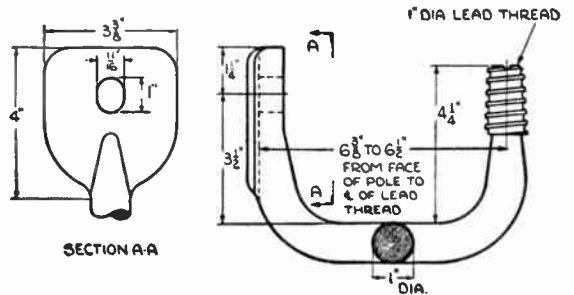
Furnished with a square section as a wrench hold just above the base as well as a shoulder under the base to prevent the hook bolt from turning while tightening.

Also furnished with square washer and M.F. locknut.

No.	Per 100	DIMENSIONS, INCHES					Approx. Ship. Wt. Lb. per 100
		A Lgth. of Shank	B Extension From Pole	C	D	E	
642	\$106.50	8	6 3/8	4 5/8	3/4	2 1/2	320
643	107.75	9	6 3/8	4 5/8	3/4	2 1/2	330
644	109.00	10	6 3/8	4 5/8	3/4	2 1/2	336

## No. 169 Peirce Pole Brackets

Hot Galvanized



SECTION A-A

No.	Per 100	Mounting Hole Size Inches	Extension Inches	Thread Diameter Inches	Approx. Ship. Wt. Lb. per 100
169	\$170.51	1 1/16x1	6 1/2	1	400



**Peirce Insulated Telephone Knob Screws**

Hot Galvanized

No. 2919



Porcelain knob used generally for running telephone wires along the sides of buildings.

Provided with small white glaze insulator No. 2917. Overall length, 3 inches. Size screw, No. 11x1 7/8 inches.

No. 2919, with Insulators, Ship. Wt. 11 Pounds.....per 100 \$23.39

No. 2920

May be used for dead-ending duplex or twisted pair telephone wires. Also as a service attachment for low voltage power lines in localities not visited by snow and sleet.

Provided with large brown glaze insulator No. 2927. Overall length, 4 1/4 inches. Size screw, No. 22x2 1/2 inches. No. 2920, with Insulators, Ship. Wt. 48 Pounds.....per 100 \$33.12

**Peirce Primary Lead Wireholders**

A wet process porcelain wireholder so designed that it has sufficient leakage distance for primary voltages.



No. 1650

Diameter of wire hole, 1 inch.



No. 1660

No.	Size Screw	Kind of Screw	Ext. Base to C'tr. Wire Hole, In.	Ship. Wt. Lb. per 100
1650	No. 22x2" Wood	Everdur	3 1/2	110
1660	1/2"x3" G.P. Lag	Galv. Steel	5 1/2	265

Prices upon application.

**Hubbard Pole Dating Nails**



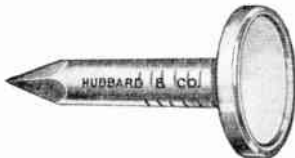
Used for indicating the year or pole heights. Any two numerals may be ordered.

Square head, 5/16-inch. Square shank, 1/4-inch. Length, 2 1/2 inches.

Approximate shipping weight per 100 pieces, 5.5 pounds.

No.	Per 100	Stamped No.	No.	Per 100	Stamped No.	No.	Per 100	Stamped No.
1900	\$3.16	Blank	1940	\$3.16	40	1946	\$3.16	46
1915	3.16	15	1941	3.16	41	1947	3.16	47
1920	3.16	20	1942	3.16	42	1948	3.16	48
1925	3.16	25	1943	3.16	43	1949	3.16	49
1930	3.16	30	1944	3.16	44	1950	3.16	50
1935	3.16	35	1945	3.16	45	1955	3.16	55

**Hubbard Pole Markers**



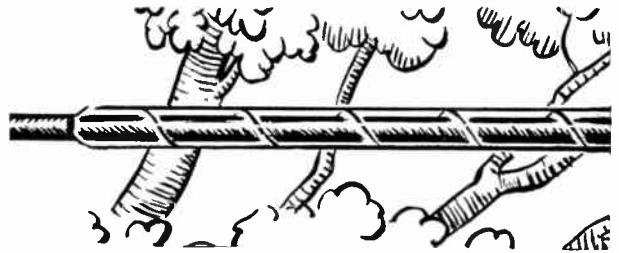
Any marking will be quoted on request. Nos. 6000 and 7006 are specially heat treated to provide driving strength. A heavy rim protects stamping from hammer blows.

Consecutively numbered markers are furnished with depressed numerals, all other characters in relief.

No.	Overall Length.....inches	Diameter Head.....inches	Diameter Shank.....inches	Copper		Aluminum	
				2000	7000	6000	7006
				2	2	2	2
				1	1 1/4	1	1 1/4
				.298	.328	.298	.328
				8.0	9.5	2.5	3.0

Prices upon application.

**Plastic Tree Wire Guard**



For auxiliary protection on power and light conductor or telephone drop wire where it is impracticable to obtain adequate clearance from trees making it necessary to protect conductor or wire from abrasion. Particularly useful where conditions require protection on a considerable length of wire.

Can be thread over an end of the drop wire at the time of installation or can be spiralled on the wire after it is already in place. It is held in position by an S clamp placed at each end of the guard, or series of guards, or can be fastened at each end with friction tape.

Made from a flat strip of clear Tenite II (cellulose acetate butyrate) which is wound into a close helix to form a guard three feet long.

Available in five sizes; 3/8, 5/8, 3/4, 1, and 1 1/4 inches (inside diameter).

Packed 10 in a carton.

**Premax Embossed Aluminum Letters and Figures**



Made of 99% pure aluminum rolled especially for this purpose, will neither rust, tarnish nor corrode. Plain finish. Being perfectly smooth, letters and figures do not catch or hold dirt.

Standard packing, 100 per carton.

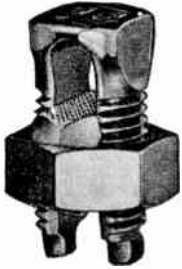
Size Inches	Type	Size Inches	Type
1/2	Roman	2	Roman
3/4	Roman	3	Roman
1	Roman	4	Roman
1 1/2	Roman	6	Roman
1 1/2	Gothic (Figures only)	..	.....

**Escutcheon Pins and Eyelets**

Size Inches	Description	No. per Pound
1	No. 15 Galvanized Steel.....	900
1	No. 15 Brass.....	700
3/4	No. 15 Brass.....	950
5/8	No. 15 Brass.....	1100
5/8	No. 15 Cadmium Plated Steel.....	1200

Smaller or special sizes of pins furnished on request.

## Reliable Solderless Connectors



Reliable Connectors are available for use with all types of conductors. Tap connectors for copper, copperweld, aluminum and steel conductors and for guy strand are designed with precision threads to maintain high pressure solderless connections.

Made of 90% copper high strength bronze. The bronze connectors resist corrosion and are not subject to season cracking.

### Forged Bolt

For Copper and Copperweld Wires

No.	Per 100	MAXIMUM WIRE SIZE		Copper-Weld	Std. Pkg.	Wt. Lb. per 100	Ship. per 100
		A.W.G. Solid	A.W.G. Strand				
*9F	\$13.50	9	10	...	100	2	
*19FW	14.50	9	10	...	100	1 1/2	
6F	18.00	6	8	8A	100	6 1/2	
4F	22.00	4	6	6A	100	9 1/2	
2F	31.00	2	3	4A	100	13	
1F	34.00	1	2	...	100	16	

### Machined Bolt

For Copper and Copperweld Wires

No.	Per 100	MAXIMUM WIRE SIZE		Copper-Weld	Std. Pkg.	Wt. Lb. per 100	Ship. per 100
		A.W.G. Solid	A.W.G. Strand				
*104V	\$13.50	9	10	...	100	3	
*128V	16.50	8	8	...	100	4 1/2	
165V	18.00	6	8	8A	100	7 1/2	
206V	22.00	4	6	6A	100	9	
260V	31.00	2	3	4A	100	12	
292V	34.00	1	2	...	100	13	
373V	45.00	2/0	1/0	...	50	22	
418V	74.00	3/0	2/0	...	25	32	
528V	126.00	4/0	4/0	...	25	62	
679V	254.00	...	350MCM	...	12	70	
813V	338.00	...	500MCM	...	12	115	
996V	632.00	...	750MCM	...	6	170	
1152V	692.73	...	1000MCM	...	6	266	

### Plated

For Galvanized Steel Wire to Copper Wire

No.	Per 100	MAXIMUM WIRE SIZE		Copper	Std. Pkg.	Wt. Lb. per 100	Ship. per 100
		Steel Sol.	Copper Sol.				
*109W	\$16.50	12	9	...	100	2 1/2	
165GC	26.00	8	6	...	100	7 1/2	
206GC	34.00	6	8	...	100	10	
260GC	36.00	4	6	...	100	14	
292GC	43.00	5/16	4	...	100	16 1/2	
373GC	53.00	3/8	2/0	...	50	23	

For Two Galvanized Steel Wires

No.	Per 100	MAXIMUM WIRE SIZE		Slot Size Inches	Std. Pkg.	Wt. Lb. per 100	Ship. per 100
		Steel Sol.	Steel Str.				
*109	\$15.75	12	109	.109	100	2	
165G	24.00	8	165	.165	100	6 1/2	
206G	30.00	6	206	.206	100	9	
260G	33.00	4	260	.260	100	12	
292G	40.00	5/16	312	.312	100	15	
373G	50.00	3/8	378	.378	50	21	

\*For telephone and signal lines. Washer. For use on 3 wires.  
Nos. 165 to 373 supplied with nut retainer when specified on order.  
6 Sol. to 500 MCM furnished with spacers for use on stranded conductors, both forged and machined bolt type, at additional cost.

## Reliable Signal Line Connectors



Cannot be distorted with a standard telephone socket wrench. All edges are rounded to prevent line wire damage. Vibration-proof threads eliminate loose connections.

### Bronze

For Copper to Copper

No.	Per 100	Max. Wire Size Copper B&S	Std. Pkg.	Price	No.	Per 100	Max. Wire Size Steel B.W.G.	Std. Pkg.	Price
*9FW	14.50	9	100	<b>For Iron to Iron</b> *109W \$16.50 12 100					
128V	16.50	8	100						

### Plated Bronze

For Iron to Iron

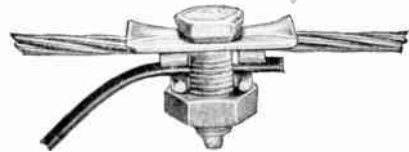
## Reliable Service Entrance Connectors For Copper Wires



Service entrance connectors may also be used on transformer leads, lightning arrester grounds, or wherever two wires, not under tension, are connected end to end.

No.	Per 100	WIRE SIZE A.W.G.		Std. Pkg.	Ship. per 100
		Maximum	Minimum		
68SE	\$10.00	2-No. 6 Str.	2-No. 10 Sol.	100	2
46SE	13.00	2-No. 4 Str.	2-No. 8 Sol.	100	3 1/2
68A	10.00	2-No. 6 Str.	2-No. 10 Sol.	100	2 1/2
46A	13.00	2-No. 4 Str.	2-No. 8 Sol.	100	4

## Reliable Aluminum Connectors For Aluminum, Amerductor, or Steel Wires



Aluminum to Copper or Steel to Copper With Bimetal Separator and One Bell-Mouth Washer

No.	Per 100	MAXIMUM WIRE SIZE				Std. Pkg.	Ship. per 100
		ACSR	Steel B.W.G. Sol. or In.	Steel B.W.G. Str. or Amerductor	Copper A.W.G. Str.		
6ALCW	\$32.22	6	6	8	6	100	6
4ALCW	38.90	4	4 1/4	6	4	100	6 1/2
2ALCW	46.47	2	5/16	4	3	100	7 1/2
10ALCW	93.46	1/0	3/8	2	1	25	18

Aluminum to Aluminum or Steel to Steel

No.	Per 100	MAXIMUM WIRE SIZE				Std. Pkg.	Ship. per 100
		ACSR	Steel B.W.G. Sol. or In.	Steel B.W.G. Str. or Amerductor	Steel B.W.G. Str.		
6AL	\$30.00	6	6	8	6	100	5
4AL	37.00	4	4 1/4	6	4	100	6
2AL	45.00	2	5/16	4	3	100	7
10AL	90.00	1/0	3/8	2	1	25	16

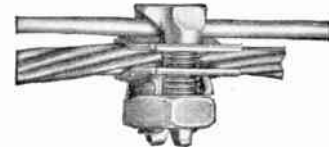
\*Aluminum to Aluminum—With Two Washers

No.	Per 100	MAXIMUM WIRE SIZE				Std. Pkg.	Ship. per 100
		ACSR	Steel B.W.G. Sol. or In.	Steel B.W.G. Str. or Amerductor	Steel B.W.G. Str.		
6ALW	\$33.00	6	6	8	6	100	6
4ALW	41.00	4	4 1/4	6	4	100	6 1/2
2ALW	49.00	2	5/16	4	3	100	9 1/2
10ALW	98.00	1/0	3/8	2	1	25	18

Aluminum to Steel With Aluminum Separator

No.	Per 100	MAXIMUM WIRE SIZE				Std. Pkg.	Ship. per 100
		ACSR	Steel B.W.G. Sol. or In.	Steel B.W.G. Str. or Amerductor	Steel B.W.G. Str.		
6ALS	\$32.22	6	6	8	6	100	5 1/2
4ALS	38.90	4	4 1/4	6	4	100	6 1/2
2ALS	46.47	2	5/16	4	3	100	7 1/2
10ALS	93.46	1/0	3/8	2	1	25	18

## Reliable Universal Connectors For Copper to Steel or Aluminum



No.	Per 100	MAXIMUM WIRE SIZE		Slot Size Inches	Std. Pkg.	Ship. per 100
		A.W.G. Solid Strand	A.W.G.			
6FU	\$18.00	6	8	.168	100	7
4FU	21.50	4	6	.218	100	10
2FU	29.50	2	3	.272	100	13 1/2
1FU	32.00	1	2	.316	100	16 1/2

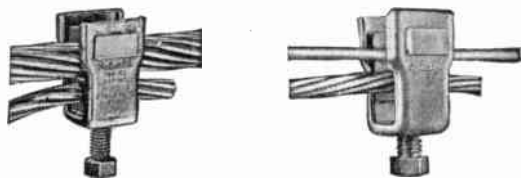
Bimetal Separator Only

No.	Per 100	For Connector	Std. Pkg.	Price	No.	Per 100	For Connector	Std. Pkg.	Price
4775	2.00	4FU	100	1/2					
4776	2.00	2FU	100	1/2					
4777	2.00	1FU	100	1/2					

\*When furnished with one bell-mouth washer only, deduct 5 per cent from prices.

†Suffix W to number if bell-mouth washer is desired, and add 5 per cent to prices.

Reliable Flip-On Tap Clamps



For ACSR Over Armor Rods to Aluminum or Steel Taps

No.	Per 100	WIRE SIZE				Std. Pkg.	Wt. Lb. per 100	Ship. per 100			
		LINE SIDE		TAP SIDE							
		ACSR Max.	ACSR Min.	Size, In. Max.	Size, In. Min.	ACSR Max.	ACSR Min.	Size, In. Max.	Size, In. Min.		
438AL	\$21.30	...	...	7/16	1/4	2	8	3/8	1/8	50	24
555AL	21.30	4	8	1/2	3/8	4	8	1/4	5/64	50	24
744AL	41.40	1/0	4	3/4	7/16	1/0	4	3/8	3/16	25	45

For ACSR Over Armor Rods, or Steel to Copper Taps

438ALC	\$29.30	...	...	7/16	1/4	*2	*10	3/8	1/8	50	24
555ALC	29.90	4	8	1/2	3/8	*4	*12	1/4	5/64	50	24
744ALC	41.40	1/0	4	3/4	7/16	*1/0	*6	3/8	3/16	25	45

For Copper or Copperweld to Steel Guys or Aluminum Taps

438CUG	\$29.30	1/0	6	3/8	1/8	2	4	7/16	1/4	50	24
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\*Copper.

Reliable Hot Line Clamps



Bronze

For Copper or Copperweld Wires

No.	Per 100	WIRE SIZE A.W.G.				Std. per Pkg.	Wt. Lb. per 100
		LINE SIDE		TAP SIDE			
		Maximum	Minimum	Maximum	Minimum		
328C	\$74.75	1 Str.	6 Sol.	1 Str.	6 Sol.	25	44
596C	98.90	4/0 Str.	6 Sol.	1 Str.	6 Sol.	20	58

Plated Bronze

For Galvanized Steel, ACSR, or Copper Wires

328CP	\$79.35	2 ACSR	8 ACSR	2 ACSR	8 ACSR	25	44
		1 Str. Cu.	6 Sol. Cu.	6 Sol. Cu.	6 Sol. Cu.		
596CP	105.80	4 Str. Steel	8 Str. Steel	8 Str. Steel	8 Str. Steel	20	58
		2 ACSR	8 ACSR	2 ACSR	8 ACSR		
		Over Armor	6 Sol. Cu.	1 Str. Cu.	6 Sol. Cu.		
		4/0 Str. Cu.		4 Str. Steel	8 Str. Steel		

Aluminum Heat Treated

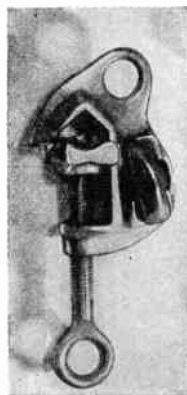
For ACSR Over Armor Rods or Steel Wires—Copper Taps

596AC	\$98.90	2 ACSR Over Armor	8 ACSR	1 Str. Cu.	6 Sol. Cu.	20	9
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For ACSR Over Armor Rods or Steel Wires—ACSR or Steel Taps

596A	\$98.90	2 ACSR Over Armor	8 ACSR	2 ACSR	8 ACSR	20	9
				4 Str. Steel	8 Str. Steel		

Chance Perma-Grip Tap Off Clamps



Carefully, scientifically proportioned to give proper electrical conductivity, maximum mechanical strength, and symmetrical appearance. Current carrying capacity is in proportion to that of the maximum jumper wire for which each clamp is designed.

Tests reveal a minimum yield point of 165 inch-pounds and an ultimate strength in excess of 260 to 500 inch-pounds (depending on size) applied torque on eye screw.

Gripper is designed for three-point contact with the conductor.

U.S.S. threads on the high strength bronze eye screw permit quick, easy application, and a tight positive grip with greatly minimized danger of sticking due to corrosion.

Clamps with S.A.E. threads available on request. If hex screws are wanted, specify on order.

- TYPE CC. Copper to copper connection.
- TYPE CA. Copper to aluminum connection.
- TYPE GP. General purpose connection.
- TYPE AA. Aluminum to aluminum connection.
- TYPE AC. Aluminum to copper connection.

No. S1725

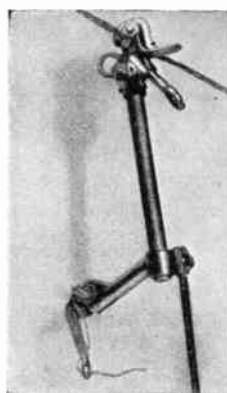
Type	MAIN LINE WIRE SIZES				JUMPER WIRE SIZES				Wt. Lb. per 100
	MAXIMUM		MINIMUM		MAXIMUM		MINIMUM		
	Size	Dec. Eqv.	Size	Dec. Eqv.	Copper	ACSR	Copper	ACSR	
CC									64
CA	2/0 Str.	.414	Sol.	.162	2 Str.	3			65
GP	Copper		Copper		2 Str.	3			64
AA	6 ACSR		No. 8	.158	2 Str.	3			39
AC	with Armor	.434	ACSR		2 Str.	3			40
GP	1/0 ACSR No Armor	.398			2 Str.	3			64

No. S1730

CC			No. 4	.2043	2/0 Str.				95
CA	300M CM	.629	Sol.		1/0	No. 6			96
GP	Str. Copper		Copper		2/0 Str.	No. 6 Sol.	8		95
						No. 6 Sol.	8		
AA	2 ACSR				1/0	No. 6	8		55
AC	with Armor	.595			2/0 Str.	Sol.			56
GP	266.800 CM ACSR No Armor	.642	No. 6 ACSR	.198	2/0 Str.	1/0 No. 6 Sol	8		95

Chance Fused Tap Clamps

50-Ampere Capacity



Used where a fused protective device is required for transformer installations or branch line taps on 2300 to 15,000-volt lines. Provides protection for rural line tap-offs. Easily installed and removed with a clamp stick.

Has high rupturing capacity, ample flashover value, and positive vibrationproof contact. Designed to extract fuse links and thus reduce arcing with its charring effect inside fuse tube.

Tapper is provided with a Tips Snap Clamp. The fuse tube is a lightweight, corrosion-resisting, waterproof, laminated plastic of great mechanical strength. Fiber lining quenches arc.

Type of connection: No. S1630-CC, copper to copper; No. S1630-AC, aluminum to copper.

No.	WIRE SIZES		Weight Pounds
	Main Line	Jumper	
S1630-CC	4/0 Str. Copper	No. 2 Str. Copper	2 1/4
S1630-AC	3/0 ACSR.	No. 2 Str. Copper	2 1/4



## Reliable Flexible Clevis Type Straight-Thru Dead Ends



### For Copper Wires

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Std. Pkg.	Ship. Wt. Lb. per 100
		Solid	7 or 19 Strand	3 Strand		
61FD	\$37.10	6	8	...	50	22
41FD	43.15	4	6	6	50	24
21FD	55.15	2 and 3	3 and 4	4	25	70
27FD	57.80	1	2	3	25	74
101FD	69.50	1/0	1	2	25	107
107FD	70.70	2/0	1/0	1	25	114
207FD	103.95	3/0	2/0	1/0	10	151
307FD	130.75	4/0	3/0	...	10	176
407FD	130.75	...	4/0	...	10	202
250FD	140.95	...	{4/0-12 Str.} 250MCM}	...	10	206

### For Copperweld Wires—Type A

8AFD	\$54.00	...	8A	...	25	72
6AFD	61.20	...	7A or 6A	...	10	25
4AFD	75.60	...	4A	8	25	99

### For Amerductor or Anaconda Composite Conductors

No.	Per 100	MAXIMUM WIRE SIZE			Std. Pkg.	Ship. Wt. Lb. per 100
		Amerductor SCP-SCG	Anaconda	B.W.G. 3 Strand Steel		
8AMFD	\$54.00	8	...	...	25	72
6AMFD	61.20	8X & 6	631	...	25	80
4AMFD	75.60	4	477	4	25	99

For deadending No. 4 3-Strand Steel use No. 4AMFD.

## Reliable Long Clevis Type Straightline Dead Ends



### For Copper Wires

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Std. Pkg.	Ship. Wt. Lb. per 100
		Solid	7 or 19 Strand	3 Strand		
61LD	\$49.20	6	8	...	50	88
41LD	51.30	4	6	6	50	90
21LD	57.40	2 & 3	3 & 4	4	25	190
27LD	78.00	1	2	3	25	194
101LD	87.95	1/0	1	2	25	210
107LD	87.95	2/0	1/0	1	25	214
*207LD	90.70	3/0	2/0	1/0	10	258
*307LD	124.50	4/0	3/0	...	10	270
*407LD	124.50	...	4/0	...	10	298
*250LD	129.30	...	{4/0-12 Str.} 250MCM}	...	10	302

### For Copperweld Wires—Type A

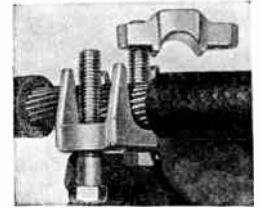
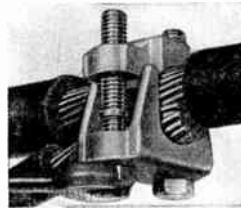
8ALD	\$70.50	...	8A	9	25	212
6ALD	75.90	...	7A or 6A	10	25	214
4ALD	81.85	...	4A	8	25	216

### For Amerductor or Anaconda Composite Conductors

No.	Per 100	WIRE SIZE			Std. Pkg.	Ship. Wt. Lb. per 100
		Amerductor SCP-SCG	Anaconda	B.W.G. 3 Strand Steel		
12MLD	\$70.50	12	...	...	25	205
8MLD	70.50	8	...	...	25	212
6MLD	75.90	6-8X	631	...	25	214
4MLD	81.85	4	477	4	25	216

\*Can be furnished with extra long, 13-inch, clevis; suffix LLD to number and add \$23.00 per 100 to prices.

## Matthews Uniclamp Connectors



For connecting large size copper or aluminum wires from No. 2/0 to 1000 MCM. Non-separable parts permit ease of installation on energized lines with standard hot line tools and socket attachments.

### \*For Copper to Copper Connections

No.	Per 100	Max. Rated Gage of Copper Wires, Strand	Max. Rated Gage of Aluminum Wires, ACSR	Shipping Weight Std. Pkg. per 100
0-UC	\$73.80	1/0	...	25 20
00-UC	102.60	2/0	...	25 27
0000-UC	165.60	4/0	...	12 55
35-UC	324.00	350MCM	...	6 100
50-UC	378.00	500MCM	...	6 120
75-100-UC	756.00	750-1000MCM	...	1 200

### \*Plated—For Aluminum Connections

0-UC-A	\$81.00	...	1	25 20
00-UC-A	115.20	...	2/0	25 27
0000-UC-A	189.00	...	4/0	12 55
35-UC-A	360.00	...	300MCM	6 100
50-UC-A	424.80	...	397.5MCM	6 120
75-100-UC-A	850.00	...	1033.5MCM	1 200

### Plated with Plated Spacer Bar—Plating Removed from One Clamping Recess for Copper to Aluminum Connections

W-0-UC-A	\$91.80	1/0	1	25 24
W-00-UC-A	129.60	2/0	2/0	25 33
W-0000-UC-A	207.00	4/0	4/0	12 64
W-35-UC-A	405.00	350MCM	300MCM	6 111
W-50-UC-A	473.40	500MCM	397.5MCM	6 133
W-100-UC-A	946.00	750-1000MCM	1033.5MCM	1 218

\*If spacer bars are required, add 15 per cent to prices.

## Reliable Straightline Splice Reducers



For copper wire combinations. Make it possible to change wire size without a double dead end.

### For Copper Wires

No.	Per 100	WIRE SIZE, A.W.G.				Ship. Wt., Lb. per 100
		LARGE END		SMALL END		
		Solid	7 or 19 Strand	Solid	7 or 19 Strand	
4161	\$38.20	4	6	6	8	24
2161	45.00	2 & 3	3 & 4	6	8	25
2141	45.00	2 & 3	3 & 4	4	6	36
2761	52.50	1	2	6	8	30
2741	52.50	1	2	4	6	34
2721	52.50	1	2	2 & 3	3 & 4	40
10121	62.35	1/0	1	2 & 3	3 & 4	40
10127	62.35	1/0	1	1	2	41
10721	68.90	2/0	1/0	2 or 3	3 or 4	43
10727	68.90	2/0	1/0	1	2	44
10741	68.90	2/0	1/0	4	6	56
107101	68.90	2/0	1/0	1/0	1	63
20721	78.75	3/0	2/0	2 & 3	3 & 4	64
20727	78.75	3/0	2/0	1	2	65
207101	78.75	3/0	2/0	1/0	1	66
207107	78.75	3/0	2/0	2/0	1/0	72
307207	98.45	4/0	3/0	3/0	2/0	80
407107	116.80	...	4/0	2/0	1/0	85
407207	116.80	...	4/0	3/0	2/0	90
407307	116.80	...	4/0	4/0	3/0	108
250407	129.30	...	250MCM	...	4/0	151

### For Copperweld Wires—Type A

6A8A	\$63.40	7A or 6A	...	8A	60
6A27	63.40	7A or 6A	1	2	50

**Reliable Straightline Splices**

All splices have screw driver slot release.

**For Copper Wire**



The straightline splice will break soft, medium, or hard drawn copper, solid, three-strand, or seven-strand at approximately its full strength.

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Std. Pkg.	Ship. Wt., Lb. per 100
		Solid	7 or 19 Strand	3 Strand		
61	\$30.00	6	8	50	17	
41	38.20	4	6	50	24	
21	45.00	2 and 3	3 and 4	50	33	
27	52.50	1	2	25	36	
101	62.35	1/0	1	25	50	
107	68.90	2/0	1/0	25	52	
207	78.75	3/0	2/0	25	68	
307	98.45	4/0	3/0	25	80	
407	116.80	...	4/0	25	132	
250	129.30	...	{4/0-12 Str.} 250MCM	20	132	

**For Copperweld Wires**

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.		Std. Pkg.	Ship. Wt., Lb. per 100
		All Copperweld	Composite		
41	\$38.20	3 No. 12	8C, 9 1/2 D	50	22
310CW	38.20	3 No. 12	.....	50	23

**For Copperweld Wires—Type A**



No.	Per 100	WIRE SIZE		Std. Pkg.	Ship. Wt., Lb. per 100
		Copperweld Type A	3 Strand Gage No.		
8A	\$55.75	8A	9	25	46
6A	63.40	7A or 6A	10	25	60
4A	73.00	4A	8	25	72

**For Amerduct or Anaconda Composite Conductors Plated**

No.	Per 100	MAXIMUM WIRE SIZE			Std. Pkg.	Ship. Wt., Lb. per 100
		Amerduct SCP-SCG Type A	Anaconda	3 Strand Steel		
12AM	\$50.40	12	...	25	40	
8AM	53.10	8	...	25	56	
6AM	58.75	8X & 6	631	25	70	
4AM	66.25	4	477	25	85	

**No. 81RSC For Rural Steel Conductors**



No.	Per 100	MAX. WIRE SIZE, B.W.G.		Std. Pkg.	Ship. Wt., Lb. per 100
		Solid	3 Strand		
81RSC	\$66.80	8	..	25	30

**Reliable Straightline Insulated Splices**



**With Clips For Copper Wires**  
Two Sizes, 1 and 3-Inch Insulation

Furnished with clips for attaching fuse or tap wires at extra cost.

No.	Per 100	MAXIMUM WIRE SIZE, A.W.G.			Insulated Length Inches	Std. Pkg.	Ship. Wt., Lb. per 100
		Solid	7 Strand	3 Strand			
61XM-1	\$117.85	6	8	..	25	24	
41XM-1	143.25	4	6	..	25	28	
61XM-3	.....	6	8	..	25	26	
41XM-3	.....	4	6	..	25	30	

**With Clips for Attaching Fuse or Tap Wires**

61XMC-1	.....	6	8	..	25	24
41XMC-1	.....	4	6	..	25	28
61XMC-3	.....	6	8	..	25	26
41XMC-3	.....	4	6	..	25	30

**Reliable Splicing Sleeves**



**Double Tube Copper**

No.	Per 100	MAXIMUM WIRE SIZE			Length Inches	Std. Pkg.	Ship. Wt., Lb. per 100
		A.W.G. Solid	A.W.G. 7 Strand	B.W.G. NBS Solid			
S810	\$2.61	17	..	..	4	100	1 1/2
S811	2.64	16	..	..	4	100	1 3/4
S812	2.73	14	..	16	4	100	2
S813	2.85	12	..	14	4 1/2	100	3
S814	3.33	10	..	12	4 3/4	100	3
S815	4.99	9	..	11	5 1/4	100	5
S816	5.82	8	..	10	5 3/4	100	7 1/2
S817	6.42	7	8	9	5 3/4	100	8 1/2
S818	7.13	6	..	8	6 3/4	100	12
S820	11.52	4	5	6	6 3/4	100	13

Suffix H for half length sleeves and deduct 25 per cent per 100 from prices of Nos. S810 to S815; 40 per cent per 100 from prices of Nos. S816 to S820. Suffix T for tinned copper sleeves and add 20 per cent to prices of Nos. S816 to S820; \$.30 per 100 to prices of Nos. S810 to S815.

Combination sizes are available at \$.20 per 100 extra.

**Double Tube Tinned Steel**

No.	Per 100	B.W.G. Solid	Length Inches	Std. Pkg.	Ship. Wt., Lb. per 100
S832	3.60	12	4 3/4	100	3 1/2
S833	4.37	10	5 1/2	100	5 1/2
S834	6.19	9	5 3/4	100	6

Suffix H for half length sleeves and deduct 20 per cent from prices.

**Reliable Splicing Sleeves**



**Single Tube Seamless Copper Grooved Oval Type**

No.	Per 100	MAXIMUM WIRE SIZE			Lgth. In.	Std. Pkg.	Ship. Wt., Lb. per 100			
		A.W.G. Solid Copper	A.W.G. 7 or 19 Strand Copper	COPPERWELD Composite or Type A						
S010	\$3.33	10	..	..	12	4	100	4		
S011	4.99	9	..	..	11	5	100	4 1/2		
S012	5.82	8	..	..	10	5	100	5		
S013	7.13	6	..	..	8	6	100	10		
S026	9.86	5	6	8C, 9 1/2 D	12	..	6 3/4	100	12	
S014	12.95	4	5	8A	..	6	7 1/2	100	16	
S015	15.21	3	4	6A or 7A	10	..	8 1/2	50	20	
*S016	20.08	2	3	5A	8, 9 1/4	9 3/4	..	50	25	
*S017	25.66	1	2	4A	7	11	..	50	40	
*S018	36.12	1/0	1	3A	6	5 1/2	12 1/2	50	55	
*S019	45.62	2/0	1/0	2A	5	3 8/16	14	25	67 1/2	
*S020	63.68	3/0	2/0	..	..	7 1/16	16	20	91	
*S021	97.77	4/0	3/0	..	..	1 1/2	18	10	108	
S022	105.37	..	4/0	..	..	..	19 1/2	10	130	
S023	124.50	..	250MCM	..	..	..	..	21	10	180
S024	149.92	..	300MCM	..	..	..	..	21 3/4	5	220
S025	262.55	..	500MCM	..	..	..	..	24	5	320

\*Suffix T to number and add 20 per cent to prices for tinned copper sleeves for galvanized steel wire and strand.

For 3-strand cables, use next larger size 7 or 19-strand sleeve.

**Single Tube Seamless Tinned Copper Sleeves 3-Strand Steel Wires**

No.	Per 100	MAXIMUM WIRE SIZE			Lgth. In.	Std. Pkg.	Ship. Wt., Lb. per 100
		Amerduct SCG or SCP	B.W.G. 3 Solid Steel	3 Strand Steel			
S030	\$16.50	8 and 12	6	8	8 3/4	50	16
S031	25.90	8X	..	..	11	50	33 1/2
S032	27.00	6	4	6	11 3/4	50	30
S033	46.50	4	..	4	13	50	55

For splicing type conductors: Amerduct SCG or SCP, Amersteel Type 3S, Crapo HTC-130, Ruralduct Type R3-A.

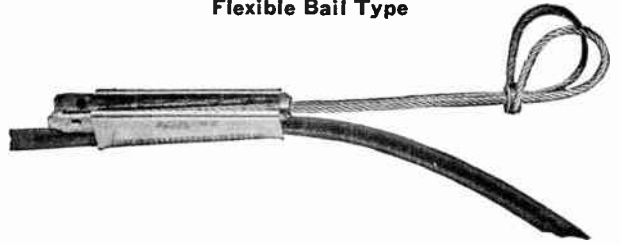
## Reliable Split Tinned Copper Cable Sleeves



No.	Per 1000	WIRE SIZE, Strand	A.W.G. Solid	Length Inches	Std. Pkg.	Ship. Wt., Lb. per 1000
SC10	\$27.32	..	..	1 1/2	500	5
SC11	37.30	12	12	1 1/2	300	5
SC12	39.20	10	10	1 1/2	200	5 1/2
SC13	41.34	9	9	1 1/2	200	6 1/2
SC14	45.50	8	8	1 1/2	200	6 1/2
SC15	49.54	7	7	1 1/2	200	10
SC16	54.41	6	6	1 1/2	150	20
SC17	59.40	5	5	1 1/2	125	20
SC18	63.08	4	4	2	100	30
SC19	66.29	3	3	2	100	25
SC20	71.64	2	2	2	100	40
SC21	80.42	1	1	2	100	40
SC22	132.10	1/0		2	100	50
SC23	140.18	2/0		2	100	65
SC24	163.11	3/0		2	75	85
SC25	187.70	4/0		2 1/2	50	140
SC26	217.40	250MCM		2 1/2	50	150
SC27	236.53	300MCM		2 1/2	20	180
SC28	266.94	350MCM		2 1/2	20	240
SC29	351.17	400MCM		3	10	280
SC30	357.94	450MCM		3	10	320
SC31	364.48	500MCM		3	10	340
SC32	458.92	550MCM		3	10	410
SC33	577.49	600MCM		3 1/2	10	500
SC34	629.16	650MCM		3 1/2	10	520
SC35	653.16	700MCM		3 1/2	10	540
SC36	660.53	750MCM		3 1/2	10	600
SC37	741.55	800MCM		4	Bulk	620
SC38	819.72	850MCM		4	Bulk	690
SC39	886.01	900MCM		4	Bulk	750
SC40	967.51	950MCM		4	Bulk	840
SC41	1025.96	1000MCM		4 1/2	Bulk	1030
SC42	1493.67	1250MCM		4 1/2	Bulk	1200
SC43	1821.20	1500MCM		5	Bulk	1650
SC44	2269.91	1750MCM		5 1/2	Bulk	2100
SC45	3061.83	2000MCM		6	Bulk	2725
SC46	3743.39	2500MCM		6 1/2	Bulk	3300

## Reliable Concentric Cable Clamps

### Flexible Bail Type



The concentric cable clamp is a low cost clamp that holds the cable securely under all conditions without bending or snubbing or otherwise damaging the insulation.

It is made of non-corrosive metals and has a large margin of strength over field requirements. It is easy to install and neat in appearance.

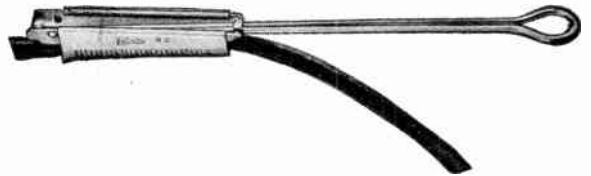
No.	Per 100	Cable No.	Con- ductors	CLAMP RANGE, IN. Max.	Min.	Width Inches	Bail Lgth. In.	Std. Pkg.	Ship. Wt. Lb. per 100
82	\$36.00	8	2	.435	.355	.....	9	25	32
62	38.00	6	2	.530	.405	.....	9	25	36
22	46.00	2	2	.687	.625	.....	10	25	60

### Round Conductor

### Oval Conductor

83	\$43.00	8	3	.450	.350	.770	9	25	42
63	47.00	6 or 8	3	.580	.450	.900	10	25	50
63A	47.00	6 or*8	3	.620	.500	.900	10	25	50
43	65.00	4	3	.720	.560	1.100	10 1/2	10	76

### Solid Bail Type



No.	Per 100	Cable No.	Con- ductors	CLAMP RANGE, IN. Max.	Min.	Width Inches	Bail Lgth. In.	Std. Pkg.	Ship. Wt. Lb. per 100
82S	\$26.00	8	2	.435	.355	.....	6 1/2	25	34
62S	29.00	6	2	.530	.405	.....	6 1/2	25	38
22S	38.00	2	2	.687	.625	.....	7 1/2	25	62

### Round Conductor

### Oval Conductor

83S	\$35.00	8	3	.450	.350	.770	6 1/2	25	44
63S	35.00	6 or 8	3	.580	.450	.900	6 1/2	25	52
63AS	35.00	6 or*8	3	.620	.500	.900	6 1/2	25	52
43S	50.00	4	3	.720	.560	1.100	6 1/2	10	78

\*Armored.

## Reliable Telephone Drop Wire Clamps



An ideal device for attaching No. 17 B.&S. twisted pair or parallel drop wire to poles and buildings.

The clamp makes a very neat appearing installation. It is easy and quick to install. Two of them can be used to make an angular turn. Slack in drop wires can be taken up quickly without leaving any weak spots.

**The P Clamp** is wedge-shaped, with a copper wire loop at one end for hooking over a common drive hook, masonry hook or porcelain knob. When using twisted pair wire, it is essential to parallel the wires through the clamp.

**The R Clamp** for resistance braid (heavy duty drop wire) is the same design as the P clamp but is slightly larger.

No.	Per 100	Cable	CLAMP RANGE, IN. Max.	Min.	Width In.	Bail Lgth. In.	Std. Pkg.	Ship. Wt. Lb. per 100
P	\$7.00	Twisted Pair or Parallel	.160	.140	.250	4	25	14
R	7.50	Twisted Pair or Parallel	.270	.250	.343	4	25	14

### Steel Drive Hooks

Hot dipped galvanized, 1/16-inch diameter, 5 1/4 inches long. Shipping weight per 100, 26 pounds.

Per 100..... \$8.20

## National Messenger Hangers

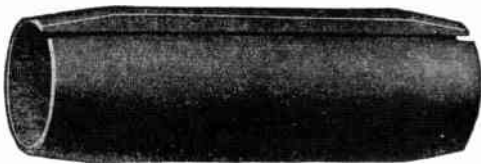


Non-breakable.

Strand Size.....	inches	5/16 or Smaller	3/8 or Larger
Stock No.....		404	405
Approx. Ship. Wt. per 100.....	pounds	150	150



**National Split Tinned Copper Connectors**  
For Splicing Underground Power Transmission Cables  
N.E.L.A. Specifications



Sleeve split entire length to enable hot solder to flow evenly around cable. Covered with a coating of tin to permit easy soldering. Beveled ends.

Size Conductor	Inside Diameter Inches	Length Inches	Approx. Shipping Wt., Lb. per 1000
12 B. & S. Solid	.086	1½	5
11 B. & S. Solid	.096	1½	5
10 B. & S. Solid	.107	1½	5
10 B. & S. Strand	.116	1½	5
9 B. & S. Solid	.119	1½	5½
8 B. & S. Solid	.133	1½	6
8 B. & S. Strand	.151	1½	6½
7 B. & S. Solid	.149	1½	6½
7 B. & S. Strand	.169	1½	7½
6 B. & S. Solid	.167	1½	8
6 B. & S. Strand	.189	1½	12
5 B. & S. Solid	.187	1½	12
5 B. & S. Strand	.211	1½	15
4 B. & S. Solid	.209	1½	15
4 B. & S. Strand	.237	2	20
3 B. & S. Solid	.234	2	20
3 B. & S. Strand	.265	2	25
2 B. & S. Solid	.263	2	25
2 B. & S. Strand	.297	2	35
1 B. & S. Solid	.294	2	35
1 B. & S. Strand	.337	2	40
0 B. & S. Strand	.378	2	50
00 B. & S. Strand	.423	2	65
000 B. & S. Strand	.475	2	85
0000 B. & S. Strand	.533	2½	125
250,000 C.M.	.581	2½	150
300,000 C.M.	.635	2½	180
350,000 C.M.	.690	2½	210
400,000 C.M.	.740	3	280
450,000 C.M.	.784	3	320
500,000 C.M.	.826	3	340
550,000 C.M.	.868	3	410
600,000 C.M.	.906	3½	500
650,000 C.M.	.948	3½	520
700,000 C.M.	.983	3½	540
750,000 C.M.	1.018	3½	580
800,000 C.M.	1.052	4	620
850,000 C.M.	1.083	4	690
900,000 C.M.	1.115	4	750
950,000 C.M.	1.145	4	840
1,000,000 C.M.	1.175	4½	1030
1,250,000 C.M.	1.320	4½	1200
1,500,000 C.M.	1.440	5	1650
1,750,000 C.M.	1.560	5½	2100
2,000,000 C.M.	1.664	6	2725
2,500,000 C.M.	1.855	6½	3300

**National Nicopress Splicing Sleeves**

The Nicopress sleeves, for the splicing of copper, copper-weld, steel, and A.C.S.R. conductors, are easily installed, and the resultant splice, which is of permanently high conductivity, exceeds the rated strength of the conductor.

**Stock Number—Nicopress Sleeves**

Every Nicopress sleeve has a stock number. This is of value to the customer as well as the manufacturer, in that the stock number, which consists of three parts, alludes to the material of which the sleeve is made, the diameter of the wire on which the sleeve is used, and the proper tool groove for compressing the sleeve.

The first section of the stock number identifies the metal of which the sleeve is made by means of any one of the numerals from 1 to 5. Numeral 1 designates copper sleeves, 2 designates galvanized copper sleeves, 3 designates bronze sleeves, 4 designates galvanized bronze sleeves, and 5 designates galvanized steel sleeves.

The middle section or next three numerals of the sleeve stock number denotes the decimal equivalent of the diameter of the wire for which the sleeve is suitable.

The third part, or letter, at the end of the sleeve stock number indicates the Nicopress tool groove required to properly compress the sleeve. The several Nicopress tool grooves or dies are identified and marked by a letter and any Nicopress sleeve whose stock number ends with that letter can be compressed in that particular tool groove.

**For Example: (Sleeve No. 1-162J)**

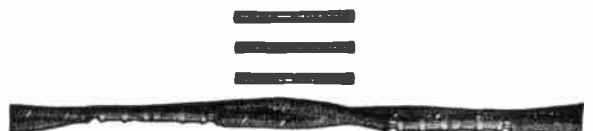
- 1 Indicates Copper
- .162 Indicates Diameter of 6B & S Copper
- J Indicates Proper Tool Groove

**Stock Number—Nicopress Dead-Ends**

The stock numbers of Nicopress dead-ends are practically the same as for the splicing sleeves except that they have a prefix of either 7 or 9. The figure 7 indicates that it is a suspension dead-end, and the figure 9 indicates that it is an offset type dead-end; thus 71-162J and 91-162J, respectively, are the stock numbers of the suspension and offset dead-ends.

**Nicopress Splicing Sleeves**

For Telephone Drop, Bridle, and Inside Wire



Completed Splice

**National Tinned Copper Cable Sleeves**



**Type S**  
For Straight Splices

**Type D**  
For Butt Splices

B&S Gage	Type S			Type D		
	Diam. Wire In.	Length In.	Approx. Ship. Wt. Lb. per 100	Diam. Wire In.	Length In.	Approx. Ship. Wt. Lb. per 100
16	.051	1½	.3	.051	1½	.5
15	.057	1½	.3	....	...	...
14	.064	1½	.4	.064	1½	.6
13	.072	1½	.4	.072	1½	.6
12	.080	1½	.4	....	...	...
10	.102	1½	.5	.102	1½	.75
9	.114	1½	.5	....	...	...

Wire Size	Type	For Tool No.	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 200
19, 20, 22 B&S	Copper	17-2	3-036A	½
17, 18 A.W.G.	Copperweld	17-2	3-045B	¾
17 B&S	Bronze	17-2	3-045B	¾
17, 18 B&S	Copper	17-2	3-045B	¾
16 B&S	Copper	17-2	3-051B	¾
16 A.W.G.	Copperweld	17-2	3-051B	¾
14 B&S	Copper	47-2	3-064B	¾
18, 19 B.W.G.	Ironite	17-2	4-049B	¾

## Nicopress Splicing Sleeves For Solid Copper Wire



Sleeve



Completed Splice

Wire Size B&S	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100	Wire Size B&S	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12	C	1-080C	1 1/2	8	J	1-128J	4 1/2
12	D	1-080D	1 1/2	6	J	1-162J	4 1/2
10	C	1-102C	1 1/4	4	M	1-204M	6 3/4
10	D	1-102D	1 1/4	4	P	1-204P	6 3/4
10	E	1-102E	2	3	P	1-229P	7 3/4
9	D	1-114D	1 1/2	2	T	1-258T	11 3/4
9	E	1-114E	2	2	X	1-258X	14
8	E	1-128E	1 1/2	1	X	1-289X	13

## For Stranded Copper Wire

Wire Size B&S	Strands	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
8 B&S	7	J	1-128/7J	4 1/2
6 B&S	7	J	1-162/7J	4 1/2
4 B&S	7	M	1-204/7M	6 1/2
4 B&S	7	P	1-204/7P	7
2 B&S	7	T	1-258/7T	12 1/2
2 B&S	7	X	1-258/7X	13
1 B&S	7	E8	1-289/7E8	...
1 B&S	3	E8	1-289/3E8	...
...	3 No. 10 Copper	P	1-3/102P	7
...	3 No. 8 Copper	X	1-3/128X	26
...	3 No. 6 Copper	E8	1-3/162E8	...
1/0	7, 12 or 19	F6	1-325/7F6	34
2/0	7, 12 or 19	G3	1-365/7G3	45
3/0	7, 12 or 19	*G5	1-410/7G5	57
4/0	7, 12 or 19	*H5	1-460/7H5	62

\*No. 635 hydraulic tool necessary for these dies.

## For Copper Weld



Sleeve



Completed Splice

Wire Size A.W.G.	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
14 Solid	C	1-064C	1 1/2
12 Solid	C	1-080C	1 1/2
12 Solid	D	1-080D	1 1/2
12 Solid	E	1-080E	2 1/2
10 Solid	J	1-102J	5
9 Solid	J	1-114J	3 3/4
8 Solid	M	1-128M	8 3/4
8 Solid	P	1-128P	13 1/2
6 Solid	P	1-162P	12 1/2
4 Solid	X	1-204X	21 1/2
3 No. 12	M	1-3/081M	8 1/2
3 No. 12	P	1-3/081P	13
3 No. 10	P	3-3/102P	13
3 No. 8	E8	3-3/128E8	...
3 No. 7	F6	3-7/102F6	42
8A	M	1-8A-M	12
8A	P	1-8A-P	15 1/2
7A	P	1-7A-P	15 1/2
6A	P	1-6A-P	15 3/4
4A	X	1-4A-X	26
2A	F6	3-2A-F6	...
8C	M	1-3/081M	8 1/2
8C	P	1-3/081P	13
9 1/2 D	M	1-3/081M	8 1/2
9 1/2 D	P	1-3/081P	13
8 D	P	3-8D-P	...
6 D	X	3-6D-X	...
2 F	F6	3-7/102F6	42

For High and Extra High Strength Copperweld Strand	Strand . . . . . inches	5/16	11/32	3/8
Sleeve Stock No. . . . .		3-7/102F6	3-7/114G3	3-7/128H52
Hydraulic Tool Die. . . . .		F6	G3	H52

## Nicopress Splicing Sleeves For Steel Conductors

Wire Size B.W.G.	For Galvanized Wire	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
14	BB or 85	C	2-083C	1 1/2
14	BB or 85	C	5-083C	1 1/2
12	BB	C	4-109C	1 1/4
12	BB	C	5-109C	1 1/2
12	BB	D	2-109D	1 3/4
12	85	D	5-109D85	2
12	135	D	5-109D135	2 1/2
10	BB	J	2-134J	3
10	85	J	2-134J85	4 1/2
9	BB or 85	J	2-148J	4 1/2
8	BB	J	2-165J	4 1/2
8	130	L	5-165L	11 1/2
6	130	S	5-203S	16 1/2
4	130	W	5-238W	43
8	3 Str. 130	L	5-165/3L	11 1/2
6	3 Str. 130	S	5-203/3S	18 1/2
4	3 Str. 130	W	5-238/3W	35

## For Galvanized Steel Strand

Strand Inches	Type	No. 635 Hydraulic Tool Die	Sleeve Stock No.
5/16	Siemens Martin	*W	5-7/104W
5/16	High and Extra High Strength	F92	5-7/104F92
3/8	Siemens Martin	F62	5-7/120F62
3/8	High and Extra High Strength	G92	5-7/120G92
7/16	Siemens Martin	G92	5-7/145G92

\*Groove also available in Type No. 3 tool.

## For Aluminum Cable, Steel Reinforced (A.C.S.R.)



Steel Sleeve



Aluminum Sleeve

A.C.S.R. Size	Stranding	Stock Legend for Tool	Word for Splicing Unit	Approx. Ship. Wt., Lb. per 100
6	6/1	51-Apple	Apple	24
5	6/1	51-Apple	Grape	24
4	6/1	51-Orange	Orange	28
4	7/1	51-Orange	Tangerine	28
2	6/1	51-Peach	Peach	36
2	7/1	51-Peach	Pear	36
1/0	6/1	51-Plum	Plum	50

## For Amerductor

Wire Size SC/P or SCG	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12	P	2-12 SC-P	28
8	P	2-8 SC-P	25
8X	No. 51-JD5	25-8X-JD5	11
6	E5	2-6 SC-E5	58

## Nicopress Repair Sleeves

### For Replacing Defective Line Wire Joints



When cutting out defective joints in line wire, the ideal way to re-splice is with the Nicopress repair sleeve. The length and the design of this sleeve allows the wire to be re-spliced without having to change the initial line wire sag and eliminates the cutting in of a new section of wire.

## For Copper Wire

Wire Size	Tool Groove	Sleeve Length Inches	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12B&S	C	7	R1-080C	6
12B&S	D	7	R1-080D	7 1/2
10B&S	C	7 1/2	R1-102C	5 1/4
10B&S	D	7 1/2	R1-102D	7 1/4
9B&S	D	8	R1-114D	7
9B&S	E	8	R1-114E	9
8B&S	E	8	R1-128E	8 1/2
6B&S	J	10	R1-162J	16 1/2

## For BB Iron Wire

Wire Size	Tool Groove	Sleeve Length Inches	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
14B.W.G.	C	7	R2-083C	6
12B.W.G.	C	7 1/2	R4-109C	5 1/2
12B.W.G.	D	7 1/2	R2-109D	7
10B.W.G.	J	8 1/2	R2-134J	16 1/2
9B.W.G.	J	9	R2-148J	16
8B.W.G.	J	10	R2-165J	16 1/2

**Nicopress Split Repair and Reinforcing Sleeves**



By applying the Nicopress split repair sleeves or reinforcing sleeves to the damaged strands of A.C.S.R. or copperweld, conductivity and strength are re-established without the bother of cutting and re-splicing the conductor at the damaged point.

**For Aluminum Cable Steel Reinforced—A.C.S.R.**

A.C.S.R. Size	Repair Sleeve Length Inches	Tool Required	Approx. Ship. Wt., Lb. per 100
5 and 6	12	51-Apple	11
4	8	51-Orange	19
4	12	51-Orange	29
2	8	51-Peach	22
2	12	51-Peach	32
1/0	8	51-Plum	25
1/0	12	51-Plum	35

**For Copperweld**

Conductor Size	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
8A	P	REL-8A-P	...
6A	P	REL-6A-P	...
8C	P	REL-3/081P	...
9 1/2 D			
3 No. 12			

**Nicopress Reducing Sleeves**



**For Copper Wire**

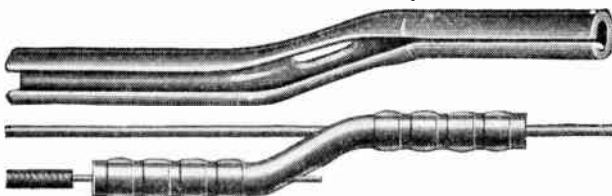
Wire Size B&S	Tool Groove	Sleeve Stock No.	Approx. Ship. Wt., Lb. per 100
12 to 17	C	1-080x045C	1 1/2
10 to 17	C	1-102x045C	1 1/2
10 to 14	C	1-102x064C	1 1/2
10 to 12	C	1-102x080C	1 1/2
8 to 10	E	1-128x102E	2
6 to 8	J	1-162x128J	3 1/4

**For Steel Wire**

12 B.W.G. to 17 B&S	C	2-109x045C	2
12 B.W.G. to 14 B.W.G.	C	4-109x083C	1 1/2
10 B.W.G. to 12 B.W.G.	J	2-134x109J	3

Also available in other sizes. Information upon request.

**National Nico-Taps**



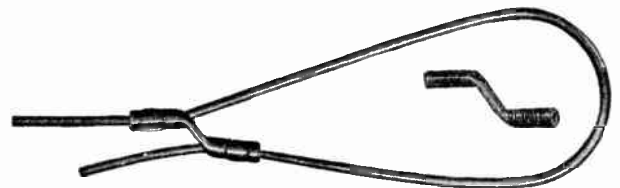
**Completed Tap**

For tap-off connections of line to drop, line to line, and pair to drop. Easily and quickly installed.

Features installation over conductor without cutting or disturbing the line wire in any way.

Wire Size	Tool Groove	Stock No.	Wt., Lb. per 100
17 B&S to 17 B&S	No. 17-2	T2-045B	1 1/2
12 B.W.G. to 12 B.W.G.	D	T2-109D	2 1/2
12 B.W.G. to 17 B&S	D	T2-109x045D	2 1/2
12 B.W.G. to 16 B&S	D	T2-109x051D	2 1/2
12 B.W.G. to 14 B&S	D	T2-109x064D	2 1/2
10 B&S to 10 B&S	D	T1-102D	2 1/2
10 B&S to 17 B&S	D	T1-102x045D	2 1/2
10 B&S to 16 B&S	D	T1-102x051D	2 1/2
10 B&S to 14 B&S	D	T1-102x064D	2 1/2
9 B&S to 9 B&S	D	T1-114D	2 1/2
9 B&S to 17 B&S	D	T1-114x045D	2 1/2
9 B&S to 16 B&S	D	T1-114x051D	2 1/2
9 B&S to 14 B&S	D	T1-114x064D	2 1/2

**Nicopress Offset Dead-Ends**



Offset Dead-End Sleeve and Completed Dead-End

Installed with the same tool groove that is used on the splicing sleeves. For pin or strain insulator dead-ending.

**For Solid Copper**

Wire Size B&S	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
12	C	91-080C	1 1/2
12	D	91-080D	1 3/4
10	C	91-102C	1 1/2
10	D	91-102D	1 1/2
10	E	91-102E	1 3/4
9	D	91-114D	1 1/2
9	E	91-114E	1 3/4
8	E	91-128E	1 1/2
8	J	91-128J	5 1/2
6	J	91-162J	4 1/2
4	M	91-204M	8
4	P	91-204P	8
3	P	91-229P	11 1/2
2	T	91-258T	17
2	X	91-258X	...

**For Stranded Copper Wire**

Wire Size B&S	Strands	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
8	7	J	91-128/7J	5 1/2
6	7	J	91-162/7J	4 1/4
4	7	M	91-204/7M	6 1/2
4	7	P	91-204/7P	7

Available in other sizes and types of stranded copper.

**For Solid and Stranded Copperweld**

Size A.W.G.	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
12 Solid	D	91-080D	1 3/4
10 Solid	J	91-102J	5 3/4
8 Solid	M	91-128M	11
8 Solid	P	91-128P	14
6 Solid	P	91-162P	12 1/2
8 A	P	91-8A-P	18
6 A	P	91-6A-P	15 3/4
8 C	P	91-3/081P	14 1/2
9 1/2 D	P	91-3/081P	14 1/2
3 No. 12	P	91-3/081P	14 1/2

Available in other types of copperweld.

**For Steel Conductors**

Wire Size B.W.G.	For Galvanized Wire	Tool Groove	Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
14	BB or 85	C	95-083C	1 1/4
14	BB or 85	C	92-083C	1 1/2
12	BB	C	95-109C	1 1/2
12	85	D	95-109D85	1 3/4
12	135	D	95-109D135	2 1/2
10	BB or 85	J	92-134J	5 1/4
9	BB or 85	J	92-148J	5
8	BB	J	92-165J	5



## Nicopress Suspension Dead-Ends



Completed Suspension Dead-End

Conductor is inserted straight through the shouldered sleeve and compressions are then made with the same Nicopress tool groove that is used for the splicing of that size wire. No bending, bolting of, or damage to the conductor occurs.

### For Copper Wire

Wire Size B&S	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
6	J	71-162J	50
4	M	71-204M	53
4	P	71-204P	54
3	P	71-229P	54
2	T	71-258T	58
2	X	71-258X	61
1	X	71-289X	61

### For Stranded Copper

Wire Size B&S	Strands	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
2	7	T	71-258/TT	60
2	7	N	71-258/7X	66

Available in other sizes.

### For Copperweld—Solid and Stranded



Wire Size A.W.G.	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
8 Solid	M	71-128M	55
8 Solid	P	71-128P	60
6 Solid	P	71-162P	58
4 Solid	X	71-204X	70
3 No. 12	M	71-3/081M	58
3 No. 12	P	71-3/081P	60
3 No. 10	P	73-3/102P	60
8A	P	71-8A-P	62
7A	P	71-7A-P	62
6A	P	71-6A-P	61
4A	X	71-4A-X	70
8C	M	71-3/081M	58
8C	P	71-3/081P	60
9½D	M	71-3/081M	58
9½D	P	71-3/081P	60
8D	P	73-8D-P	..
6D	X	73-6D-X	..

### For Steel Conductor

Wire Size B.W.G.	For Galvanized Wire	Tool Groove	Suspension Dead-End Stock No.	Approx. Ship. Wt., Lb. per 100
8 Solid	130	L	75-165L	65
6 Solid	130	S	75-203S	60
4 Solid	130	W	75-238W	85
8	3 Str. 130	L	75-165/3L	65
6	3 Str. 130	S	75-203/3S	61
4	3 Str. 130	W	75-237/3W	85

## Nicopress Tools

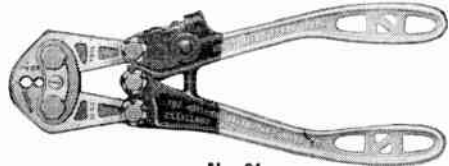
For Telephone, Telegraph, and Signal Work

In making the splice the tool must be of a size that is convenient and practical for the lineman to handle either in the air or on the ground. It must be so efficient in use that pressure can be applied with a certainty that each compression made will be exactly as required.



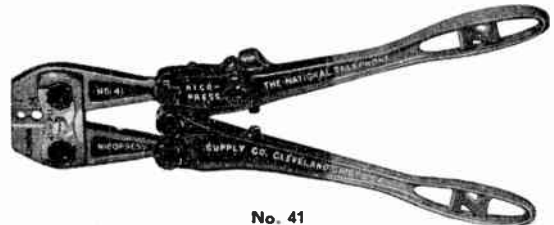
No. 17

No. 17-2. For splicing drop, bridle, and inside wire. Length, 8 inches. Weight, 9 ounces.



No. 31

No. 31. For communication line wire. Available in groove combinations, DC, DJ, CE, DE, CJ and EJ. Also available with single grooves. Length, 11½ inches. Weight, 2 pounds.



No. 41

No. 41. Available in groove combination MJ. Length, 15 inches. Weight, 3½ pounds.



No. 51

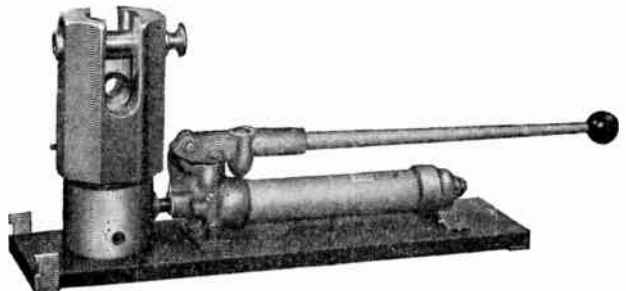
No. 51. For copper and copperweld power conductors. Available in groove combinations PJ, TJ and XJ. Tools for A.C.S.R. are 51-Apple for 6 and 5 A.C.S.R.; 51-Orange for 4 A.C.S.R.; 51-Peach for 2 A.C.S.R.; and 51-Plum for 1/0 A.C.S.R. Length, 18 inches. Weight, 4 pounds.

No. 3

No. 3. Single groove only for W, G3, E5, S and L. In two-groove combination F6 and E8.

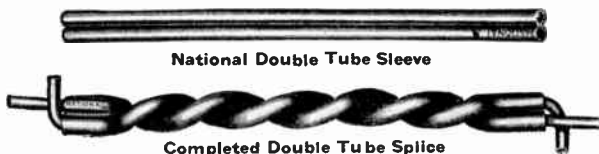
Hand operated and arc similar in design to tools above except that the length is 35 inches and the weight 12 pounds.

## No. 635 Nicopress Hydraulic Tools



For splicing large conductors and high tensile overhead ground wires. Interchangeable dies cover a wide range of sleeves for copper, A.C.S.R., copperweld, and steel strand. Approximate weight, 50 pounds.

**National Twist Sleeves  
National Double Tube Copper Sleeves**



Made from the best grade of pure copper, exact to size.

Solid B&S Gage	Solid B.W.G. Gage	Solid N.B.S. Gage	B&S Gage 7-Wire Stranded Cable	Length Inches	Approx. Ship. Wt. Lb. per 100
18	..	..	..	4	1.5
17	..	..	..	4	1.5
16	..	..	..	4	1.8
14	16	..	..	4	2.0
12	14	14	..	4 1/2	2.3
10	12	12	..	4 3/4	3.0
9	11	..	..	5 1/4	5.0
8	10	..	..	5 1/2	6.0
7	9	..	..	5 3/4	8.5
6	8	..	..	6	10.0
4	..	..	..	8	16.0
3	..	..	1	8 3/4	19.0
2	..	..	3	9 1/2	25.0
1	..	..	2	12	33.5
0	..	..	1	14	55.0
00	..	..	0	16	67.5
000	..	..	00	18	102.5
0000	..	..	0000	20	140.0
..	..	..	0000	20	151.0

Also available in tinned copper.

**National Seamless Single Tube Copper Sleeves  
For Copper and Copperweld Wire and Strand**



**Grooved Oval Type**

Made from highest grade electrolytic copper, formed exactly to size and furnished in a temper that permits easy twisting. In two types, oval and grooved oval.

Specify type and whether solid or stranded.

Solid B&S Gage	B&S Gage 7 or 19-Wire Stranded Cable	Length Inches	Approx. Ship. Wt. Lb. per 100
10	..	4 1/4	3 1/2
9	..	5 1/4	4 1/2
8	..	5	6
6	..	6	10
4	5	8	16
3	4	8 1/2	19
2	3	9 3/4	25
1	2	11	33 1/2
0	1	12 1/2	55
00	0	14	67 1/2
000	00	16	102
0000	000	18	140
..	0000	19 1/2	151
..	250,000 C.M.	21	180
..	300,000 C.M.	21 3/4	220
..	500,000 C.M.	24	320

**For Copperweld-Copper Conductors (Oval)**

Conductor No.	8A	7A	6A	5A	4A	3A	2A
Length.....in.	8	8 1/2	8 1/2	9 3/4	11	12 1/2	14
Approx. Ship. Wt. per 100.....lb.	16	19	19	25	33 1/2	55	67 1/2

**For Extra High Strength Copperweld Messenger and Ground Wires**

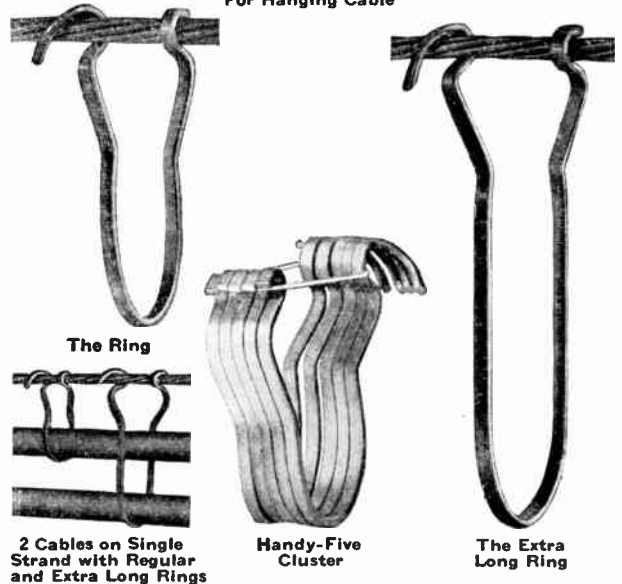
Size.....in.	1/4	3/32	5/16	3/8	7/16	1/2	5/8
Length.....Min.	12	14	16	20	24	26	26
Approx. Ship. Wt. per 100.....lb.	50	60	90	120	190	210	325

Also available in tinned copper.

**National Amerductor Twist Sleeves**

Conductor No.	Length Inches	Stock No.
12 SCG or SCP	8 3/4	4008
10 SCG or SCP	10 3/4	4010
8 SCG or SCP	8 3/4	4008
6 SCG or SCP	11 3/4	4006
4 SCG or SCP	13	4004
2 SCG or SCP	16	4002
8 X	11	4008X

**National Galvanized Cable Rings  
With Tension Grip  
For Hanging Cable**



Quickly and easily placed on the messenger, and once in position, will not slip along or jump off, remaining rigid in position because of the tension grip design. Use of these rings enables pulling the cable from either direction and eliminates necessity of reriding the messenger to replace or respace rings. Made from flat, high carbon steel wire with rounded edges. Hot-dip galvanized, with an even deep coating of zinc assuring smoothness and long life.

Gathered in Handy-Five Clusters for convenience in handling. This simple method of gathering, prevents hooking together of rings and does away with all ground litter.

**National Regular Cable Rings**

Size In.	Cable Diameter Inches	*Strand Size	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1 1/2	1/2 to 1 3/16	..	1000	47
2 Light	1 1/16 to 1 3/16	..	500	66
2 Heavy	1 3/16 to 1 9/16	..	500	90
2 1/2	1 5/16 to 1 15/16	..	500	108
3	1 11/16 to 2 1/4	..	400	125
3 1/2	2 1/4 to 2 5/8	..	300	140
4	2 5/8 to 3	..	250	192
4 1/2	3 to 3 1/2	..	200	210

**National Copperweld Cable Rings**

Size In.	Strand Size	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1 1/2	5/16 and 3/8	1000	48
2	5/16 and 3/8	500	96
2 1/2	3/8	500	110
3	7/16	400	125
3 1/2	7/16	300	140

Also furnished in calsun bronze.

**National Extra Long Cable Rings**

Size In.	*Strand Size	Length Under Strand Inches	Std. Pkg.	Approx. Ship. Wt. Lb. per 1000
1 1/2	..	4 3/4	500	114
2	..	5 1/4	300	170
2 1/2	..	6 3/4	250	216
3	..	7 1/2	200	255
3 1/2	..	8	200	270

Can also be furnished in copperweld and calsun bronze.

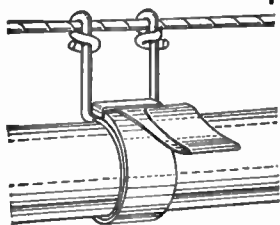
\*Made in all strand sizes. Specify size desired.



**National Cable Ring Saddles**

Furnished in aluminum, galvanized steel, and bronze. Made in sizes 1 1/2, 2, 2 1/2, 3, and 3 1/2 inches.

## Diamond Aerial Cable Supports



The purpose of aerial cable supports is to supply flexible supports at each side of the pole to prevent ring out. The strap is wrapped around the cable three times over itself, passing through the hinge member. Adjustable to any height. Provides a flat bearing which will not injure the cable sheath.

The supports are placed two on each side of each pole. They are placed 20 inches apart.

The aerial cable support is composed of a zinc strip, a hinge joint member which holds the free end of the zinc strip in position on a soft galvanized U-shaped wire, 5 inches long.

No.	Per 1000	Length Strap Inches	Maximum Diameter of Cable or Sleeve Inches	Maximum Circumference of Cable or Sleeve Inches	Standard Carton	Weight per 1000 Pounds
891	\$75.00	10	3/4	2 5/16	500	84
892	91.00	16	1 3/16	3 5/8	500	110
893	107.00	22	2	6 5/16	300	130
894	130.00	28	2 5/8	8 5/16	300	162
895	147.00	34	3 1/8	10	300	186
896	189.00	50	†5S	15 13/16	200	256
897	225.00	64	†6 1/2 S	20 1/2	200	315
*898	264.00	64	†6 1/2 S	20 1/2	200	350

\*No. 8 is exactly the same as No. 7 except No. 8 has 10-inch long U-shaped wire on end instead of 5-inch long wire as on regular supports.

†Maximum diameter of sleeve.

## Reliable Cable Hangers



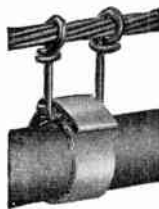
Cable hangers have proved that wear on cable sheath can be eliminated. Entire sheath is grounded solidly to messenger and grade clamp is not needed as cable does not creep on steepest grade.

Hanger is rust-proof and unusually neat in appearance. Maintenance cost of aerial cable is materially reduced and enclosure of entire cable and messenger with cable molding in trees is facilitated.

Zinc hangers are used for supporting lead-covered cable sheath to steel strand. Copper hangers are used for supporting insulated wires or cable to Copperweld strand.

Lgth. In.	Zinc		Copper		WIRE SIZE, INCHES		
	No.	Per 1000	No.	Per 1000	Strand	Max.	Min.
7 7/8	1	\$18.00	1C	\$22.00	5/16	3/4	1/2
11	2	30.00	2C	35.00	3/8	1 1/8	1/2
14	3	40.00	3C	45.00	3/8	1 5/8	1/2
16	4	50.00	4C	53.00	3/8	1 7/8	7/8
18	5	60.00	5C	71.00	3/8	2 1/4	1 1/2
19 1/2	6	70.00	6C	80.00	3/8	2 1/6	2
21	7	80.00	7C	80.00	3/8	2 5/8	2 3/8
22 1/2	8	90.00	8C	90.00	3/8	2 7/8	2 7/8

## National Aerial Cable Supports



Broad, flat smooth zinc strap of support, wrapped 3 times around cable in installation, assures maximum strength and permanence. Support wires applied so that they do not bind but slide easily, to assure flexibility as cable vibrates, expands, contracts or sways.

MAXIMUM SIZE CABLE, INCHES		Length Strap Inches	Lgth. Wire Support Inches	Stock No.	Approx. Ship. Wt. Lb. per 100
Diameter	Circum.				
3/4	2 5/16	10	5	1	8
1 3/8	4 7/16	16	5	2	10
2	6 5/16	22	5	3	12 1/2
2 5/8	8 7/16	28	5	4	15 1/2
3 3/16	10	34	5	5	17
5 Sleeve	15 3/4	50	5	6	24 1/2
6 1/2 Sleeve	20 7/16	64	5	7	28
6 1/2 Sleeve	20 7/16	64	10	8	30 1/2

## National Zinc Cable Clips



The broad flat zinc strap of the assembly provides a wide surface for the cable to rest on and the hooks are so constructed that they move on the strand allowing the necessary play as the cable vibrates, expands, and contracts.

Specify length of strap when ordering.

Strap Length... in.	4-5	6-7-8	9-10-11	12-14	Over 14 to 20
Approx. Ship. Wt. per 100..... lbs.	7	8 1/2	10	11	14

## National Marline Cable Hangers

Specify length of loop.



Maximum Diameter Cable Inches	Length Loop Inches	Approx. Ship. Wt. Lb. per 1000
7/8	9	35
1	10	36
1 1/8	11	37
1 1/4	12	38
1 1/2	13	39
1 5/8	14	40
1 3/4	15	42
2	16	45
2 1/4	18	49
2 1/2	20	62

## National Marline Twine

Furnished in 1-pound balls.



No.....	415	416
Ply.....	2	3

## American Brand Tarred Marline

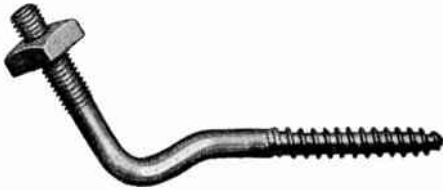
A 2 or 3-yarn tarred jute twine used principally by power and light companies, contractors, telephone companies and by manufacturers of conduits and cables.

Put up in 1-pound balls. Prices upon application.





**National Angle Screws**



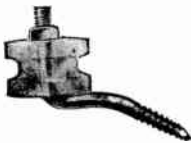
Designed for use with porcelain knobs in dead ending drop wires on building, where angle between drop and building is 30° or more.

Hot-dip galvanized.

Made to A.T.&T. standard.

Size.....	inches	5/16
Approx. Shipping Weight per 100.....	pounds	12

**Diamond Angle Screw Fixtures**



For attaching knobs for drop wiring on wood or stone structures. Price does not include porcelain knobs.

No.....	840	841
Per 100.....	\$5.50	9.00
Size.....	5/16	3/8
Length Screw End.....	1 3/4	2
Length Shank.....	2 1/4	3 1/2
Size Anchor.....	16-18x1"	20-24x1 3/4"
Weight per 100.....	12	20

**Diamond Insulated Screw Eyes**



Hot galvanized by the Diamond process.

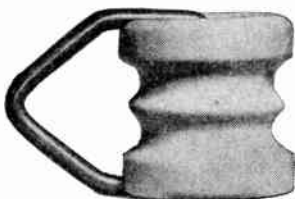
Porcelain ring has a diagonal opening which allows the

easy insertion of wires and when pulled taut they cannot become released from the ring.

Size steel, 1/4 inch. Opening size, 5/8 inch. Packed 100 in a container.

No.....	830	831	832	833
Per 1000.....	\$76.67	83.34	100.00	103.34
Type.....	5/8"S	5/8"L	1"S	1"L
Eye.....	5/8	5/8	1	1
Shank.....	1	2	1 1/8	2 1/8
Weight per 1000.....	85	95	180	190

**National C-B Knobs for Drop Wires**



For use on buildings and in trees, C-B Knobs offer many advantages over the rigid knob or insulator.

The knob is hooked into the bridle ring and the drop is dead ended on the knob. When used in trees to prevent abrasion, the drop wire

is simply carried over the knob with a simple tie.

It makes no difference at what angle the drop wire approaches, as the knob provides a flexible and self-adjusting support, equalizing the strain and taking up all vibration.

No.....	190	191
Style.....	Single Groove	Double Groove
Shipping Wt. per 1000.....	250	250

**National Galvanized Bridle Rings**



These rings are hot-dip galvanized, giving them high rust resistance.

They are a screw type ring, made to A.T.&T. standard, for running twisted pair, bridle, or parallel drop wire on building walls, fences, and poles.

Style.....	A	C	E	F
Eye Size.....	1 5/8	1 1/4	5/8	3
Approx. Shipping Wt. per 1000.....	115	75	30	300

**Diamond Bridle Rings  
Wood and Machine Screw Thread**



Wood Screw



Machine Screw

For pole line and interior block distribution.

When using Style A, C, E, or F in masonry installations, use the size anchor shown.

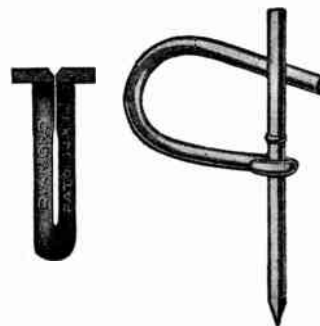
No.	Per 100	Style	Hot-Dip Galvanized or Enameled			Size Anchor	Wt. Lb. Galv.	PER 1000 Enam.
			Eye Inches	Shank Inches	Steel Inches			
810	....	A	1 5/8	1 1/4	1/4	10-14x1	110	150
812	....	C	1 1/4	1 1/4	1/4	10-14x1	95	125
814	....	E	5/8	7/8	3/16	10-14x 3/4	35	50
816	....	F	3	1 7/8	5/16	16-18x1 1/2	300	335

Opening 5/16-inch. Specify galvanized or enameled.

**Machine Screw Thread  
Hot-Dip Galvanized Only**

No.	Per 100	Style	Eye Inches	Thread	Wt. Lb. per 100
821	\$3.50	K	3/4	10-24	4
823	3.75	M	1 1/4	10-24	6
825	7.80	Q	1 1/4	1/4-20	9.5
827	8.30	R	1 5/8	1/4-20	11

**Diamond Drive Rings**



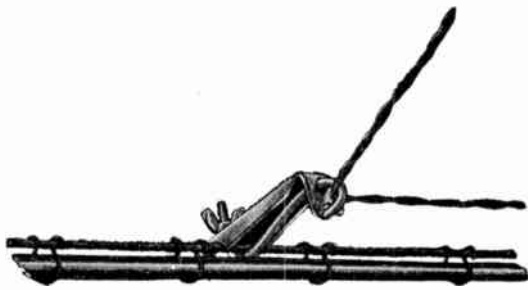
Hot galvanized by the Diamond process.

Accomplishes the same purpose as the screw threaded pigtail bridle ring, but is designed for driving instead of screwing into structures. When attached to wood, drive as an ordinary wire nail. When attached to hard substances, brick, stone, or concrete, use the 1/2-inch size with the 3/16x5/8-inch Diamond Hammer drive

anchors, and the 5/8 and 7/8-inch size with 1/4x1-inch Diamond hammer drive anchor. Packed 100 to a box.

No.....	801	802	803
Per 1000.....	\$7.00	12.00	17.00
Diameter Eye.....	1/2	5/8	7/8
Overall Length.....	2 1/8	2 1/4	2 3/8
Size Hammer Drive Anchor to Use in.	3/16x5/8	1/4x1	1/4x1
Weight per 1000.....	18	28	53

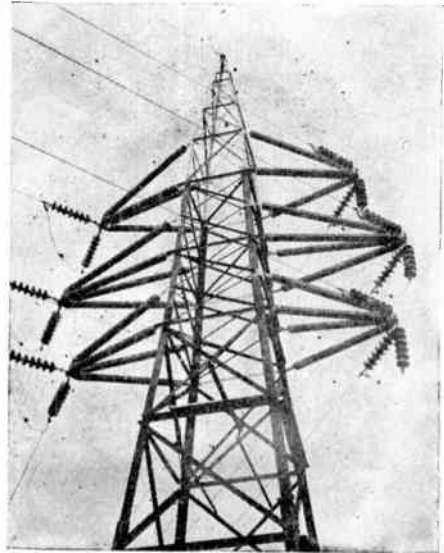
## No. 865 Diamond Style A Span Clamps For Suspended Cable



Used for taking off drop wire leads along the span.  
Also used for pull-offs to hold the cable away from trees, thus avoiding the use of tree guards.  
Can only be used with suspended cable.  
Plate is made of 1/8-inch steel. Hooks are made of 5/16-inch round, high tensile strength steel.  
All parts are hot-dipped galvanized after fabrication.  
Packed 100 to a carton.  
Shipping weight, 47 pounds.

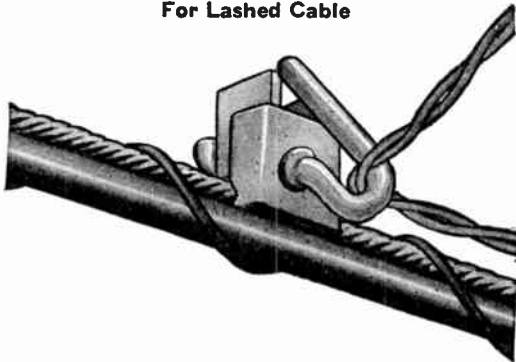
No. 865.....per 100 \$25.00

## Hubbard High Tension Hardware

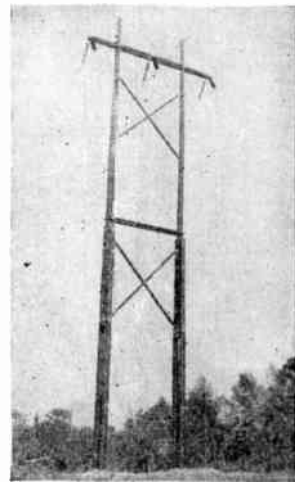


Conversion of Steel Tower Arms to Hubbard Dual-Member Wood Arms

## No. 866 Diamond Style B Span Clamps For Lashed Cable



Used for taking off drop wire leads along the span.  
Also used for pulloffs to hold the cable away from trees, thus avoiding the use of tree guards.  
Can be used for both lashed and suspended cable.  
Plate is made of 1/8-inch steel. Hooks are made of 5/16-inch round, high tensile strength steel. All parts are hot-dipped galvanized after fabrication. Packed 100 to carton.  
No. 866, Shipping Weight, 41 Pounds.....per 100 \$25.00

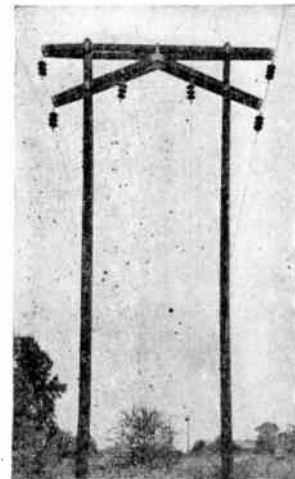
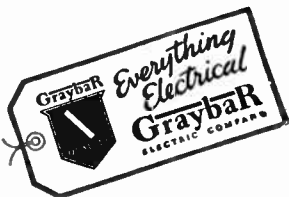


River Crossing Structure

## National Drive Rings



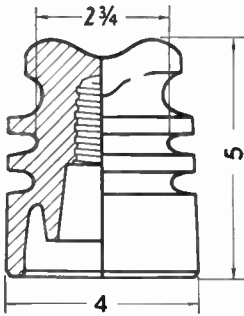
Low cost, efficient, hammer drive rings for use where only a few pairs of wire are being run. Hot-dip galvanized. Made to A.T.&T. standard. Eye size, 1/2 inch. Length, 2 inches. Approximate shipping weight per 1000, 17 pounds.



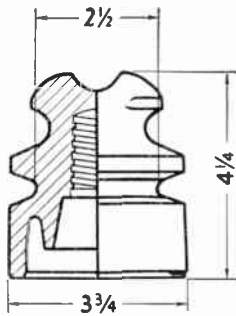
Hubbard K-Frame Structure with Flexible Center Assembly

For Complete Information and Prices Covering Hubbard High Tension Hardware, Write for Catalog

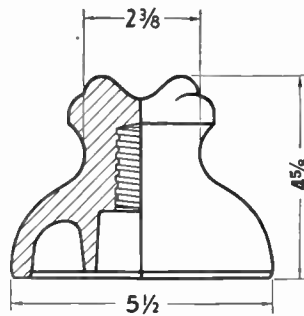
Owens-Illinois Power Insulators



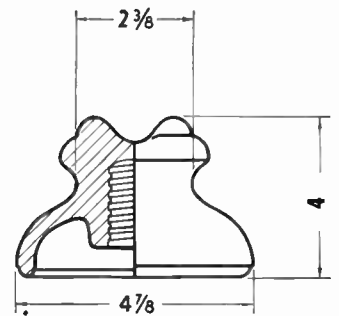
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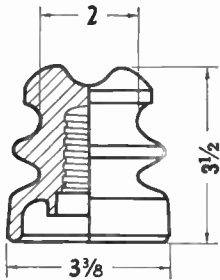
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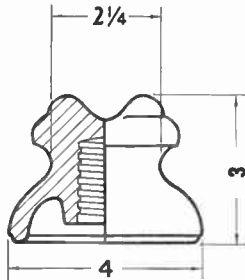
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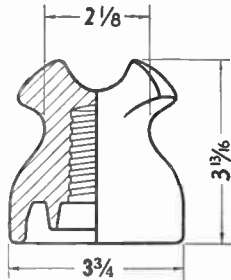
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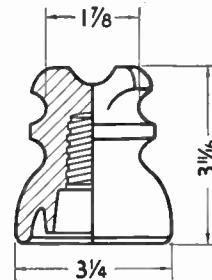
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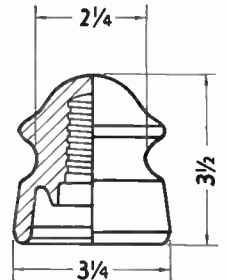
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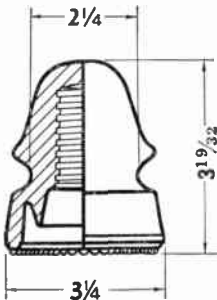
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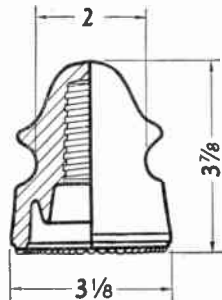
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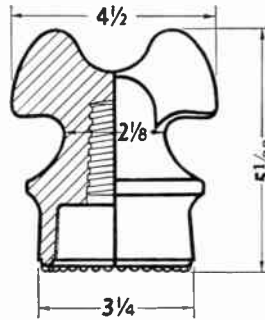
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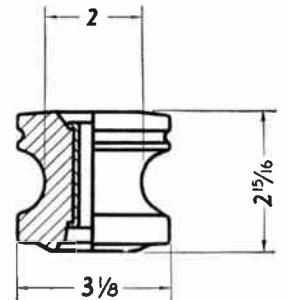
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NO. 20



NO. 60



NO. 518LB

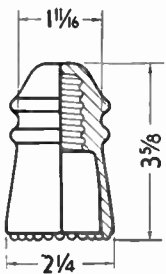
All Insulators Above Have Pin Hole Size of 1 Inch

No.	680	670	514	513	660	512	62	61	510	19	20	60	518-L.B.
Flashover:													
60 Cycles Dry..... kilowatts	70	65	70	60	55	50	55	45	35	35	35	40	..
60 Cycles Wet..... kilowatts	45	40	40	35	35	25	27	25	20	20	20	25	..
1 1/2x40 Wave..... kilowatts	120	100	120	95	85	85	85	80	75	75	75	80	..
Leakage Distance..... inches	9 1/2	7 1/2	8	5	5 1/8	4	4 1/2	4	4	4 1/8	4 3/8	4 1/2	..
Arcing Distance:													
Dry..... inches	5	4 1/2	4 5/8	4	3 1/2	3	3 1/4	3	2 3/8	2 3/8	2 3/8	3	..
Wet..... inches	1 1/4	1 1/8	2	1 3/4	1	1 1/4	1 1/8	1	1	1	1	1 1/8	..
Mechanical Strength..... pounds	3000	2500	2000	2500	2500	3000	2500	2500	4000	2500	2500	2500	4000
Minimum Pin Height..... inches	5 1/2	5	5	5	4	4	3 13/16	3 1/16	4	3 19/32	3 7/8	5 1/32	..
Standard Package.....	24	24	24	30	50	50	40	50	50	50	50	50	50
Weight per Std. Pkg..... pounds	68	51 1/2	69 1/2	52 1/2	66	69 1/2	72	64	64	56 1/2	58 1/2	49	69 1/2

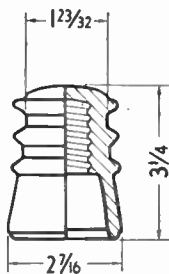
Prices on Request



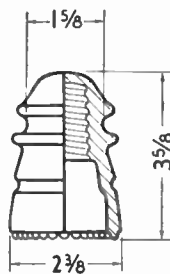
## Hemingray Communication Insulators



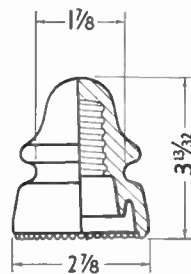
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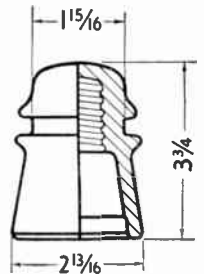
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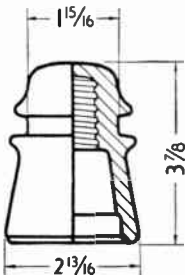
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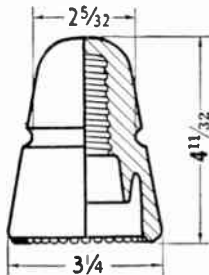
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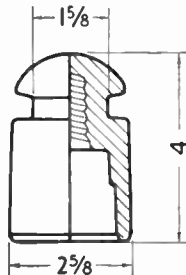
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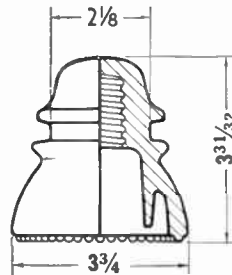
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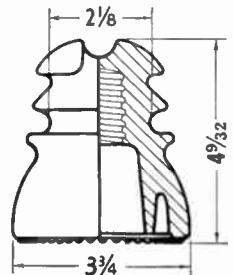
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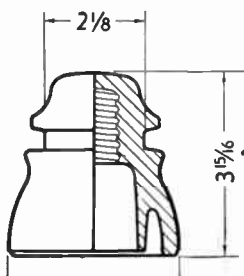
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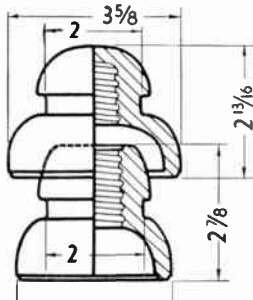
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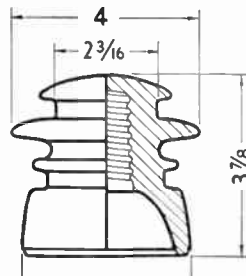
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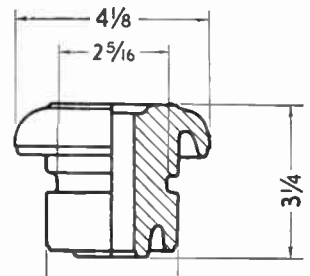
NO.45



NO.50



NO.53



NO.110

All Insulators Above Have Pin Hole Size of 1 Inch

No.....	9	10	12	14	16	17	21	22	42	43	45	50	53	110
Carton.....	50	50	50	50	50	50	40	50	40	40	40	25	30	40
Weight per Carton..... pounds	30	35 1/2	32 1/2	40	51 1/2	52 1/2	56	57	60	78 1/2	67	48 1/2	58 1/2	76
Approximate Weight per 1000..... pounds	600	710	650	800	1090	1050	1400	1110	1500	1963	1675	1940	1950	1900

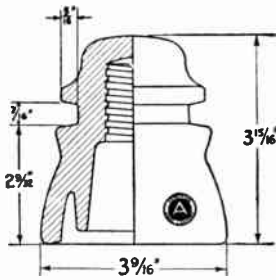
Prices on Request

## Armstrong's Glass Insulators

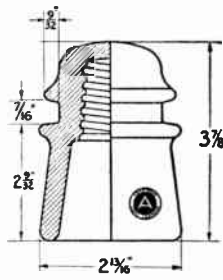
Made by the Armstrong Cork Company

Armstrong's No. 1 meets the Bell System's standards for "DP", No. 2 for "Toll Line," No. 3 for "Exchange Line," and "TW" for "Transposition."

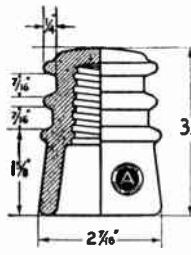
Western Union and the country's leading railroads use Armstrong's No. 1.



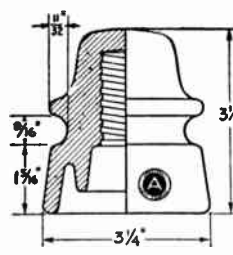
No. 1 Double Petticoat Type



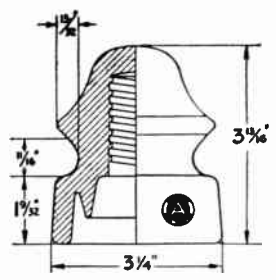
No. 2 Toll Line Type



No. 3 Exchange Line Type

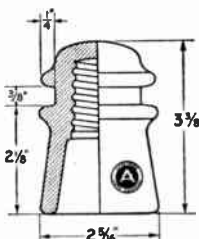


No. 4 Deep Groove, Double Petticoat Type

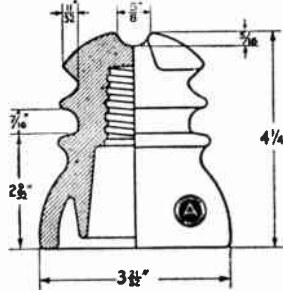


No. 5 Extra Deep Groove, Double Petticoat Type

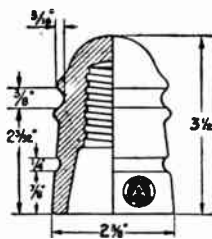
No.	1	2	3	4	5
Average Wet Flash-Over Voltage.....	25,000	22,000	22,300	20,500	23,000
Average Dry Flash-Over Voltage.....	52,900	39,300	38,600	42,100	43,000
Leakage Distance..... inches	7 1/4	5	4 1/2	4 15/16	5 5/16
Wet Arcing Distance..... inches	1 7/8	5/8	1 1/2	7/8	1 5/16
Standard Package.....	40	50	50	50	50
Average Weight Each..... ounces	24 1/4	16	10 3/4	17 1/2	18 1/2
Approx. Ship. Wt., Std. Pkg..... pounds	65	54	36	59	61
Approx. Ship. Wt., per 1000..... pounds	1625	1080	720	1174	1220



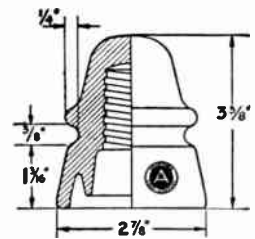
No. 9 Pony Type



No. 10 Top Groove, Western Union Type

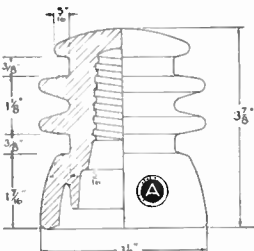


No. 13 Double Groove, Pony Type

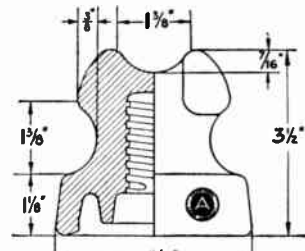


No. 14 Deep Groove, Double Petticoat Pony Type

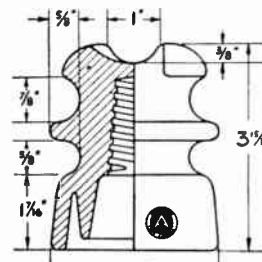
No.	9	10	13	14
Average Wet Flash-Over Voltage.....	20,800	26,700	20,100	16,500
Average Dry Flash-Over Voltage.....	34,900	59,500	37,000	35,600
Leakage Distance..... inches	4 1/8	8 1/8	4 1/4	3 15/16
Wet Arcing Distance..... inches	3/8	1	1 1/2	7/8
Standard Package.....	50	40	50	50
Average Weight, Each..... ounces	9 3/8	26 1/2	9 5/8	12 1/2
Approx. Ship. Wt., Std. Pkg..... pounds	31	72	32	41
Approx. Ship. Wt., per 1000..... pounds	620	1800	640	820



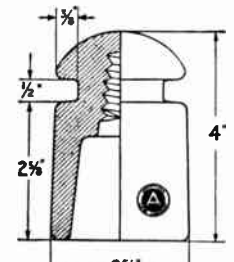
TW- One-Piece Transposition Type



No. 511A Cable Type



No. 512U Universal Distribution Type



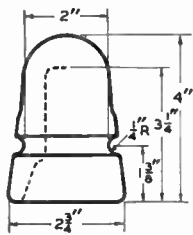
CSC For mounting on a steel pin cushioned with a .016-inch lead thimble.

No.	15	511A	*512U	CSC
Average Wet Flash-Over Voltage.....	26,600	26,000	.....	.....
Average Dry Flash-Over Voltage.....	54,500	59,000	.....	.....
Leakage Distance..... inches	6 5/8	4 1/2	.....	.....
Wet Arcing Distance..... inches	1	1	.....	.....
Standard Package.....	30	32	50	50
Average Weight Each..... ounces	29 1/4	23 1/4	.....	.....
Approximate Ship. Wt., Std. Pkg..... pounds	58	50	73	56
Approximate Ship. Wt., per 1000..... pounds	1930	1562	1440	1120

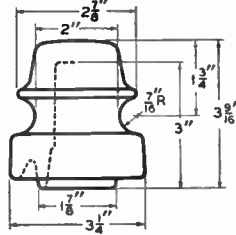
\*Furnished in brown glass only

Prices Upon Application

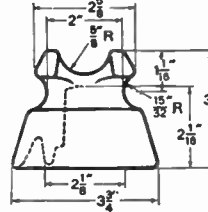
## O-B Low-Voltage Pintype Insulators For Distribution and Farm Lines



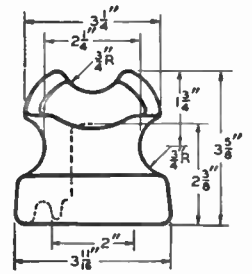
No. 30418



No. 232C7



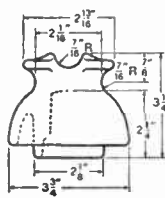
No. 9404



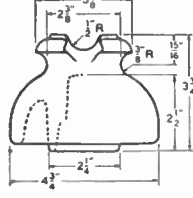
No. 9953

Number	30418	29207	9404	9953
Dry Flashover	30	35	50	50
Wet Flashover	15	20	25	25
Leakage Distance	25 5/8	4	4	4
Dry Arcing Distance	2	2 1/4	3 3/8	3 1/4
Mechanical Strength	2500	3000	2500	3000
Pinhole Diameter	1	1	1	1
Pin Recommended	4	4	4	4
No. in Standard Package	50	50	50	50
Shipping Weight per 100	104	117	132	164

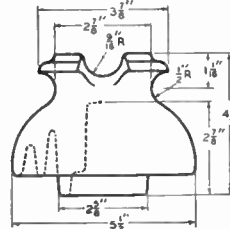
## For Distribution and Farm Lines—Untreated Units and Conduction—Glazed Silintypes



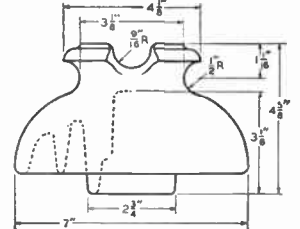
Nos. 12847 and 38147



Nos. 12848 and 38148



Nos. 12849 and 38149



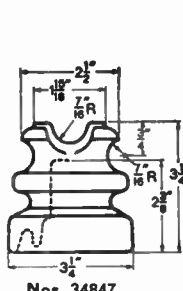
Nos. 12851, 12852, 38151, and 38152

Untreated No.	12847	12848	12849	12851	12852
Silintype No.	38147	38148	38149	38151	38152
*Dry Flashover	50	65	70	85	85
Wet Flashover	25	35	40	45	45
Impulse Flashover, 1 1/2x40 Positive	75	100	110	140	140
Impulse Flashover, 1 1/2x40 Negative	95	130	140	170	170
Leakage Distance	5	7	9	12	12
Dry Arcing Distance	3 3/8	4 1/2	5	6 1/4	6 1/4
Mechanical Strength	2500	2500	3000	3000	3000
Diameter Pinhole	1	1	1	1	1
Pin Recommended	4	5	6	7	7
No. in Standard Package	50	32	18	12	12
Shipping Weight per 100	138	234	366	616	606

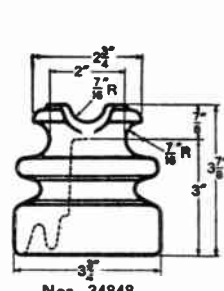
\*For untreated insulators. Silintype insulators may have flashover values as much as 5 kilovolts below these values.

## O-B Kingpin Insulators

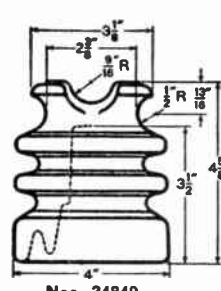
### For Distribution and Farm Lines—Untreated Units and Conduction—Glazed Silintypes



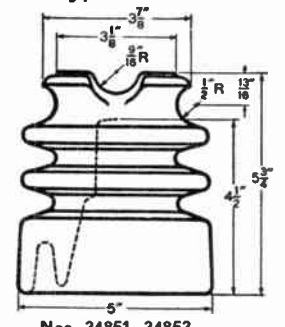
Nos. 34847 and 38947



Nos. 34848 and 38948



Nos. 34849 and 38949



Nos. 34851, 34852, 38951 and 38952

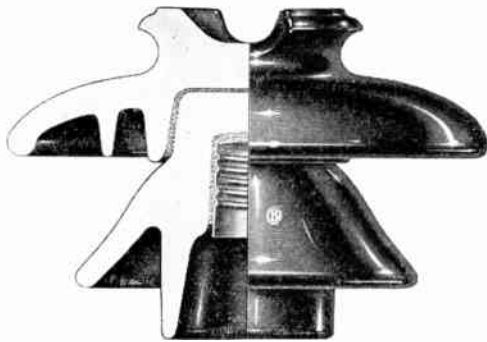
Untreated No.	34847	34848	34849	34851	34852
Silintype No.	38947	38948	38949	38951	38952
*Dry Flashover	50	65	70	85	85
Wet Flashover	30	40	45	55	55
Leakage Distance	6	7 1/4	9	12 1/2	12 1/2
Mechanical Strength	2500	2500	3000	3000	3000
Pinhole Diameter	1	1	1	1	1 3/8
Pin Recommended	4	5	6	7	7
No. in Standard Package	50	32	24	12	12
Shipping Weight per 100	132	198	283	560	550

\*For untreated insulators. Silintype insulators may have flashover values as much as 5 kilovolts below these values.



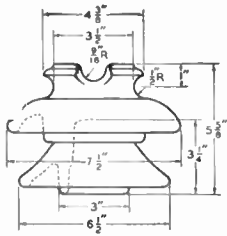
## O-B Multipart Insulators

### Untreated Units and Conduction-Glazed Silentyes

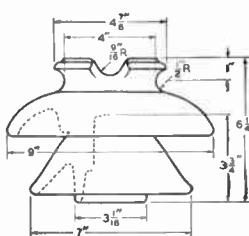


Untreated No.	31546	31622	31623	31855
Silentye No.	38246	38222	38223	38255
Dry Flashover..... kilovolts	95	110	125	140
Wet Flashover..... kilovolts	60	70	80	95
Impulse Flashover:				
1½x40 Positive..... kilovolts	150	175	200	225
1½x40 Negative..... kilovolts	190	225	265	310
Leakage Distance..... inches	13	17	21	27
Dry Arcing Distance..... inches	7	8¼	9½	11¼
Mechanical Strength..... pounds	2,500	3,000	3,000	3,000
Pinhole Diameter..... inches	1⅜	1⅜	1⅜	1⅜
Pin Recommended..... inches	7	8	9	11
No. in Standard Package.....	6	6	6	3
Shipping Weight per 100..... pounds	867	1185	1485	2660

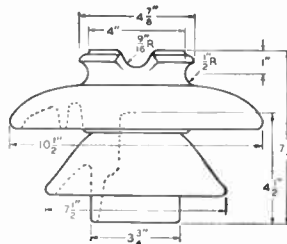
Regularly furnished with 1⅜-inch metal-thread pinholes. Other standard forms of pinholes furnished upon specification.



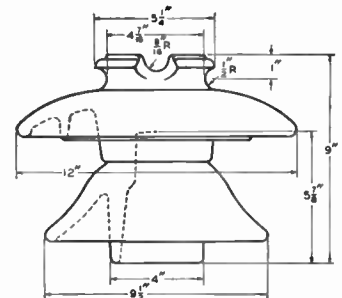
Nos. 31546 and 38246



Nos. 31622 and 38222

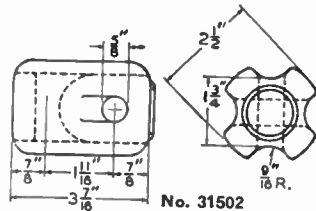
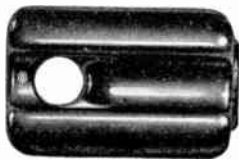


Nos. 31623 and 38223

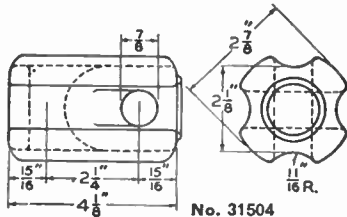


Nos. 31855 and 38255

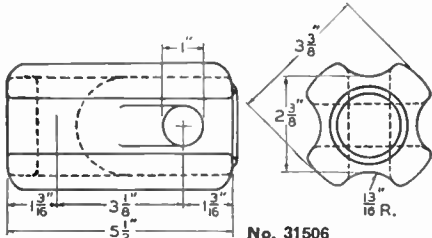
### O-B Type J-B Strain Insulators For Distribution and Farm Lines



No. 31502



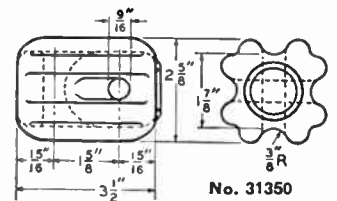
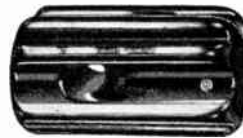
No. 31504



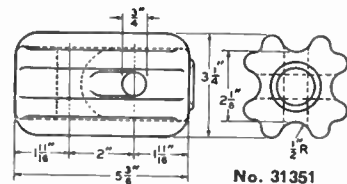
No. 31506

No.	31502	31504	31506
Dry Flashover..... kilovolts	25	30	35
Wet Flashover..... kilovolts	14	16	18
Leakage Distance..... inches	15⅝	17⅝	21¼
Rated Ultimate Strength..... pounds	10,000	12,000	20,000
No. in Standard Package.....	50	50	25
Shipping Weight per 100..... pounds	125	200	375

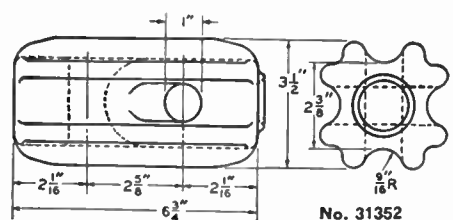
### O-B Multi-Fin Strain Insulators For Distribution and Farm Lines



No. 31350



No. 31351



No. 31352

No.	31350	31351	31352
Dry Flashover..... kilovolts	30	35	40
Wet Flashover..... kilovolts	17	20	24
Leakage Distance..... inches	21⅝	23¼	23¼
Rated Ultimate Strength..... pounds	10,000	12,000	20,000
No. in Standard Package.....	50	25	16
Shipping Weight per 100..... pounds	150	350	485

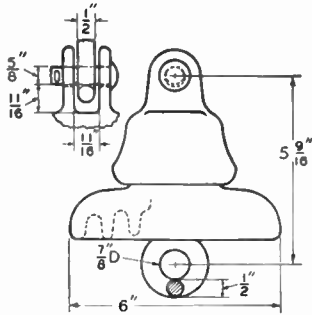
## O-B Distribution and Farm Line Suspension Insulators

6-Inch Diameter Units

7½-Inch Diameter Units



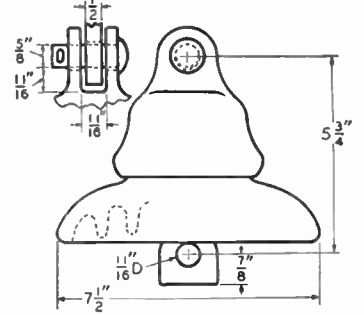
No. 32433



No. 32433

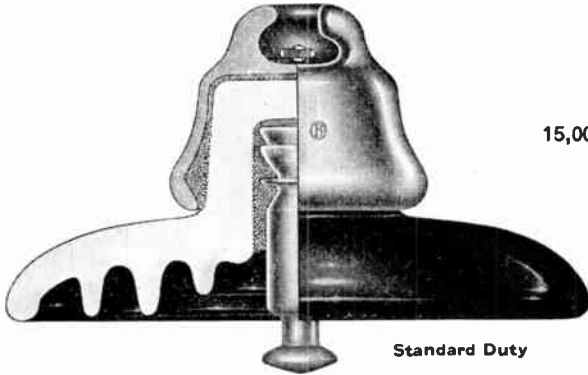


No. 32435

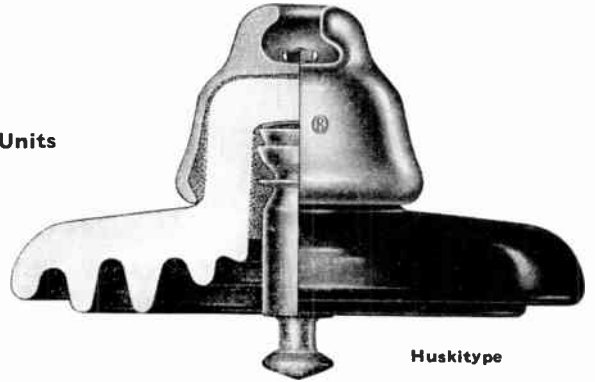


No. 32435

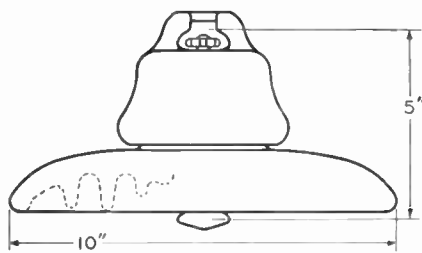
### 15,000-Pound Units



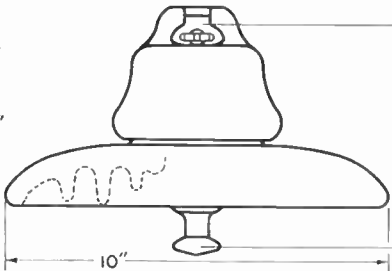
Standard Duty



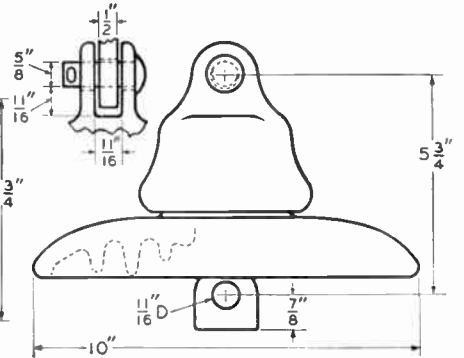
Huskitype



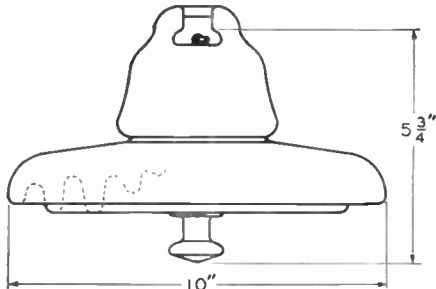
No. 32436



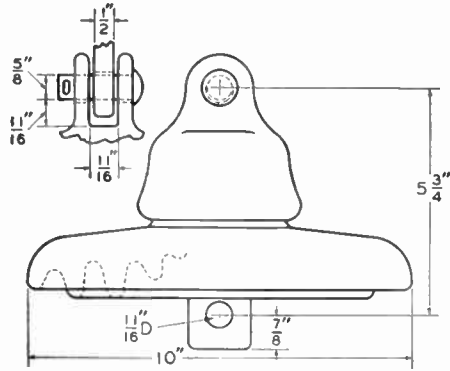
No. 32440



No. 32439



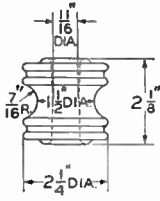
No. 34500



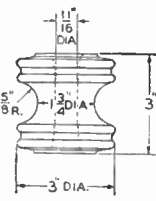
No. 35301

No.	6-In. Dia. Unit		7½-In. Dia. Unit			15,000-Pound Units	
	32433	32435	32436	32440	32439	34500	35301
Dry Flashover.....	60	65	80	80	80	80	80
Wet Flashover.....	30	35	50	50	50	50	50
Leakage Distance.....	7	8¾	11¾	11¾	11¾	12	12
Dry Arcing Distance.....	4½	5¾	7¾	7¾	7¾	8	8
Mechanical and Electrical Strength.....	10,000	15,000	15,000	15,000	15,000	15,000	15,000
Mechanical Impact Strength.....	8	6	55	55	55	90	90
No. in Standard Package.....	8	6	6	6	6	6	6
Shipping Weight per 100.....	550	885	1140	1040	1050	1240	1250

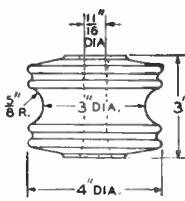
O-B Spools



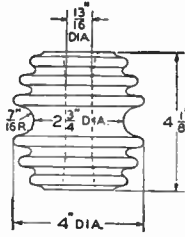
No. 36139



No. 36361



No. 38911

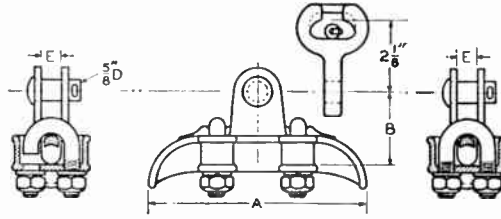


No. 36140



No. ....	36139	36361	38911	36140	36361	38911	36140
Size.....	inches	2 1/8	3	3	4 1/8	4 1/8	4 1/8
Shipping Weight per 100.....	pounds	50	125	250	245	245	245

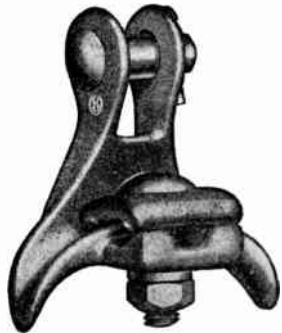
O-B Suspension Clamps



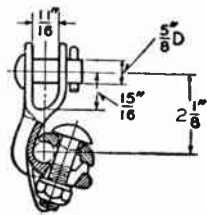
J-Bolt No.	U-Bolt No.	Cable Diam., In. Minimum	Maximum	Type of Fitting	DIMENSIONS, INCHES			Ultimate Strength Pounds	Approx. Ship. Wt. Lb. per 100
					A	B	E		
83041	83044	0.12	0.46	None	5 3/4	2 1/8		16,000	180
83042	83045	0.12	0.46	Socket	5 3/4	2 1/8		16,000	280
83061	83064	0.20	0.60	None	6 3/4	2 1/4	5/16	16,000	295
83062	83065	0.20	0.60	Socket	6 3/4	2 1/4	Same as Maximum Seat Diameter	16,000	405
83071	83074	0.30	0.70	None	7 1/8	2 1/4		18,000	335
83072	83075	0.30	0.70	Socket	7 1/8	2 1/4		18,000	435
83081	83084	0.40	0.83	None	7 1/2	2 3/8		18,000	410
83082	83085	0.40	0.83	Socket	7 1/2	2 3/8		18,000	520

Available with arcing horns, if desired.  
Furnished with either copper or aluminum liners when specified.  
Deduct 0.1-inch from maximum seat diameter to allow for liner.  
Information on larger sizes furnished upon request.

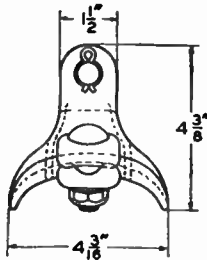
O-B Angle Clamps



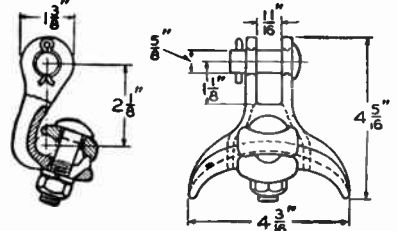
No. ....	81460	82860	
Cable Diameter: Minimum.....	inches	162	162
Maximum.....	inches	600	600
Ultimate Strength.....	pounds	7000	7000
Shipping Weight per 100.....	pounds	145	145



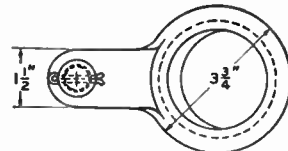
No. 81460



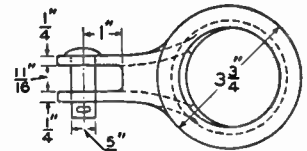
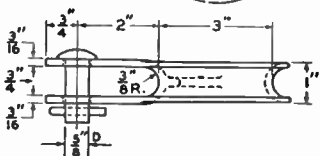
No. 82860



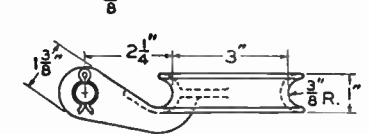
O-B Dead-End Thimbles



No. 80425



No. 82825



Either thimble attaches directly to the eye or clevis of a suspension insulator and serves as a means for dead-ending or turning angles.  
Made of O-B Flecto-processed malleable iron, hot-dip galvanized.

No. ....	80425	82825	
Ultimate Strength.....	pounds	7000	7000
Shipping Weight per 100.....	pounds	130	150



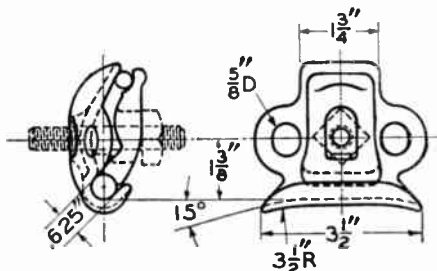
## O-B Neutral Clamps

Patented

### For Distribution and Farm Lines

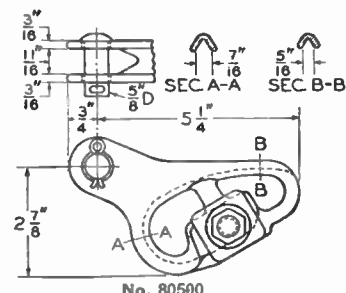
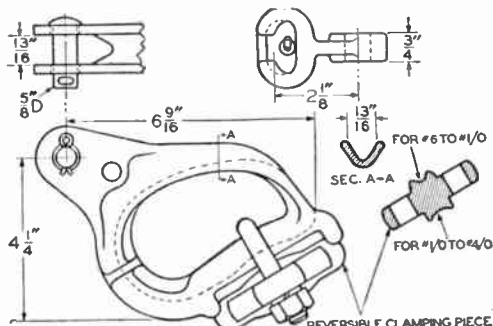
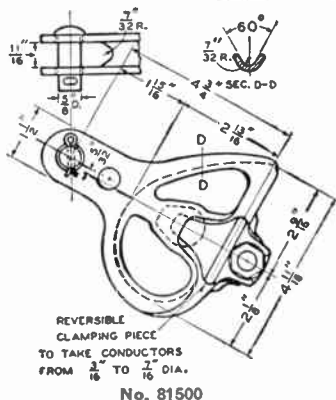
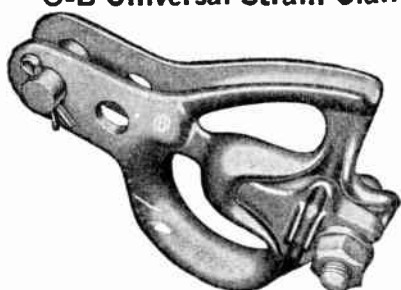
Has a seat for holding the neutral conductor, an eye on each side for dead-ending service wires, and a groove on the upper edge of the keeper piece for a ground wire or neutral secondary wire.

The portion of the main clamp casting through which the bolt passes is threaded.



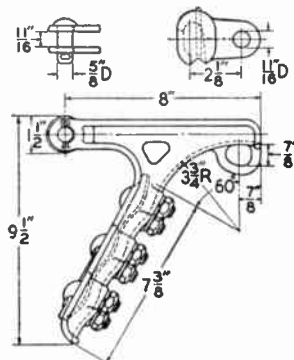
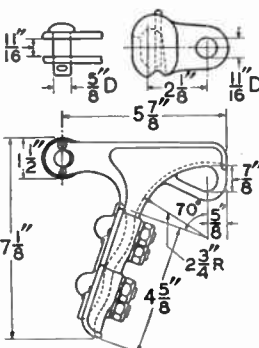
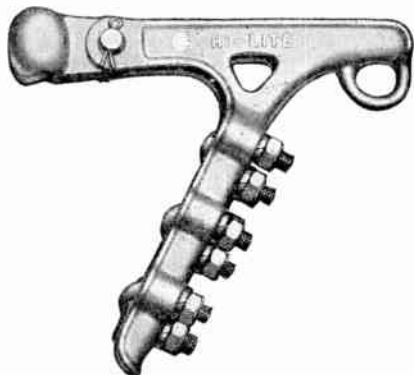
No.	Description	Ship. Wt. Lb. per 100
81000	Tapped for 5/8-Inch Bolt.....	120
81005	Tapped for 1/2-Inch Bolt.....	120

## O-B Universal Strain Clamps



No.	Type of Fitting	Cable Diameter: Minimum	Cable Diameter: Maximum	Ultimate Strength	Shipping Weight per 100
No. 80500	Socket	.125	.350	8,000	130
No. 81500	Socket	.160	.550	10,000	230
No. 80500 and 81500	None	.160	.550	14,000	390
No. 78501	Socket	.160	.550	14,000	538

## O-B Hi-Lite Strain Clamps



Without Liners No.	*With Aluminum Liners No.	Type of Fitting	CABLE DIAM. INCHES		Ultimate Strength Pounds	Approx. Ship. Wt. Lb. per 100	Without Liners No.	*With Aluminum Liners No.	Type of Fitting	CABLE DIAM. INCHES		Ultimate Strength Pounds	Approx. Ship. Wt. Lb. per 100
			Min.	Max.						Min.	Max.		
83835	85135	Socket	.200	.460	14,000	415	80435	Socket	.200	.550	15,000	628	
83834	85134	None	.200	.460	14,000	300	80437	None	.200	.450	15,000	630	
83835	85135	None	.190	.360	14,000	305	80438	None	.200	.450	15,000	495	
83834	85134	None	.190	.360	14,000	305	80438	None	.200	.450	15,000	505	

\*Copper liners will be furnished when specified

O-B Hook Bolt Strain Clamps

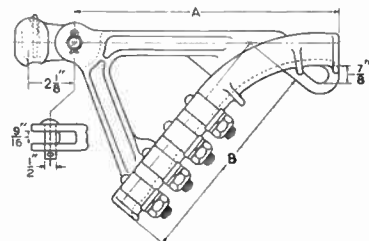
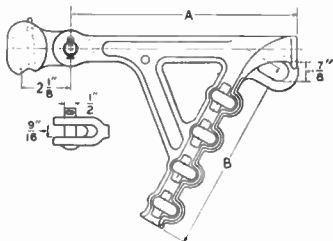
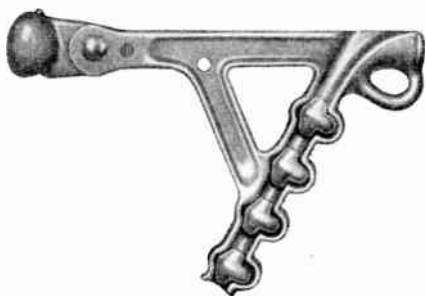


Figure 1

Figure 2

Designed primarily for use with copper conductors. Will develop slip strength in excess of the elastic limit of most cables which it will accommodate. Hook bolts need not be removed to install conductor. Merely turn out of the way before slipping cable into the conductor groove.

Body and fittings are made of O-B Flecto-processed malleable iron. Bolts and nuts are steel. All ferrous parts are hot-dip galvanized. Not furnished with liners.

No.	Fig. No.	Type of Fitting	DIMEN., IN.		CABLE DIAM. INCHES		Ultimate Strength Pounds	Ship. Wt. Lb. per 100
			A	B	Min.	Max.		
11541	1	Socket	10 1/8	8 1/2	.187	.500	8,500	610
10755	1	None	10 1/8	8 1/2	.187	.500	8,500	530
11542	2	Socket	9 3/4	8 1/4	.312	.687	15,000	805
11040	2	None	9 3/4	8 1/4	.312	.687	15,000	715
11543	2	Socket	11 5/8	9 1/8	.375	.750	15,000	870
11328	2	None	11 5/8	9 1/8	.375	.750	15,000	750

O-B Ball Eyes

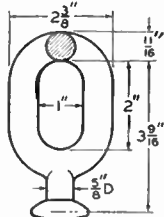
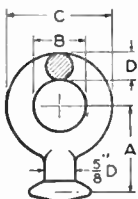


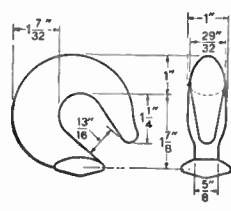
Figure 1

Figure 2

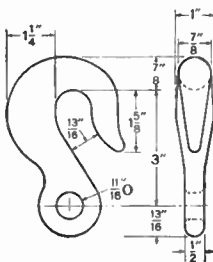
Used for attaching ball-and-socket type suspension insulators to supporting structures. Made of forged steel, hot-dip galvanized.

No.	Fig. No.	DIMENSIONS, INCHES				Ultimate Strength Pounds	Ship. Wt. Lb. per 100
		A	B	C	D		
11547	1	1 1/2	1 1/16	1 13/16	9/16	20,000	62
12939	1	1 3/4	1 1/16	2 3/16	9/16	20,000	52
13499	1	1 15/16	1 1/4	2 3/8	9/16	20,000	62
70167	1	1 15/16	1 3/16	2 1/16	13/16	30,000	105
70698	1	2 1/8	1 1/4	2 5/8	1 1/16	20,000	83
70776	2	...	...	...	...	30,000	94

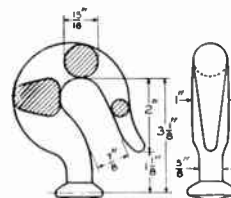
O-B Hooks



No. 78420



No. 79270



No. 85465

Used for attaching suspension insulators to supporting structures. Made of forged steel, hot-dip galvanized.

No.	78420	79270	85465
Ultimate Strength	25,000 pounds	25,000 pounds	25,000 pounds
Shipping Weight per 100	105 pounds	115 pounds	150 pounds

O-B Ball Clevises

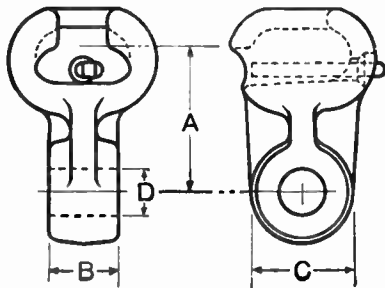
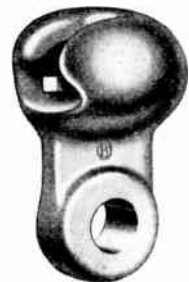
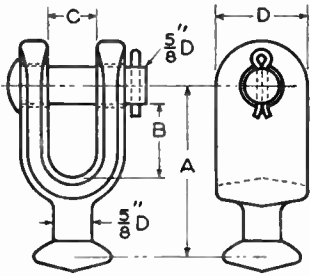
Used for attaching ball-and-socket type suspension insulators to supporting structures. Made of forged steel, hot-dip galvanized.

No.	DIMENSIONS, INCHES				Ultimate Strength Pounds	Ship. Wt. Lb. per 100
	A	B	C	D		
70689	2 3/4	1 3/8	1 3/16	1 1/2	20,000	115
79601	2 7/8	1 3/8	1 3/16	1 1/16	30,000	120
70488	3 3/4	2 3/8	1 3/16	1 1/2	20,000	155

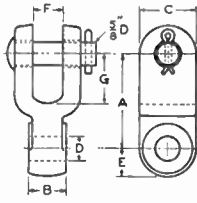
O-B Socket Eyes

Used for attaching suspension and strain clamps to ball-and-socket type suspension insulators. Made of O-B Flecto-processed malleable iron, hot-dip galvanized.

No.	DIMENSIONS, INCHES				Ultimate Strength Pounds	Ship. Wt. Lb. per 100
	A	B	C	D		
11544	2 1/8	1 1/2	1 1/2	9/16	16,000	115
78721	2 1/8	1 1/2	1 1/2	1 1/16	16,000	105
72441	3 1/4	1 1/2	1 3/4	1 1/16	16,000	160
74593	2 1/8	5/8	1 1/2	1 1/16	18,000	115
78728	2 1/8	3/4	1 1/2	1 1/16	18,000	115
82885	2 5/8	3/4	2	1 3/16	27,000	197
82891	2 1/8	7/8	1 5/8	1 1/16	25,000	150



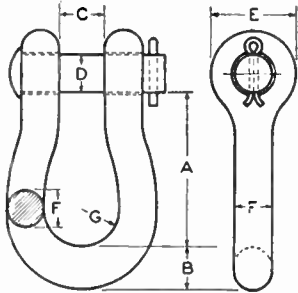
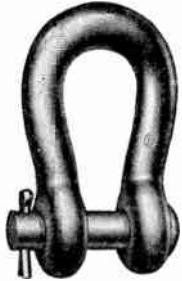
## O-B Clevis Eyes



Used to connect suspension and strainclamps to clevis type insulators or for similar applications. Made of O-B Fleeto-processed malleable iron or drop-forged steel, hot-dip galvanized.

No.	DIMENSIONS INCHES							Ultimate Strength Pounds	Ship. Wt. Lb. per 100
	A	B	C	D	E	F	G		
83831	2 1/2	1 1/2	1 3/4	1 1/16	3/4	1 3/16	1 1/8	18,000	115
83832	2 1/2	1 9/32	1 3/4	1 1/16	3/4	1 3/16	1 1/8	20,000	120
82904	2 3/4	3/4	1 3/4	1 3/16	7/8	1 1/16	1 1/16	35,000	140
79085	2 5/8	7/8	1 1/2	1 1/16	3/4	1 3/16	1 1/16	25,000	156
76026	2 1/2	1	1 1/2	1 1/16	3/4	1 3/16	1 1/16	25,000	156
82905	2 3/4	1	1 3/4	1 3/16	7/8	1 1/16	1 1/16	35,000	170
82906	2 3/4	1 1/8	1 3/4	1 3/16	7/8	1 1/16	1 1/16	35,000	175
75384	2 1/2	1 3/16	1 1/2	1 1/16	3/4	1 3/16	1 3/16	25,000	165

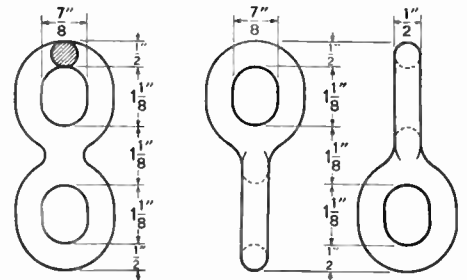
## O-B Anchor Shackles



Made of forged steel, hot-dip galvanized. Furnished with machine bolts, nuts and cotters in place of rivets when so specified.

No.	DIMENSIONS, INCHES								Ultimate Strength Pounds	Ship. Wt. Lb. per 100
	A	B	C	D	E	F	G			
13722	1 7/8	1 1/2	3/4	9/16	1 3/16	1 1/2	5/8	20,000	62	
79608	2 1/2	9/16	7/8	5/8	1 3/8	9/16	1 1/16	25,000	105	
79609	2 3/8	5/8	1 1/16	3/4	1 3/4	5/8	3/4	25,000	165	
70706	3 1/8	7/8	3/4	3/4	1 3/4	3/4	3/4	40,000	220	
79600	3 1/8	7/8	7/8	3/4	1 3/4	3/4	3/4	60,000	225	
83543	3 5/8	1 1/4	1 3/8	1 1/4	3	1 1/4	1 1/8	75,000	700	

## O-B Figure 8 Links



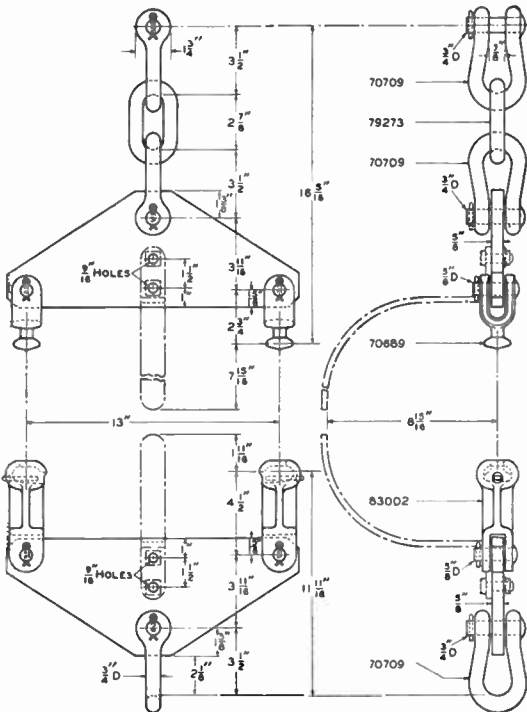
No. 72451

No. 72452

Made of drop-forged steel, hot-dip galvanized.

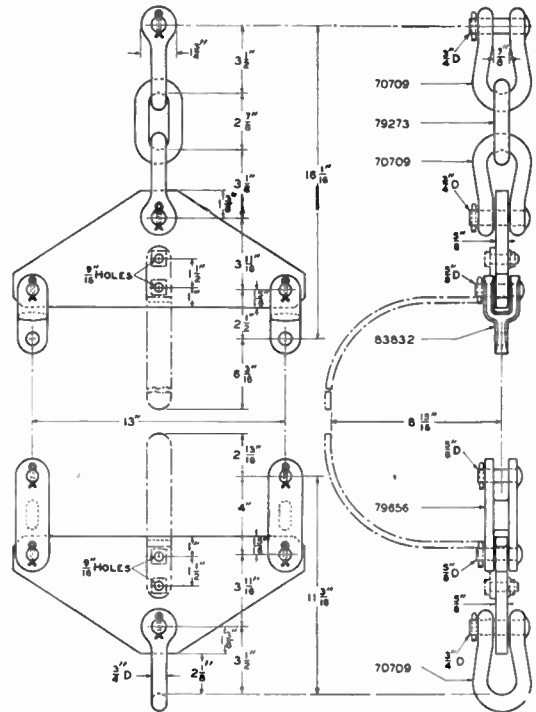
No. ....	72451	72452
Ultimate Strength.....	pounds 20,000	pounds 20,000
Shipping Weight per 100.....	pounds 62	pounds 62

## O-B Plate Type Strain Yokes Medium Duty



Nos. 79650 and 79631  
For Ball-and-Socket Type Insulators

No.	Description	Ultimate Strength Pounds	Ship. Wt. Lb. per 100
79650	With Fittings and Arcing Horns.....	36,000	4190
79631	With Fittings, Without Arcing Horns	36,000	3800

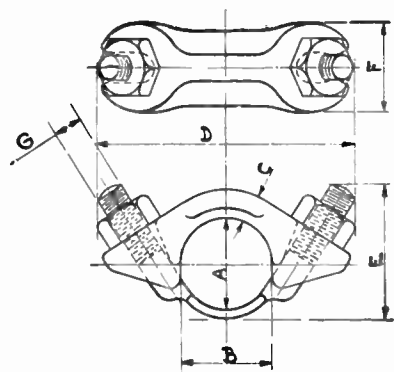


Nos. 79651 and 79632  
For Clevis Type Insulators

No.	Description	Ultimate Strength Pounds	Ship. Wt. Lb. per 100
79651	With Fittings and Arcing Horns.....	36,000	4190
79632	With Fittings, Without Arcing Horns	36,000	3800

Fittings for attaching yokes to structures and strain clamps are furnished as part of each set.





**Conductor Accessories**  
**Armor Rod Clip (V-Bolt Type)**

Made of strong aluminum alloy. Can be placed over armor rods by removing only one nut from the V-bolt.

**No. 422 Reliable Flip-On Loop Clamps**



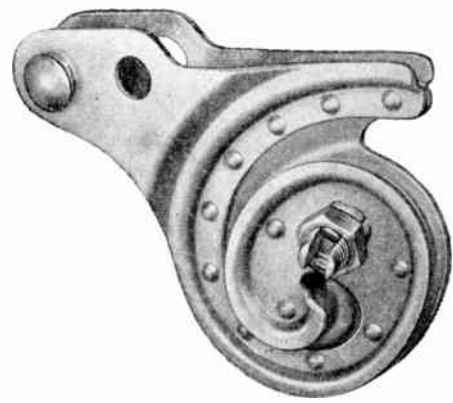
For use in secondary deadending. Fastens Nos. 2 or 4 ACSR around spool or thimble. Easily installed, only one screw to tighten. Made of all-aluminum alloy. A long bell-mouthed contacting surface of soft aluminum grips the wire to its breaking strength without damage to the conductor.

Weight, 4 ounces.

No. 422.....each

No.	OVERALL DIAM. ACCOMMODATED INCHES		DIMENSIONS, INCHES							Total Weight Pounds
	Min. A	Max. A	B	C	D	E	F	G		
1100	0.340	0.400	0.410	1/2	1 15/16	1 15/16	3/8	3/4	0.033	
1101	0.401	0.440	0.460	3/4	2	1 3/8	3/8	3/4	0.034	
1102	0.441	0.510	0.520	1	2 1/16	1 3/8	3/8	3/4	0.037	
1103	0.511	0.600	0.610	1 1/4	2 3/16	1 3/8	3/8	3/4	0.041	
1104	0.601	0.660	0.660	1 3/4	2 1/16	1 3/4	29/32	5/16	0.075	
1105	0.661	0.760	0.770	1 7/8	2 3/8	1 13/16	29/32	5/16	0.076	
1106	0.761	0.860	0.870	2	2 3/8	1 13/16	59/64	5/16	0.087	
1107	0.861	0.975	0.990	2 1/8	3 1/16	1 13/16	59/64	5/16	0.091	
1108	0.976	1.115	1.130	2 3/8	3 1/4	2 1/16	1 15/16	5/16	0.101	
1109	1.116	1.265	1.280	3	3 7/8	2 3/8	1 3/4	5/16	0.162	
1110	1.266	1.440	1.455	3 1/2	4 1/16	2 3/8	1 5/8	5/16	0.179	
1111	1.441	1.620	1.635	3 3/4	4 5/16	2 3/8	1 13/16	5/16	0.196	
1112	1.621	1.815	1.830	4	4 1/2	2 3/4	1 1/2	5/8	0.210	

**No. 420 Reliable Snub Dead Ends**



Accommodates Nos. 2 or 4 ACSR. Made of high strength, non-corrosive aluminum alloy. Spiral form carries the snub principle to full advantage to develop, approximately, the full strength of the conductor and to distribute the strain equally on all strands. It does not damage the conductor.

Easily installed. Light weight of clamp minimizes vibration fatigue strains, prolonging the life of the conductor. Weight, 3/4 pound.

No. 420.....each

**Twisting Joints for ACSR Cable**



Each joint consists of two sleeves. The number specifies complete joint, i.e., two sleeves. For making this joint two twisting wrenches are required. In ordering them specify same number as joint. Joints are made of aluminum.

No.	ACSR Size CM or A.W.G.	Overall Diameter Cable Inches	Length Each Sleeve Inches	Total Wt., Lb. per Joint
544	4	0.250	12	0.25
542	2	0.316	15	0.42
540	1/0	0.398	19	0.60
529	2/0	0.447	21	0.80
528	3/0	0.502	23	0.86
527	4/0	0.563	26	1.15

**Aluminum Flat Armor Wire**

Packed on spools containing 35 and 10 pounds each.

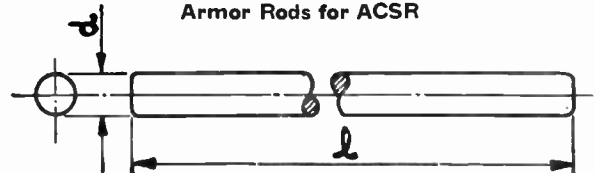
ACSR	All-Aluminum	Thickness Inches	Width Inches	Wt., Lb. per 1000 Ft.
6, 5	4, 3, 2, 1	0.03	0.25	8.8
4 and Larger	1/0 and Larger	0.05	0.30	17.6

**Strong Aluminum Alloy Round Tie Wire**

Shipped in 10, 25 and 50 pound coils.

Size A.W.G.	Diam. in.	Tensile Str., Lb.	Wt., Lb. per 1000 Ft.
Aluminum Tie Wire No. 6	0.162	210	24.2
Strong Aluminum Alloy Tie Wire No. 7	0.144	425	18.9

**Armor Rods for ACSR**

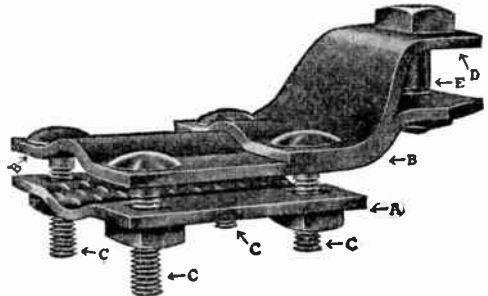


Shipped in straight bundles tied in sets at each end and at intervals not exceeding 18 inches.

No.	Single Support		Double Support		Rod Size	Req. per Set	Req. Clip No.	Req. Wrench Size	Req. Die No.
	Wt., Lb. per Set	No.	Wt., Lb. per Set	Type					
1124	0.54	1154	0.71	Straight	4	8	1103	C	4203
1126	0.63	1156	0.80	Straight	2	10	1103	C	4205
1128.1	1.14	1158.1	1.51	Straight	1/0	10	1105	C	4207
1129	1.12	1159	1.45	Straight	2/0	12	1105	C	4225
1130	1.54	1160	1.95	Straight	3/0	12	1106	C	4225
1131	2.11	1161	2.63	Straight	4/0	12	1107	C	4225
1241	1.22	1291	1.68	Tapered	2/0	10	1104	C	4207
1245	1.51	1295	2.10	Tapered	3/0	10	1105	C	4207
1249	1.87	1299	2.70	Tapered	4/0	10	1105	C	4207

\*Same for both conductor strands. †Wrench size "E" with integral die may be used. ‡Wrench size "D" with integral die may be used.

**Matthews Cable Clamps**

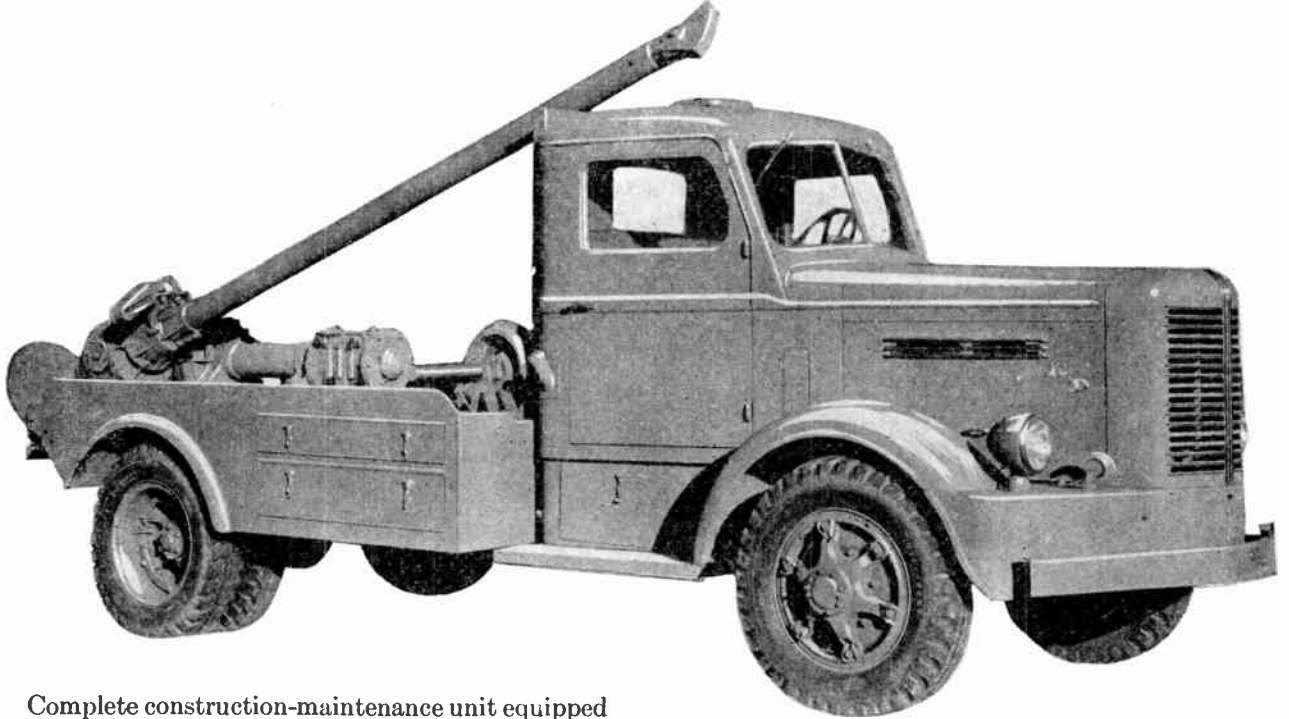


Galvanized cable clamp for use on all copper power cables from 000 to 1,500,000 C.M. inclusive. Designed to do away with the need for costly splices, hazardous soldering operations and waste of costly cable, where power cable is used in industrial plants or on transmission cables, where strains do not exceed 1200 pounds. For a.c. cables, the No. 3 clamp has two of the carriage bolts, C, on one side, made of Everdur to break the magnetic field. When used on cables carrying d.c., the four carriage bolts, C, are made of hot galvanized steel. Steel clamping plates, A, B, and D, and the steel strain insulator bolt, E, are hot galvanized.

No. 2, Shipping Weight per 100, 400 Pounds....each \$3.60  
No. 3, Shipping Weight per 100, 400 Pounds....each 4.60

Prices quoted are for small quantities. Write for quotations on large quantities.

**FWD Light Duty Earth Boring Units**



Complete construction-maintenance unit equipped with roomy platform body, single drum winch, earth boring machine with integral type derrick, fully enclosed drive, attractive coupe type cab, and other accessory equipment.

Ideal for large or small utility. Bores holes 16 to 20 inches in diameter, 7-feet deep.

Handles poles up to 45 feet in length.

**Specifications**

Gross vehicle weight, 17,000 pounds. Brake horsepower, 95 at 2800 revolutions per minute. Wheelbase, 144 inches. Tread, 69 inches. Tires, 8:25x20; duals rear.

Complete specifications and information furnished upon request.

**FWD Heavy Duty Earth Boring and Pole Setting Machines  
For Power Line Construction**



For boring holes up to 56 inches in diameter, 12-feet deep through ice, frost, sandstone, shale, or any soil that can be dug by hand without blasting.

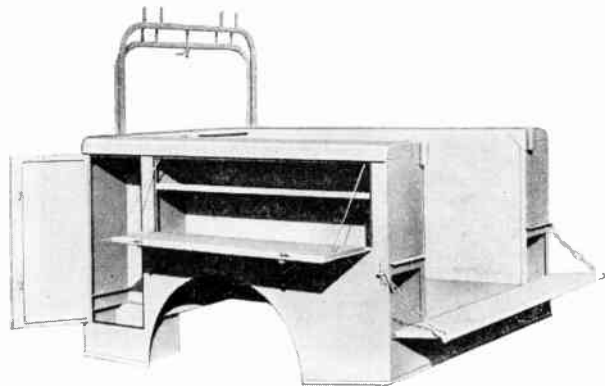
Features 180° turntable, derrick integral with borer, and power elevated boring tower. Write for Bulletin No. 452 for complete information.

**FWD All Steel Pick-Up Bodies**

For large and small utilities. Ruggedly built to render years of satisfactory service.

**Model B6**

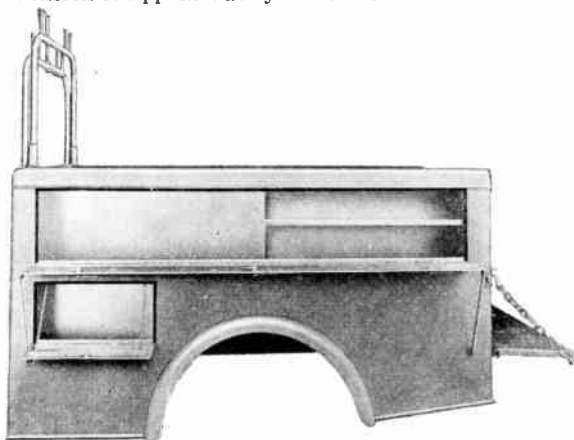
For Mounting on Any 1/2-Ton Chassis with Cab-to-Axle Dimension of Approximately 38 Inches.



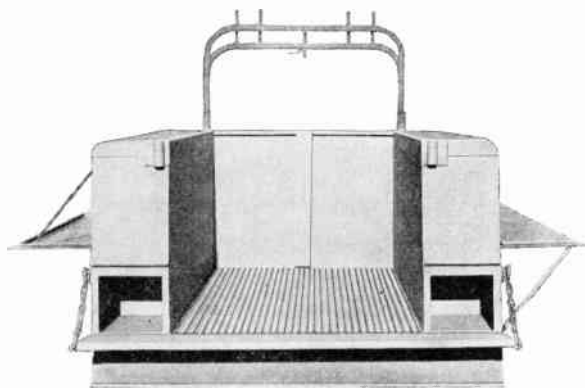
Left Side View of Model B6 Body Showing Spacious Compartments and Ladder Racks in Forward Position

**Model B7**

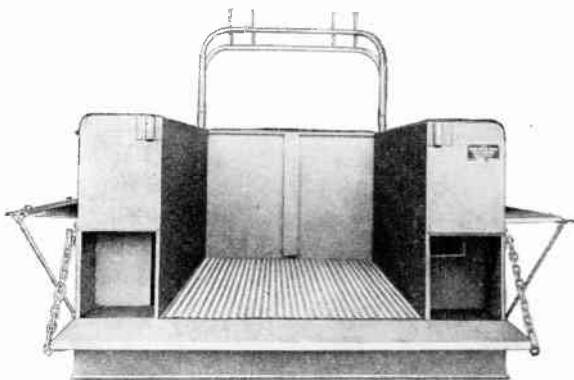
For mounting on All 3/4-Ton Chassis with Cab-to-Axle Dimension of Approximately 50 Inches.



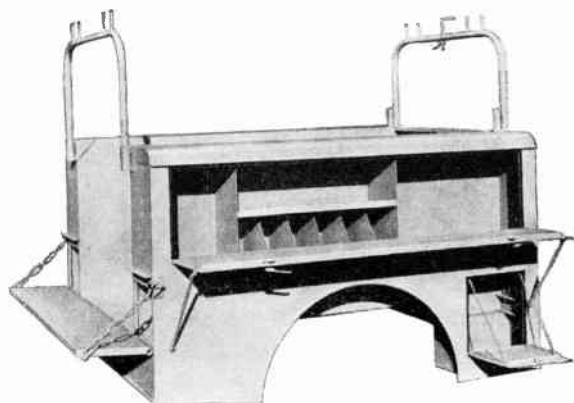
Right Side of Model B7 Body Showing Dust and Moisture Proof Compartments. All-Steel, Compact, and Practical



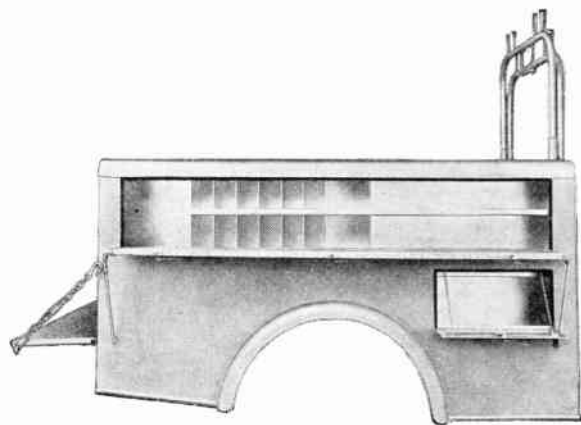
Rear View of Model B6 Body Showing Corrugated Floor Which Is Double Thick in Center to Insure Maximum Strength



Rear View. Body Has 30 Square Feet of Floor Space



Right Side of Model B6 Body. All Compartments are Weather Stripped; Dust and Moisture-proof



Left Side. Ladder Racks Shown in Forward Resting Position

**Specifications**

Model B6 is of durable construction, built for long, economical service.  
 Length, 74 inches. Width, 67 inches. Floor width between compartments, 42 inches.  
 Weight, approximately 600 pounds.

**Specifications**

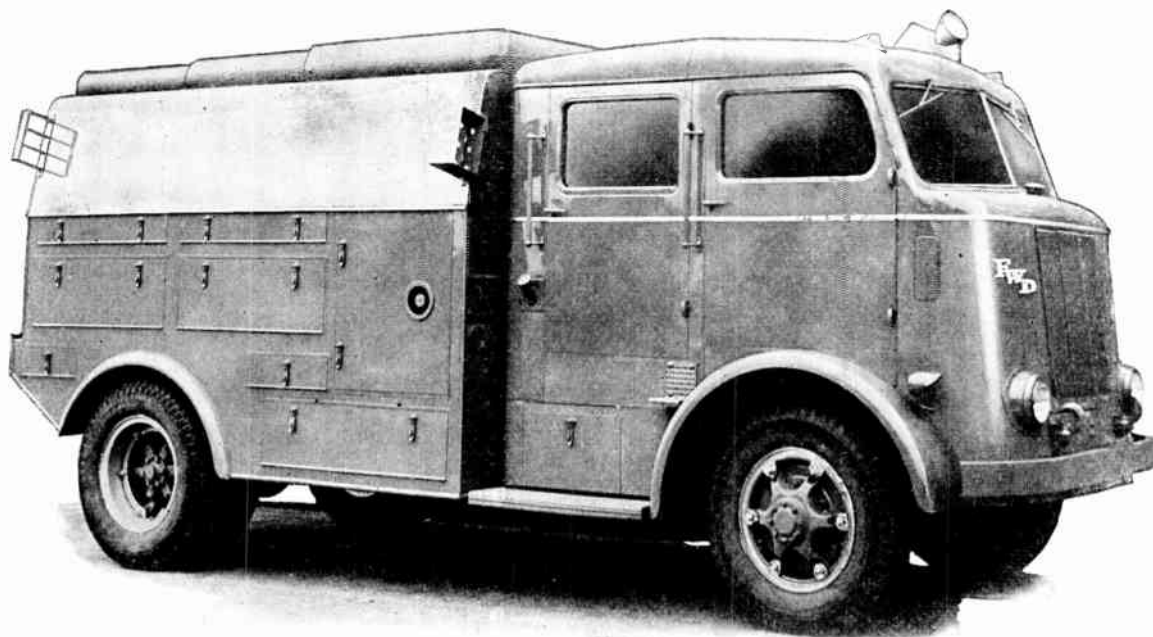
Length, 84 inches. Width, 67 inches. Floor width between compartments, 42 inches.  
 Weight, approximately, 975 pounds.

**Complete Information and Prices Furnished upon Request**



## FWD Line Construction and Maintenance Units

With Utility Model U-10 All Steel Body



Model U-10 all steel body designed for large and small utility companies is highly adaptable for mounting winch, derrick, boring machine and other accessories. For mounting on all makes of trucks with a cab-to-axle dimension of approximately 84 inches.

This line construction and maintenance unit is furnished complete as shown.

### Body Specifications

Dimensions: length, 123½ inches; height, 78 inches; and width, 90 inches.

Winch compartment is 62 inches wide, and 20 inches high, and 24 inches deep.

Write for complete information and prices.

### Model 1417 Towing Hooks



For trucks up to 3½-ton capacity.

Attaches to frame of truck with braces to the side bars.

Has coil spring to cushion starting and stopping shocks.

Positive locking latch eliminates danger of uncoupling.

Weight, 48 pounds.

Prices upon request.

### Type L Draw Bars

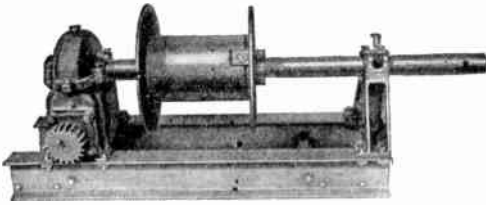


For use with pole dinkey and light trucks. Attaches to wood pole and forms link for connecting to pintle hook on truck. Inside diameter of pintle eye ring, 2⅝ inches.

Weight, 31 pounds.

Prices upon request.

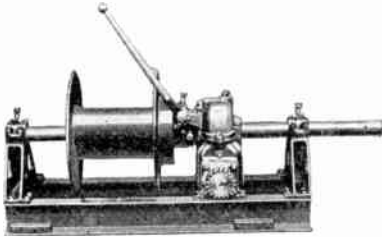
**No. L-12 Single Drum Winches**  
10,000-Pound Capacity



Modified version of the single drum winch, furnished without clutch or brake as winch must be power driven when pulling, raising or lowering load. Ideal for every purpose requiring pulling rope on a drum.

Automatic winch worm brake is standard equipment. Drum measures 12 inches between flanges; holds 600 feet of 1/2-inch steel cable. Weight, approximately 430 pounds.

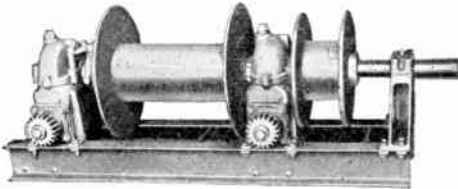
**Model L-12-CD Single Drum Winches**  
10,000-Pound Capacity



Basically the same as Model L-12 winch except that it is equipped with clutch and brake and free spooling drum.

Automatic winch worm brake is standard. Drum measures 12 inches between flanges; holds 600 feet of 1/2-inch steel cable. Weight, approximately 516 pounds.

**Double Drum Winches**  
Models WD-126 and WD-186



An exceptionally sturdy double drum winch. Large drum measures 18 inches between flanges; holds 909 feet of 1/2-inch steel cable, and is furnished with clutch and brake.

Small drum, which may be operated independently, is available in 6-inch size. Large drum on Model WD-126 measures 12 inches; small drum measures 6 inches.

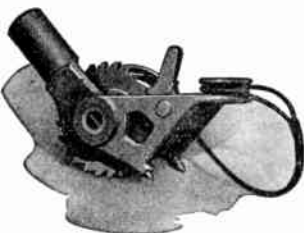
Automatic winch worm brake standard on both units. Weight, approximately 880 pounds.

**Model CR Collapsible Power Reels**

Picks up loose wire in neat, compact roll. Attaches to winch by means of pin type socket.

Cast of aluminum.

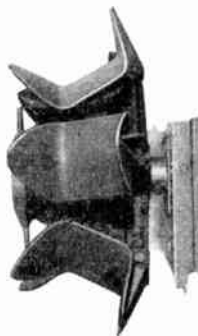
**Pole Binders**



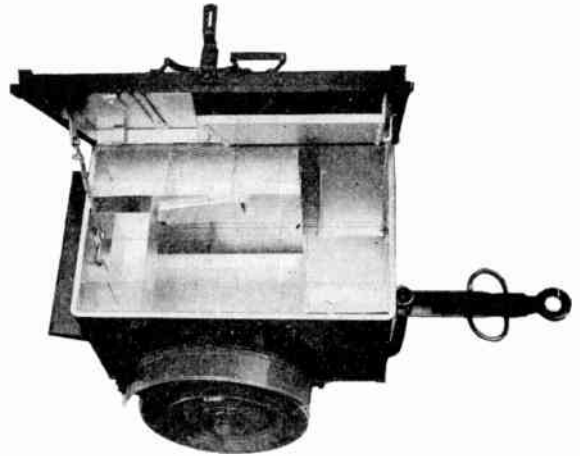
A small winch with a ratchet type holding attachment. For all bulky loads.

Furnished with 18 feet of 5/16-inch steel cable, carried on drum.

Weight, 18 1/2 pounds.



**Model S Cable Splicer's Carts**  
1000-Pound Capacity



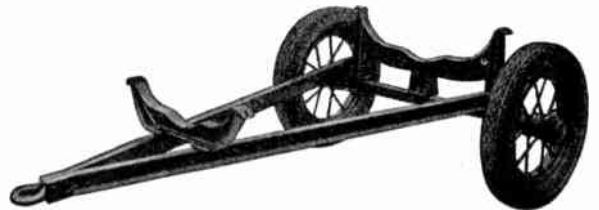
An all steel, compact, rugged, and theft-proof cart. Compartments provide a place for every tool within easy reach of the splicer. A folding leg supports the front end of the cart when parked.

Dimensions: overall length, 74 inches; height, 41 inches; axle, 1 1/4-inch square; tread, 34 inches.

Has steel disc wheels; Timken bearings; tires 4:00x18, 4-ply.

Weight, 480 pounds.

**Model 1775 Pole Dinkies**  
1-Ton Capacity



For light construction or repair work.

Triangular shaped tongue is two 3-inch, 5-pound channel beams. Bolsters are cast steel. Overall length, 104 inches. Axle is heat treated, high carbon steel 2 inches square.

Tires, 6.00x16 singles 6-ply or 6.00x20 singles 6-ply. Tread, 56 inches.

Weight, 390 pounds.

**Winch Line Hooks**



For attaching two wire rope lines as used on truck winches.

It attaches easily and quickly to a line or loop and holds firmly until the pole is set. Slack in the line then permits detaching from ground with pike pole.

As line must be threaded through derrick sheave a hook that detaches easily increases the efficiency of the line crew.

Weight, 4 1/2 pounds.

**Safety Hooks**



Used with derrick and truck winch when raising derrick to operating position. Line is passed over spindle bar and threaded through the derrick sheave then attached to the safety hook. Winch power will then raise the derrick so it can be bolted in place by the linemen.

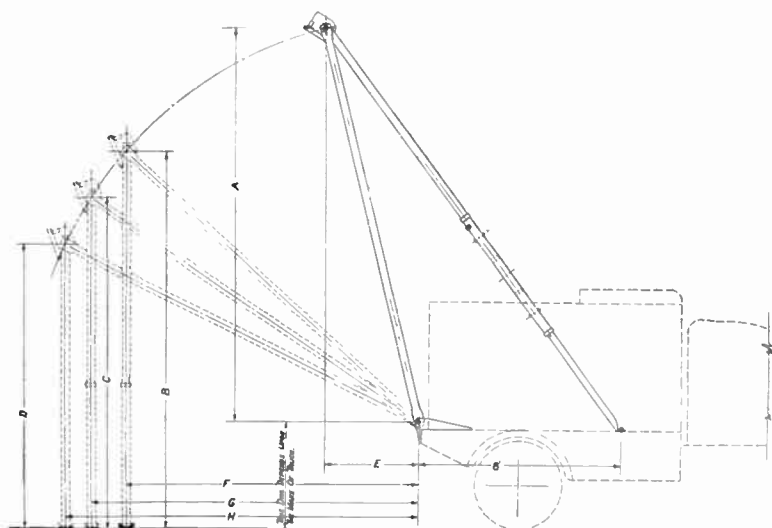
Hook is forged steel, designed so that the heaviest load is carried on the heavy section of the hook.

Weight, 3 1/2 pounds.

Prices upon Request

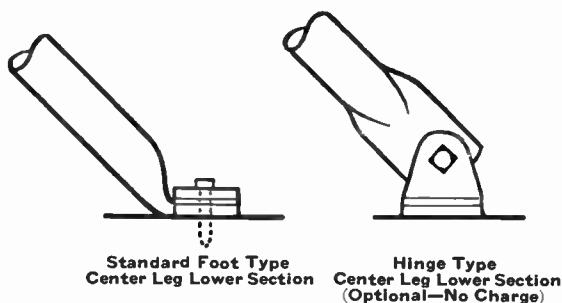
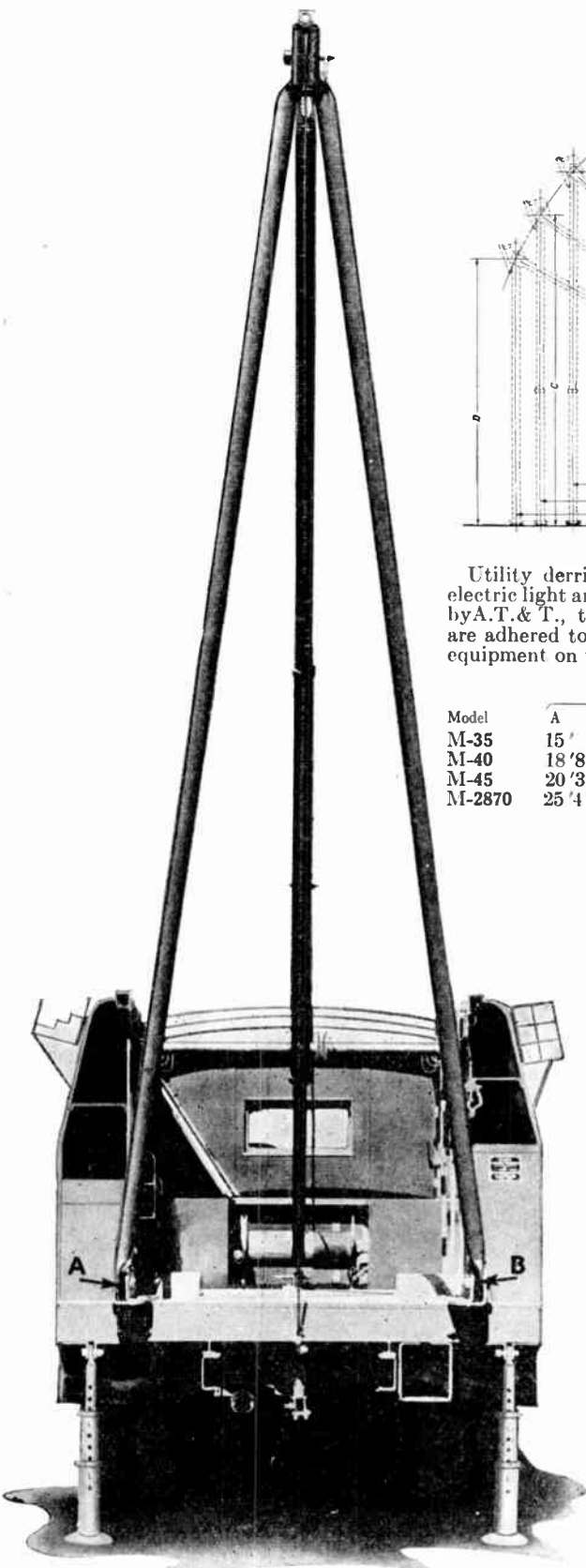
## Utility Derricks Middle Type

Models M-35, M-40, M-45, and M-2870



Utility derricks have kept pace with modern telephone, telegraph, and electric light and power line construction and maintenance methods. Designed by A.T. & T., the world's largest user of pole derricks, their specifications are adhered to in every detail of manufacture. Utility derricks are standard equipment on the majority of Bell system line construction trucks.

Model	COMPARISON DERRICK DIMENSIONS ASSEMBLED							
	A	B	C	D	E	F	G	H
M-35	15'	14'6"	12'9"	11'	3'9"	11'6"	12'11"	13'11"
M-40	18'8"	16'11"	13'11"	11'	3'5"	14'9"	16'3"	17'8"
M-45	20'3"	18'10"	13'10"	11'	6'9"	15'5"	19'1"	20'5"
M-2870	25'4"	21'5"	16'5"	13'7"	6'	19'6"	23'1"	24'4"



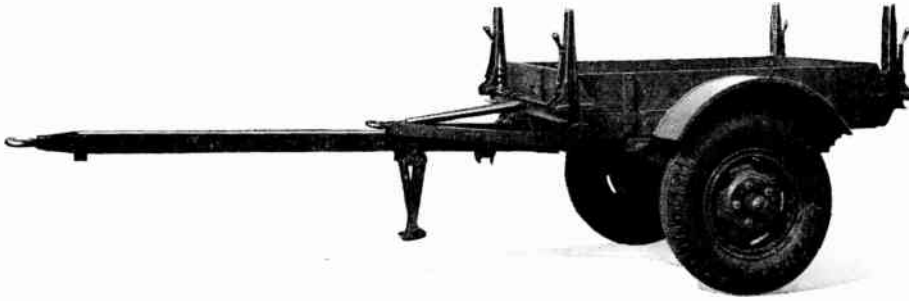
Available in four models: The M-35 for poles up to 35 feet in length, the M-40 for poles up to 45 feet in length, the M-45 for poles up to 55 feet in length, and the M-2870 for poles up to 70 feet in length.

Each derrick is designed and built to insure an ample reserve of strength for the safety of men and equipment. All models can be furnished with telescoping side legs at slight additional cost.

	LIFTING CAPACITIES, POUNDS			
	M-35	M-40	M-45	M-2870
Ground Position, Center Leg, Fully Telescoped	10000	10000	12000	13500
Ground Position, Center Leg, Fully Extended	6000	6000	7200	10000
Truck Position	2500	3000	4000	5000



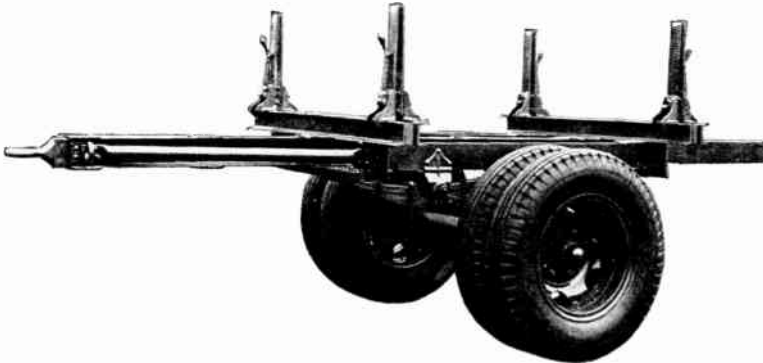
**Model P8T Combination Cargo and Pole Trailers**



The most complete combination, dual purpose trailer thus far developed.

Available with or without fenders, side boards, pole carrying bolsters, load binders, brakes, or extension tongue.

Capacity from 4200 to 9800 pounds depending on tire size.

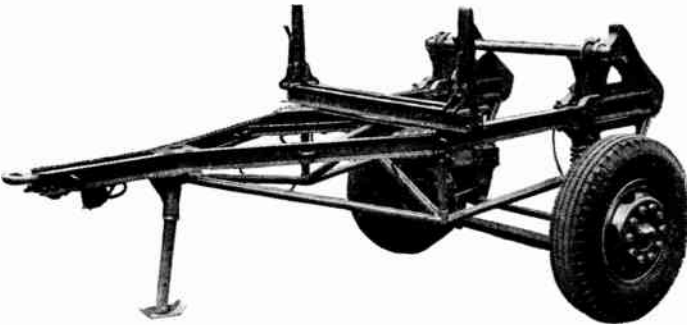


**Models M and H Heavy Duty Pole Trailers**

**3 and 5-Ton Capacities**

Exceptionally rugged. Built for hard usage and long trailer life.

Construction features include extension type tongue, adjustable cam locking uprights, heavy duty wheel bearings, and overall safety factors 50 per cent in excess of actual rated capacity.



**Combination Cable Reel and Pole Trailers**

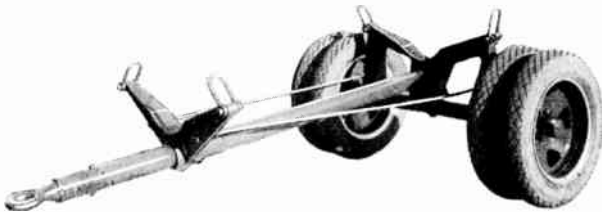
**Models PCP and W-PCP**

An easily convertible cable reel and pole trailer. Converted by using simple hand tools.

Ideal for the utility whose requirements do not demand full-time use of two separate units. Model PCP handles cable reels from 34 to 38 inches and Model W-PCP, reels from 44 to 48 inches in width.

Furnished complete with set of bolsters, cam locking uprights, and cable reel saddles.

**No. 1485 Pole Dinkies**



All steel especially constructed for the exceptionally hard service of hauling poles. Wide tread permits high speed hauling when empty, without danger of it turning over. Tubular type axle gives maximum strength with least possible weight. Capacity, 3 to 4 tons.

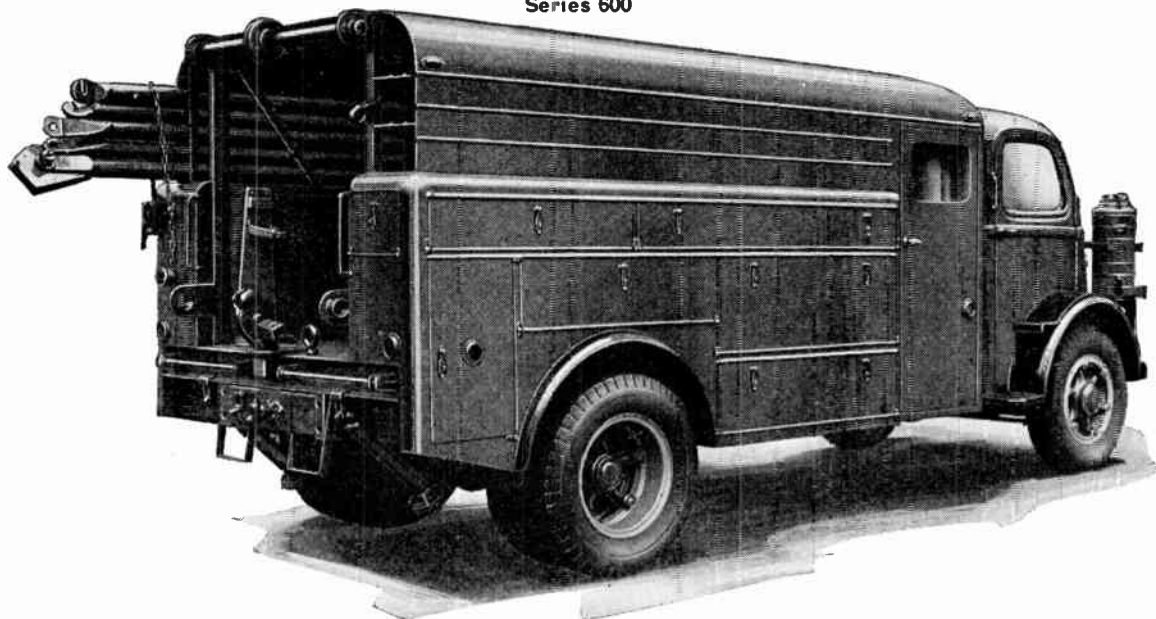
**No. 1485-A Pole Dinkies**



For high speed hauling and rugged service. Has tubular tongue and axle to insure the greatest strength with a minimum of weight. Rear bunk balances trailer. Permits easier handling when empty. Capacity, 3 to 4 tons.

**Write for Complete Information and Prices**

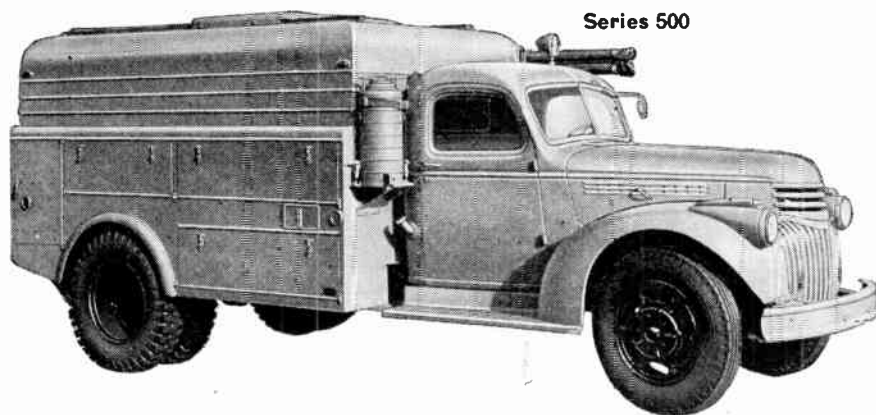
## Powers Truck Bodies For Construction and General Maintenance Series 600



**Series 600C Line Construction and General Maintenance Body**

Designed for efficiency and crew comfort. Powers' engineering and experience in building line bodies for utilities is the assurance of well-designed, well-balanced equipment, properly arranged to carry all tools and supplies for construction and maintenance. In the Series 600C model, special attention has been given to crew accommodations. A roomy compartment in the forward part of the body seats 4 men, while 3 more ride in the truck cab.

Line construction bodies and all accessories are available as a complete package unit.



**Series 500**

Powers' makes a complete line of standardized bodies for construction and general maintenance service, each model designed and constructed to meet the most exacting requirements.

Series 500 embodies the latest improvements and conveniences suggested by utility engineers and operators. Standard equipment includes a winch and pole derrick. Body comes with either telescopic steel roof or open top with tarpaulin. Models available for all conventional or C.O.E. chassis.

All equipment is carried inside of body.

**Series 500 Line Construction and General Maintenance Body**

Ideal for all types of general service utility work—electric, gas, water, street light maintenance, and telephone. Standardized models also available for plumbing, heating, and other service contractors.

All models of the general service line are available with a 24-foot, two section extension ladder and hinged ladder rack assembly.

Cast aluminum fittings on ladder rack reduce overall weight and permit easy adjustment to fit equipment carried.

### General Service Bodies

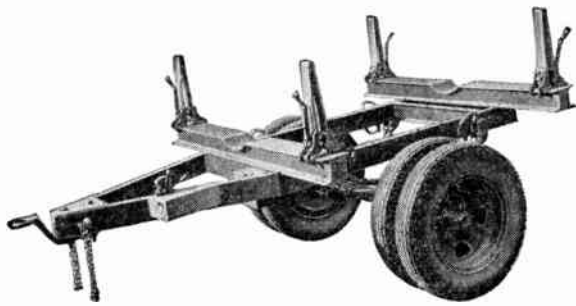


**Series 25-M General Service Body**

- Series 25M.** For 1/2-ton chassis.
- Series 35M.** For 3/4-ton chassis.
- Series 50M.** For 1 1/2-ton chassis.
- Series 55M.** For 1 1/2-ton chassis.
- Series 60M.** For 3/4-ton chassis.
- Series 65M.** For 3/4-ton chassis.

**Complete Bulletins Furnished on Request**

**Powers Trailers  
For Utility Operation**



Model AP-30

Designed to give long, trouble-free service under all conditions. Nos. A-20 (2-ton), A-30 (3-ton), and A-50 (5-ton), have their forward frame ends tapered to a forged

drawbar eye. This type trailer employs the center pole of the load as a tongue by attaching a drawbar clamp to the pole. The drawbar eye is used for pulling trailer when unloaded.

Models AP-30 (3-ton) and AP-50 (5-ton), have an adjustable tubular steel tongue which eliminates use of drawbar. The 5-ton unit, in both models (A-50 and AP-50), is equipped with 6-leaf helper springs. The total load of poles is carried on the trailer in all models, thus permitting loaded trailer to be handled behind any type of line construction body.

Each of the wide double channel bolsters is equipped with two tension type, adjustable slide cam locking stanchions, and center pole saddle.

The spring suspension and mounting of axle is designed to carry maximum loads and to take care of the added stresses of power brake application. Has 10-leaf main springs.

Cab controlled electric or hydraulic brakes are available.

Model	A-20	A-30	A-50	AP-30	AP-50
Rated Capacity	2	3	5	3	5
Size of Rolled Channel Frame	4	5	5	5	5
Size of Bolster Channels	4	5	5	5	5
Size of Axle, Square	2	2 1/2	3	2 1/2	3
Axle Capacity	5000	7000	12000	7000	12000
Size of Tires (Recommended)	32x6	7.50x20	7.00x20	7.50x20	7.00x20
Tread	58	63	66 1/2	63	66 1/2
Overall Width	60	70	80	70	80
Size of Main Springs	5/16x2 1/2	5/16x2 1/2	5/16x2 1/2	5/16x2 1/2	5/16x2 1/2
Size of Helper Springs	None	None	5/16x2 1/2	None	5/16x2 1/2

Tapered to Drawbar Eye Tongue			Adjustable Tabular Tongue	
A-20	A-30	A-50	AP-30	AP-50
2	3	5	3	5
4	5	5	5	5
4	5	5	5	5
2	2 1/2	3	2 1/2	3
5000	7000	12000	7000	12000
32x6	7.50x20	7.00x20	7.50x20	7.00x20
58	63	66 1/2	63	66 1/2
60	70	80	70	80
5/16x2 1/2	5/16x2 1/2	5/16x2 1/2	5/16x2 1/2	5/16x2 1/2
None	None	5/16x2 1/2	None	5/16x2 1/2

**Accessories for Motor Transportation Equipment**

- Winches
- Universal Sheave Blocks
- CR Reels
- Spotlights
- Pole Setting Spool
- Safety Hooks
- Draw Bars
- Power Takeoffs
- Pintle Hooks
- Water Casks
- Road Flares
- Flag and Fusee Kits
- Quick Hooks
- Tire Carriers
- Derricks
- PR Reels
- Ladders
- Caboscopes
- Winch Line Holders
- Pole Binders
- Helper Springs

**Duff-Norton Hy-Power Hydraulic Jacks  
3 to 50-Ton Capacities**



No. 3H9

Used for industrial and railroad service. Operates in both vertical and horizontal positions.

**3 to 12-Ton Sizes.** With extension screw which can be run up quickly by hand to load height, lifting starts with the first stroke of the lever bar. Heavily ribbed base is of one piece malleable iron with integral pump barrel.

**20 to 50-Ton Sizes.** With dual pumps. Speed pump brings head up to load position instantly, switchover to power pump is automatic without changing or missing a lever stroke. Base is of special alloy steel with armor plate steel guards to protect pump barrels.

Ram and cylinder are high carbon seamless steel tubing, accurately machined and ground to gages for close sliding fit. Lowering of load safely controlled at any speed.

No.	Each	Cap. Tons	Closed Ht. In.	Extension Screw Ht. In.	Power Raise In.	Total Ht. In.	Head Diam. In.	Size Base Inches	Handle Lgth. In.	Wt. Lb.
3H9	....	3	8 1/2	3 1/2	6	18	1 3/8	3 3/4 x 6 5/8	33 1/2	16
5H9	....	5	9	4	6 1/4	19 1/4	1 3/8	4 1/8 x 7 1/8	33 1/2	19
8H9	....	8	9	4 1/4	6 1/4	19 1/2	1 3/8	4 9/8 x 7 7/8	33 1/2	22
12H9	....	12	9 1/4	3 3/4	5 1/2	18	1 3/4	4 9/8 x 8 3/8	23 1/2	28
20H11	....	20	11	...	7 3/4	18 3/4	2 1/4	6 1/2 x 7 3/8	23 1/2	50
25H10	....	25	10	...	6 3/4	16 3/4	2 1/4	6 1/2 x 7 3/8	*23 1/2	48
30H11	....	30	11	...	7 1/8	18 1/8	2 5/8	6 1/4 x 8	23 1/2	67
50H11	....	50	11	...	6	17	3 3/8	8 x 9 7/8	23 1/2	110

\*Pinch bar end.

**Duff-Norton Genuine Barrett Ratchet Reel Jacks**

Single Acting — Automatic Lowering—5, 10 and 15-Ton Capacities

Used to handle reels of cable, wire, etc. Hooks will seat 2-inch spindles.

**Nos. 516-MCR and 524-MCR** equipped with adjustable hook lifts for handling reels of different diameters.

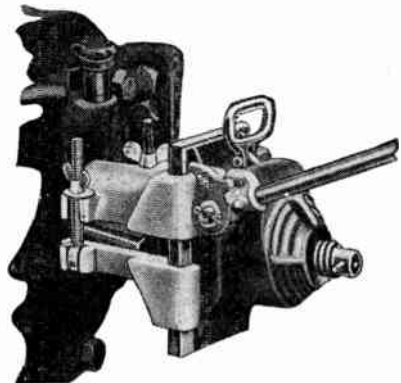
Furnished with double round sockets and steel operating lever, 1x30 in. long. No. 516-MCR for reels 15 to 40 in. in diameter. No. 524-MCR for reels 20 to 60 in. in diameter—has reinforced solid oak base for use outdoors.

**Nos. 1022-CR and 1522-CR** equipped with extra long lifting racks with hooks placed at various heights for handling reels of different sizes. Furnished with single round socket and steel operating lever, 1 1/4 x 62 inches long. No. 1022-CR, hooks located 12, 22 1/2, 33 and 38 inches from ground level for handling reels from 25 to 90 inches in diameter; housing bolted to solid oak base. No. 1522-CR, hooks located 18, 26, 34 and 39 inches from ground level for handling reels from 38 to 90 inches in diameter; reinforced oak base has quick detachable clamps.

No.	516-MCR	524-MCR	1022-CR	1522-CR
Each	\$37.00	50.00	82.00	110.00
Capacity	5 tons	5	10	15
Height	16 inches	21	38	39
Raise	9 inches	14	12	11
Base	5 1/2 x 7 3/4 inches	9 x 19	9 3/4 x 24	10 x 24
Weight	42 pounds	68	100	138



## No. 55 Duff-Norton Pinion Pullers



Used to pull pinions, remove pulleys, small flywheels, etc. from shafts.

Also used for servicing bridge wheels and bearings of overhead cranes.

Pull is uniform around the entire periphery of the pinion. Worm and screw action effects a strong force.

Housing and jaws are electric-steel castings. Worm and screw are case hardened steel. Ball bearings throughout.

No. 55, Weight 50 pounds..... each \$120.00

### Extra Jaws

No.	Each	DIMENSIONS, INCHES			Weight Pounds
		*A	B	†C	
J-553	\$35.00	3½	5½	6¼	25
J-555	42.00	5	8¼	6¼	30
J-557	56.00	7¾	10¾	6¼	39
J-5510	63.00	10	11½	6½	45
J-5511	70.00	11	12½	6½	55

\*Minimum outside diameter of pinion that can be pulled.

†Maximum outside diameter of pinion that can be pulled.

‡Maximum allowable distance of inner edge of pinion from end of shaft.

## No. 500 Duff-Norton Genuine Barrett Pole Jacks

Capacity, 15 Tons

For lifting, straightening or moving poles of all kinds. Eliminates the necessity of digging around stumps before moving or straightening.

Height, 37½ inches.

Raise, 23 inches.

Furnished complete with operating lever, 10 feet of ¾-inch chain and channel base.

Weight, 250 pounds.



No. 500, With Chain..... each \$110.00

No. 500, Without Chain..... each 99.50

## No. 529 Duff-Norton Small Pole Pulling Jacks

Capacity, 5 Tons

Designed especially for lifting or moving small poles, such as are found on rural lines, quickly and easily. Has top lift and chain lift.

Poles are handled by means of the sling, which consists of a forged steel chain and hook. Chain fits into slot in top of jack.

Height, 28 inches. Raise, 18 inches.

Weight, 91 pounds.

No. 529, with Chain..... each \$68.00

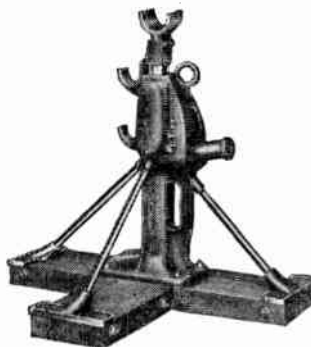
No. 529, without Chain.... each 65.75

Deduct \$1.00 for lever bar if not required.



## No. 1030-CR Duff-Norton Automatic Lowering Cable Reel Jacks

With T Base—10-Ton Capacity



For heavy cable reels 20 to 84 inches in diameter, and for outside work where uneven ground conditions are encountered.

Attached to a T-frame base which has been sectioned to prevent warping. Top hook is for 3-inch diameter spindles, the two lower hooks for 2½-inch diameter spindles.

Height 30 inches. Raise, 14 inches.

Weight, 110 pounds  
No. 1030-CR... each \$92.00

## Duff-Norton Screw Type Cable Reel Jacks

5-Ton Capacity



Used by utility companies. Reliable and efficient. To operate, lift the curved cap to the reel spindle, spin the 3-way nut down to the frame, and insert a ¾-inch steel bar in the 3-way nut and turn.

Lifting hook will accommodate up to 2¼-inch diameter spindles.

No.	520-CR	530-CR
Each.....	\$32.00	42.00
For Reels, Diameter..... inches	42 to 60	60 to 90
Closed Height..... inches	20	30
Raise..... inches	11½	16½
Weight..... pounds	66	90

## Simplex Screw Type Reel or Drum Jacks



No. 1CR



No. 3CR

For economically handling heavy reels. Has one spindle cap for 2¼-inch spindles.

No. 1CR for reels 40 to 60 inches in diameter, No. 2CR for 60 to 92-inch reels. The 3-way nut makes it possible to operate easily and quickly.

No. 3CR for reels 50 to 84 inches in diameter, recommended for heavy duty field work. Braced T-base has area of 240 square inches. Has ratchet lever socket, 42-inch lever.

No.	1CR	2CR	3CR
Each.....	\$32.00	42.00	48.00
Capacity..... tons	5	5	15
Height..... inches	19¾	30½	25½
Lift..... inches	11½	16½	17½
Weight..... pounds	60	88	72

**Simplex Reel or Drum Jacks**  
5 and 10-Ton Capacities  
Ratchet Lowering



No. 320A



No. 322

Equipped with laminated, oil treated, oak bases.

**No. 320A (5 Tons), Single Acting**—For warehouse and shop service. Handles reels from 20 to 60-inch diameters. Has 3 lifting hooks: 1 for 2½-inch and 2 for 2-inch spindles.

**No. 321 (10 Tons), Single Acting**—Also for warehouse and shop service, but handles reels from 20 to 96-inch diameters. Has 5 lifting hooks: 1 for 3½-inch, 1 for 3-inch, and 3 for 2½-inch spindles.

**No. 322 (10 Tons), Double Acting**—T shaped base with the 3-threaded and adjustable steel rods insures a non-rocking foundation for heavy outdoor service. Built with right and left hand bases; base area, 319 square inches. Handles reels from 36 to 84-inch diameters. Has 3 lifting hooks: 1 for 3-inch and 2 for 2½-inch spindles.

No.	Each	Height Inches	Lift Inches	Length Lever	Weight Pounds
320A	\$50.00	21	10	30"	48
321	82.00	34¼	15	60"	108
322	92.00	29	13¾	60"	104

**Simplex Pole Pulling and Pole Straightening Jacks**

For pulling or straightening telephone, telegraph, electric power and trolley poles quickly, without digging, and regardless of size or depth in the ground.

One or two men can pull or straighten poles, pull butts or move loaded poles without interrupting service.

Nos. 325 and 329 are single acting and ratchet lowering.

No. 325 is a 5-ton jack, light, and durable, for pulling 25 and 30-foot poles, straightening poles, and for tightening guy lines. No. 329 is a 15-ton jack.

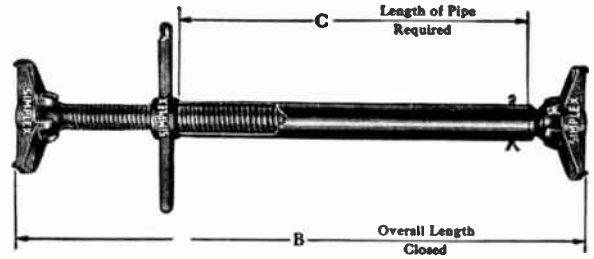


No. 329

Standard equipment of the No. 325: a 4-foot steel pinch bar lever; 5-foot steel chain; an 8x15-inch steel channel base; 8-foot pike pole, equipped with a malleable iron forked cap for biting into wood for straightening poles. Standard equipment of the No. 329: an 8-foot scarf-welded BBB steel chain, fitted with pear-shaped link; a 10x24-inch I-beam base with hand hole; and a 5-foot steel lever bar.

No.	325	329
Each	\$78.00	110.00
Capacity	5	15
Height	50	37¾
Lift	36	22
Weight of Jack	34	95
Weight Complete	98	193

**Simplex Drop-Forged Steel Trench Braces**



Complete with Pipe

Constructed entirely of steel drop forgings. The safety lever nut is blunt, which prevents injuries and damage. The ball and socket joints at each end permit quick adjustment and tight gripping at all angles. Three way nuts can be furnished in lieu of lever nuts at no extra cost.

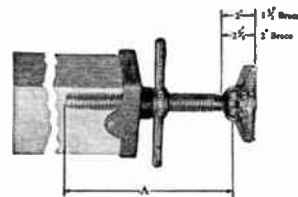
**Specifications Complete with Pipe**

No.	Per Dozen	Pipe and Screw Diam. Inches	A Length of Screw Inches	B Length of Brace Closed Inches	C Length of Pipe Inches	Safe Extension of Screw Inches	Wt., Lb. per Doz. with Pipe
2	\$69.00	1½	12	18	10½	7	193
3	72.00	1½	14	21	13½	9	210
4	72.00	1½	14	24	16½	9	218
5	78.00	1½	16	27	19½	10	235
6	78.00	1½	16	30	22½	10	243
10	153.00	2	18	36	26	10	480
11	156.00	2	18	42	32	10	502
12	159.00	2	18	48	38	10	524
13	162.00	2	18	54	44	10	545
14	165.00	2	18	60	50	10	567

**Specifications without Pipe**

No.	Without Pipe per Dozen	Screw Ends Only per Dozen	Socket Butts Only per Dozen	Diameter Screw Inches	Length Screw Inches	Safe Extension of Screw Inches	Weight Pounds per Dozen
16	\$60.00	\$45.00	\$15.00	1½	12	7	164
17	63.00	48.00	15.00	1½	14	9	173
18	66.00	51.00	15.00	1½	16	10	182
20	135.00	99.00	36.00	2	18	10	385

**Simplex Drop-Forged Timber Braces**



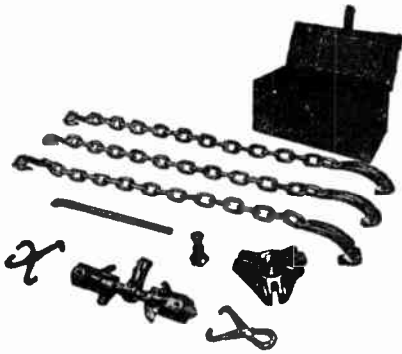
Especially valuable and practical for wide and deep trenches; also for foundation and subway work.

The screw ends are the same as the Simplex Trench Braces. Timbers are not furnished.

Three-way nuts can be furnished in lieu of lever nuts at no extra charge.

No.	21	22	24	25
Per Dozen Sets	\$70.50	\$78.00	\$129.00	\$144.00
Timber Caps. per doz.	22.50	30.00	30.00	45.00
Diameter Screw	1½	1½	2	2
A, Length Screw	14	14	18	18
Size Timber Caps.	4x4	6x6	6x6	8x8
Weight per Doz.	133	169	343	353

## Simplex Util-A-Tools



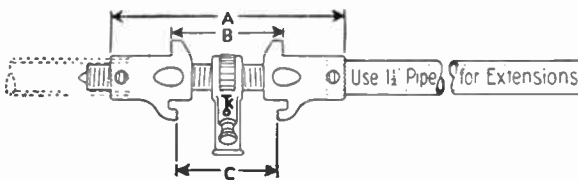
This tool pushes objects apart on the drop forged and corrugated nut ends, or on pipes inserted in nut wells or on the spreading lugs.

It pulls together, using chains with the sky hooks, which are inserted in the nut holes, or on clamping lugs.

It lifts when the triangular snap-on base is attached. Pulls spoked or solid center wheels and gears by attaching the three-way chain base, centering the live center in the shaft after removing the nut and connecting the three chains with the base and object to be pulled.

Util-A-Tool clamps parts for welding or assembly; straightens bent objects; bends pipe and structural steel members; loosens and pulls frozen objects; tensions guy wires; holds down portable machines, etc.

Specifications



Dimension A.....	inches	9 1/4
Dimension B.....	inches	3 1/2
Dimension C.....	inches	2 3/4
Capacity, on Lugs of Nuts.....	tons	2 1/2
Rated Capacity.....	tons	10

No.	Prices				
	610	612	614	616	618
Each.....	\$18.50	19.00	19.50	20.00	20.50
Length Screw.....inches	10	12	14	16	18
Screw Travel.....inches	4 3/4	6 3/4	8 3/4	10 3/4	12 3/4
Weight.....pounds	11	12	13	14	15

### Util-a-Tool Maintenance Sets

Set consists of the following:

*No. 610 Simplex Util-A-Tool.....	each	\$18.50
Sky Hooks (2), Drop Forged, Chrome Nickel Steel.....		4.80
3-Way Base, Drop Forged Steel, Heat Treated.....	each	5.50
No. 3-A Spreader Jack.....	each	3.40
1/2x40-Inch Heat Treated Chains (3), Fitted with Drop Forged Grab Hooks and Grab Claws.....		18.50
3/4 Inch Round by 18 Inches Long Chisel Pointed Lever Bar, Drop Forged, Heat Treated.....	each	1.00
18x8x8-Inch Steel Tool Box for Carrying Set.....	each	4.30
Complete Set with Tool Box; Weight, 78 Pounds.....	each	56.00

\*The Nos. 612, 614, 616 or 618 may be substituted in the maintenance set (see prices above). The jacks may be purchased with any of the equipment.

Stud links (3), drop forged steel, heat treated, \$3.30.

## Simplex-Jenny Center Hole Hydraulic Pullers

Used for pulling stern tubes of ships, cylinder liners, pistons, valve seats, wrist pins, bushings, wheels, gears, propellers, boiler tubes, shafts, etc. Used in shipyards for pulling-in coupling bolts through propeller shaft flanges, assuring a tight fit. Also pushes, lifts, and can easily be rigged up to press.

Will stretch or part any mild steel rod that can fit through the center hole; alloy steel pull rods or puller stems are recommended.

Operates straight, vertically or horizontally without side thrust or self-binding friction and without need for any other equipment or rigging. Is its own back-up and is self-supporting because of its center hole construction.

Tubular ram is raised or pushed out by operating the pump. It is a self-contained unit made of tough, heat-treated steel throughout. Self-retracting when the release valve is opened reducing set-up time.

Drilled and tapped for pressure gauge which can be furnished when specified. This gauge accurately shows the tonnage developed and is useful in testing tensile strength.

**No. 303.** Single pump type used to pull cylinder liners, to form ship and boiler plates and to straighten out bulges in plates. Pulls bulkheads together, structural members or double bottoms for welding or riveting; eliminates use of impact wrenches, air hose. Pulls off bolts, pins, etc.

**No. 606.** Double pump type, high and low speed, can be operated separately, alternately or together. Designed for long and heavy pulls. Used in shipyards, mines, railroad shops, oil fields, construction and general industry. Also used for pulling in utility service pipe.

**No. 803 and No. 1003.** Single pump type. Used to pull bushings, cutless bearings, cylinder liners, pistons, wrist pins, valve seats, keys, wheels, sprockets, gears, boiler tubes, pipes, etc. In shipyards, used for pressing on and pulling off propellers. Length of lever, 19 inches.

Use only Simplex-Jenny Hydraulic Oil. (De-waxed—pour test minus 5°F.)

No.	303	606	803	1003
Each.....	\$130.00	225.00	175.00	175.00
Capacity.....	30 tons	60	80	100
Diameter Center Hole.....in.	1 1/8	2 1/8	3 1/8	2 1/8
Outside Diameter.....inches	4 1/4	6 1/2	7 1/4	7 1/4
Height.....inches	9 1/8	14	10	10
Travel.....inches	3 1/4	6	3 1/4	3 1/4
Oil.....	1 1/4 pints	4	2	3
Weight.....	32 pounds	92	75	72

Price of lifting cap on application.

If gauge is desired, add \$23.75 to price.

### No. 10010 Simplex-Jenny Center Hole Hydraulic Pullers

**Heavy Duty, 100 ton,** double pump unit is especially designed for pulling in the stern tubes of all types of ships. Is also used for heavy bushing jobs. Valve gears and pistons can be pulled from the largest sump or slush pumps in a fraction of the time required by old methods. Stern tubes are installed in hulls using two Simplex-Jenny center hole hydraulic pullers, with two 2-inch diameter alloy steel pull rods. Tonnage developed on these jobs ranges from 75 to 200 tons.

Length of lever, 19 inches. A pressure gauge, calibrated in tons for direct reading, is furnished as standard equipment.

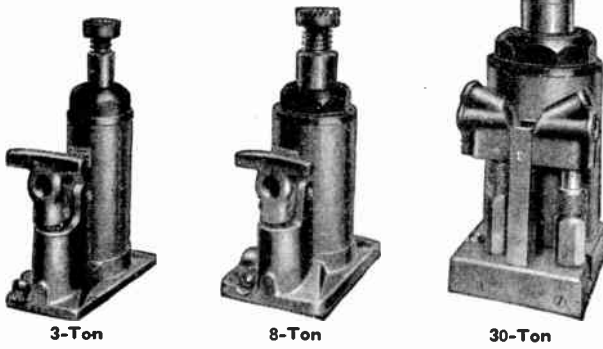
Lifting cap available. Use only Simplex-Jenny Hydraulic Oil. (De-waxed—pour test minus 5°F.)

No. 10010.....	each	\$405.00
Capacity.....	100 tons	
Diameter Center Hole.....	inches	2 3/4
Height.....	inches	19 1/2
Travel.....	inches	10
Oil.....	pints	10
Weight.....	pounds	225





**Simplex Heavy Duty Hydraulic Jacks**



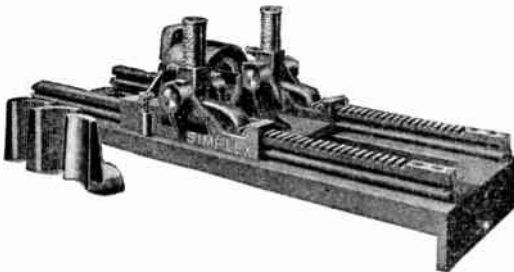
Drop-forged cap and machined steel piston. Bases of 30, 50, and 100-ton jacks are of special analysis solid steel bar stock; other jacks have pressure tested malleable iron bases. All jacks except 20, 30, 50 and 100-ton have screw extensions. Length lever, 20 inches. Convenient carrying handle.

Nos. 30HJ, 50HJ, and 100HJ have high and low speed pumps arranged in tandem. Pumps can be operated singly or in unison. Double sockets for operation in close quarters.

No.	Each	Cap. Tons	Low Height Inches	Hydraulic Lift Inches	Extension Screw Inches	Total Height Inches	Weight Pounds
3HJ	\$14.15	3	9	6 <sup>9</sup> / <sub>16</sub>	2	17 <sup>9</sup> / <sub>16</sub>	15
5HJ	16.90	5	9	6 <sup>1</sup> / <sub>2</sub>	3	18 <sup>1</sup> / <sub>2</sub>	18
8HJ	21.00	8	9	6 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>4</sub>	21 <sup>1</sup> / <sub>2</sub>
12HJ	32.15	12	9	6 <sup>1</sup> / <sub>16</sub>	3	18 <sup>1</sup> / <sub>16</sub>	29 <sup>1</sup> / <sub>4</sub>
20HJ	51.00	20	10	6 <sup>7</sup> / <sub>16</sub>	...	16 <sup>7</sup> / <sub>16</sub>	38 <sup>1</sup> / <sub>2</sub>
30HJ	77.00	30	11	7	...	18	65
50HJ	148.25	50	12	7	...	19	115
100HJ	275.00	100	12	6 <sup>1</sup> / <sub>8</sub>	...	18 <sup>1</sup> / <sub>8</sub>	203

**Simplex Double Leverage Pipe Pushing and Pulling Jacks**

15 and 25-Ton Capacities



This jack is constructed with reversible carriages which eliminate the necessity of reversing the complete pipe pusher to pull pipe. Double levers and double track insure accurate and powerful pushing of pipe under paved streets, alleys, tracks, sidewalks, etc. Pipe can be pulled for lead pipe and duct installations, etc.

Equipment: one set of tapered jaws, one pilot, two 4-foot steel lever bars and two steel pipes for extending lever bars. Specify size of jaws and pilot required.

No.	R-332R	R-334R
Each	\$240.00	\$320.00
Extra Jaws..... per set	38.00	49.50
Capacity..... tons	15	25
Travel..... inches	30	28 <sup>1</sup> / <sub>2</sub>
For Pipe Diameter..... inches	3/4-2	2-4
Weight Complete..... pounds	218	321
Weight Jack Only..... pounds	150	208

An adapter, furnished at \$41 additional enables the No. R-334R to push 3/4 to 2-inch pipe.

**Extra Pilots**

Size.....in.	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each.....	\$4.00	4.00	4.00	4.00	6.60	6.60	6.60	6.60	6.60

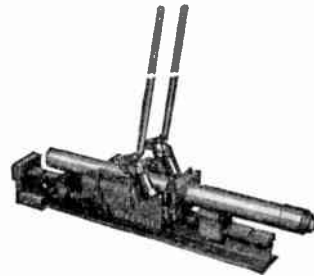
**No. 125 Duff-Norton Pipe Forcing Jacks**  
15-Ton Capacity



Used by many public service companies and contractors for laying water, gas, and other pipe in places difficult of access. Made of high carbon steel and steel castings. Will force pipe, from 3/4 to 4 inches, through favorable ground conditions from 60 to 300 feet. Trench, 9 feet long, required for operation of jack at starting point. Total length, 8 feet. Travel of cage, 7 feet.  
No. 125; Weight, 292 Pounds.....each \$150.00

**No. 790 Greenlee Hydraulic Pipe Pushers**

For underground installation in gas, electric, waterworks, telephone and other fields.



Eliminates tunneling, extensive trenching, back-filling and tamping, tearing up lawns, streets, sidewalks, railroad tracks, repaving.

Hydraulic unit does actual pushing, developing up to 75 tons piston pressure in large model.

One or two men can easily develop pressure needed to push pipe.

Unit is compact and simple to handle. Easy to carry and set up.

For 3/4 to 4-inch pipe, inclusive. Has six different operating speeds to match varying soil conditions, with pushing pressures ranging from 6,500 to 40,000 pounds. Greater speed for light soil, sufficient power for difficult soil conditions.

Power unit travels on notched steel base, supplied in 5 1/2, 6 1/2, 7 1/2 and 8 1/2-foot lengths, permitting pushes of from 4 to 7 feet between changes of the pipe clamp. Each base is equipped with one backing plate and two pipe supports.

Weight of power unit only, 160 pounds.

No. 790, Power Unit Only.....each \$185.00

**Steel Bases, with Pipe Support and Backing Plate**

Length.....feet	5 1/2	6 1/2	7 1/2	8 1/2
Each.....	\$30.00	35.00	40.00	45.00
Weight.....pounds	145	165	185	205

**Quick Acting Clamps**

Pipe Size..in.	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each.....	\$10.00	10.00	10.00	10.75	11.50	12.75	15.00	17.50	22.50

**Oshkosh Diggers**



No. 2051

The blades are made of special alloy steel. Welding is used for attaching the blades instead of riveting, making a durable joint. The fulcrum members are of heavily constructed, channel-shaped, steel forgings.

There are two pivot points for the blades, one on each side. This gives much stronger leverage and greater durability.

Made in two types, with split handles or with two solid handles. The handles are made of straight grained hard wood, 8 feet long.

Measurement marks are placed on the handles so that the workman can easily determine the exact depth of the hole.

The diameter of the circle circumscribed by the digger blades is 6 inches.

No. 2050, Split Handle Type, Wt., 13 Pounds...each \$10.45  
No. 2051, Two Solid Handle Type, Wt., 14 1/2 Lb. each 10.45

## Oshkosh Straight Handle Shovels



BLADE—Black finish; unpolished. Strap length, 22 inches.  
HANDLE—Lacquered; straight from end to end. Diameter, 1 3/16 inches. Packed 6 to a bundle.

### With Carbon Steel Blade Maple Handle

No.	Each	Handle Length Feet	Weight Pounds	Extra Handles		
				No.	Each	Wt. Lb.
867	\$6.90	7	8	993	\$2.25	4
868	7.05	8	9	994	2.85	5
869	7.95	9	10	995	3.90	6
870	8.30	10	11	996	4.95	7
1032	\$7.05	7	8	1005	\$2.70	6
1033	7.25	8	9	1006	3.50	6
1034	8.10	9	10	1007	4.60	7
1035	8.60	10	11	1008	5.85	7

### With Alloy Steel Blade \*Ash or Hickory Handle

No.	Each	Handle Length Feet	Weight Pounds	No.	Each	Wt. Lb.
2032	.....	7	8	2005	.....	6
2033	.....	8	9	2006	.....	6
2034	.....	9	10	2007	.....	7
2035	.....	10	11	2008	.....	7

\*For hickory handle, add letter H to No.

## Oshkosh Western Pattern Post Hole Spoons



Blade, plain black finish. Handle lacquered. Six in bundle.

### With Carbon Steel Blade Maple Handle

No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	Extra Handles		
					No.	Each	Wt. Lb.
859	\$6.90	7	22	10	993	\$2.25	4
860	7.05	8	22	10	994	2.85	5
861	7.95	9	22	11	995	3.90	6
862	8.30	10	22	12	996	4.95	7
1023	\$7.05	7	22	10	1005	\$2.70	6
1024	7.25	8	22	10	1006	3.50	6
1025	8.10	9	22	11	1007	4.60	7
1026	8.60	10	22	12	1008	5.85	7
1027	9.85	12	22	14	1009	7.20	8

### With Alloy Steel Blade \*Ash or Hickory Handle

No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	No.	Each	Wt. Lb.
2023	.....	7	22	10	2005	.....	6
2024	.....	8	22	10	2006	.....	6
2025	.....	9	22	11	2007	.....	7
2026	.....	10	22	12	2008	.....	7
2027	.....	12	22	14	2009	.....	8

\*For hickory handle, add letter H to No.

## Oshkosh Crooked Handle Shovels



BLADE—Black finish; strap length, 22 inches.  
HANDLE—Lacquered; made of selected second-growth northern white ash, tough, strong highland hickory, or hard rock maple. Diameter, 1 3/16 inches.  
Packed 6 to a bundle.

### With Carbon Steel Blade Maple Handle

No.	Each	Handle Length Feet	Weight Pounds	Extra Handles		
				No.	Each	Wt. Lb.
874	\$9.55	7	8	1000B	\$6.55	4
875	10.20	8	9	1000	7.20	5
1040	\$9.55	7	8	1014	\$6.55	6
1041	10.20	8	9	1015	7.20	6
1042	10.90	9	10	1016	8.15	7
1043	11.45	10	11	1017	10.50	7

### With Alloy Steel Blade \*Ash or Hickory Handle

No.	Each	Handle Length Feet	Weight Pounds	No.	Each	Wt. Lb.
2040	.....	7	8	2014	.....	6
2041	.....	8	9	2015	.....	6
2042	.....	9	10	2016	.....	7
2043	.....	10	11	2017	.....	7

\*For hickory handle, add letter H to No.

## Oshkosh Eastern Pattern Post Hole Spoons



### With Carbon Steel Blade Maple Handles

Cat. No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	Extra Handles		
					Cat. No.	Each	Wt. Lb.
859E	\$6.90	7	22	10	993	\$2.25	4
860E	7.05	8	22	10	994	2.85	5
861E	7.95	9	22	11	995	3.90	6
862E	8.30	10	22	11	996	4.95	7
1023E	\$7.05	7	22	10	1005	\$2.70	6
1024E	7.25	8	22	10	1006	3.50	6
1025E	8.10	9	22	11	1007	4.60	7
1026E	8.60	10	22	12	1008	5.85	7
1027E	9.85	12	22	14	1009	7.20	8

### With Alloy Steel Blade \*Ash or Hickory Handles

Cat. No.	Each	Handle Length Feet	Strap Length Inches	Weight Pounds	Cat. No.	Each	Wt. Lb.
2023E	.....	7	22	10	2005	.....	6
2024E	.....	8	22	10	2006	.....	6
2025E	.....	9	22	11	2007	.....	7
2026E	.....	10	22	12	2008	.....	7
2027E	.....	12	22	14	2009	.....	8

\*For hickory handle, add letter H to No.

## Oshkosh Short Handled Shovels



Used for starting and filling in holes.

### With Carbon Steel Blade

The handle is made of Northern white ash, air seasoned.

No.	Each	Style of Blade	Wt. Lb.	Extra Handles		
				No.	Each	Length Ft. Lb.
1090R	\$3.05	Round Point	5	1091	\$1.90	4 1/2 2
1090S	3.05	Square Point	5	1091	1.90	4 1/2 2

### With Alloy Steel Blade

Equipped with fine quality ash handle.

No.	Each	Style of Blade	Wt. Lb.	No.	Each	Length Ft. Lb.
2090R	.....	Round Point	5	2091	.....	4 1/2 2
2090S	.....	Square Point	5	2091	.....	4 1/2 2

## Oshkosh D-Handled Shovels



Used for trench work.

### With Carbon Steel Blade

The handle is second growth Northern white ash and is fitted with a pressed steel D top.

No.	Each	Style of Blade	Wt. Lb.	Extra Handles		
				No.	Each	Wt. Lb.
1092R	\$3.05	Round Point	4	1093	\$1.90	2
1092S	3.05	Square Point	4	1093	1.90	2

### With Alloy Steel Blade

The handle is of clear straight grained ash, sharply bent, and fitted with a steel D top.

No.	Each	Style of Blade	Wt. Lb.	No.	Each	Wt. Lb.
2092R	.....	Round Point	4	2093	.....	2
2092S	.....	Square Point	4	2093	.....	2

**Oshkosh Tamping Bars**



Handle is made of hard rock maple. The tamping head is faced with an iron shoe, and measures 1 3/4 x 1 inches.

No. ....	854	855	856
Each. ....	\$7.35	8.30	9.20
Length.....feet	7	8	9
Weight.....pounds	13	14	16

**Oshkosh Tamping Bars With Extra Heavy Iron Shoe**



Made with hard rock maple handle with 1 1/4 x 1/2-inch steel shoe on tamping face. Tamping face is 1 1/4 inches wide and 3 1/2 inches long.

No. ....	1054	1055	1056
Each. ....	\$8.30	9.10	10.05
Length.....feet	7	8	9
Weight.....pounds	13	15	17

**No. 1044 Oshkosh Electric Tamping Bars**



Made of steel tubing with malleable iron tampers of different size on each end.

Length, 8 feet. Weight, 15 pounds.

No. 1044.....each \$7.70

**Oshkosh Crow and Digging Bars**



Made of special octagon crucible steel. Has 2-inch chisel on one end, pointed on other end.

No. ....	1061	1062	1064	1065	1066
Each. ....	\$7.25	7.55	7.75	8.70	10.30
Size.....	1"x7'	1"x8'	1 1/8"x7'	1 1/8"x8'	1 1/8"x9'
Weight..pounds	20	23	26	28	31

**Oshkosh Tamping and Digging Bars**



Made of special octagon crucible steel, tough and stiff. Has 2-inch chisel on one end, malleable iron tamper on other end.

No. ....	1071	1072	1074	1075
Each. ....	\$7.55	7.90	8.20	9.30
Size.....	1"x7'	1"x8'	1 1/8"x7'	1 1/8"x8'
Weight.....pounds	21	24	27	30

**Oshkosh Plain Digging Bars**



Made of special octagon crucible steel, tough and stiff. Has 2-inch chisel on one end.

No. ....	1081	1082	1084	1085
Each. ....	\$6.80	7.75	7.90	8.60
Size.....	1"x7'	1"x8'	1 1/8"x7'	1 1/8"x8'
Weight.....pounds	20	23	26	28

**No. 852 Oshkosh Digging Spuds with Tamper**



A light, evenly balanced digging tool. Handle is made of steel tubing with a tamping head of malleable iron, and the blade and socket are of one piece of forged high carbon steel. Blade measures 3 1/2 inches wide.

Length, 9 feet. Weight, 20 pounds.

No. 852.....each \$12.50

**Oshkosh Pike Poles**



Handle is of old growth yellow Washington fir; only straight, close-grained fir is used.

Pike is of special steel made of one piece with upset face, which takes end thrust and distributes it over the entire end of the handle. Pike is set in oil and a rivet runs through malleable iron ferrule, handle, and pike to further secure them. Pike projects 4 inches.

**Standard Light Pattern**

No.	Each	HANDLE		Wt. Lb.	Extra Handles		Wt. Lb.
		Diam. In.	Lgth. Ft.		No.	Each	
806	\$5.80	2	12	8	971	\$5.15	7
807	6.15	2	14	10	972	5.55	9
808	6.85	2	16	11	973	6.15	11

**A. T. & T. Pattern**

818	\$7.45	*2 1/2	12	13	982	\$6.75	12
819	8.25	*2 1/2	14	14	983	7.65	13
820	8.75	*2 1/2	16	15	984	8.10	14
821	9.85	*2 1/2	18	18	985	9.10	16
822	10.95	*2 1/2	20	20	986	10.35	19

\*Diameter at center; tapers to 2 inches at both ends.

**No. 10 Oshkosh Pike Pole Guards**

For guarding the hazardous point on pike poles. Will fit either the 2-inch or 2 1/2-inch pike poles.

The guard works easily and fastens securely in either the guarded or open position. When in the unguarded position, the guard is completely out of the way, snugly fitted around the pole. When in the guarded position, it automatically locks in place and provides complete protection from the pike point.

Shipping weight, 3/4 pound.

No. 10.....each \$2.10



**Oshkosh Special Pike Pole Coating**

Oshkosh Pike Poles finished with this specially developed coating prevent loss of time caused by splinters and splinters.

It gives a smooth, hard, transparent coating.

This coating keeps the grain from raising.

It is a non-conductor of electricity.

Can be applied at a slight additional charge.

**No. 740 Oshkosh Fir Deadman Wood Pole Supports**



Of clear, straight grained fir. Measures 3x3 inches square, 8 1/2 feet over all. Steel fork has three prongs.

No. 740, Weight, 40 Pounds.....each \$24.10

**Oshkosh Wood Mule Pole Supports**

Made of Washington fir; 4 inches in diameter, tapers slightly to each end. Ends banded; with forged crucible steel fork in one end, pike in other end.

No. ....	845	846	847
Each. ....	\$23.25	24.10	26.30
Size.....feet	6	7	8
Weight.....pounds	23	26	29

**No. 848 Oshkosh Standard Deadman Wood Pole Supports**

**A.T.&T. Pattern**



Made of rock maple with rounded edges. Each end is banded. Steel fork is fastened to upper end; pike in lower end. Thickness, 2 inches; width, 4 inches.

No. 848, Size 8 Feet, Weight 29 Pounds.....each \$26.30



## Oshkosh Cant Hooks

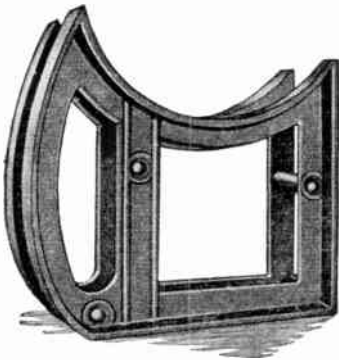


Malleable iron socket, clamp, toe ring. Crucible steel duck bill. Stop keeps hook from falling back onto handle and injuring fingers.

### With Hard Rock Maple Handles

No.	Each	HANDLE		Wt., Lb. per Doz.	Extra Handles		
		Diam. In.	Lgth. Ft.		No.	Each	Wt., Lb. per Doz.
188A	\$5.65	2 1/4	4	80	541	\$1.90	33
189A	5.90	2 1/4	4 1/2	85	542	2.05	35
188	5.90	2 1/2	4	80	544	2.05	40
189	6.25	2 1/2	4 1/2	85	545	2.40	45
<b>With Hickory Handles</b>							
199A	\$7.85	2 1/4	4	86	572	\$2.40	38
200A	8.20	2 1/4	4 1/2	90	573	2.55	40
199	8.20	2 1/2	4	91	575	2.55	45
200	8.55	2 1/2	4 1/2	97	576	2.70	50

## Leach E-Z-Up Pole Cradles



For lifting poles in position for framing.

Operated by one man without any lifting strain.

Uses the simple cam principle of rocking the pole off the ground and up.

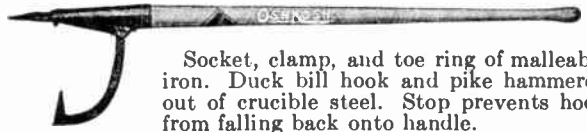
Made of malleable iron.

To operate, place the cradle against the pole and drop the point of a cant hook or peavey between the two rockers. Then catch the hook in the opposite side of the pole, pull back on the handle.

The pole can be rotated in the saddle of the cradle by using the cant hook.

Each, Weight, approximately 26 pounds. \$25.00

## Oshkosh Malleable Socket Peavies



Socket, clamp, and toe ring of malleable iron. Duck bill hook and pike hammered out of crucible steel. Stop prevents hook from falling back onto handle.

### With Hard Rock Maple Handles

No.	Per Dozen	HANDLE		Wt. Lb.	Extra Handles		
		Diam. In.	Lgth. Ft.		No.	Per Dozen	Wt. Lb.
121	\$6.90	2 1/4	4	7	541	\$1.90	3
122	7.15	2 1/4	4 1/2	7	542	2.05	3
124	7.15	2 1/2	4	9	544	2.05	3
125	7.30	2 1/2	4 1/2	9	545	2.40	4
<b>With Second Growth Hickory Handles</b>							
134	\$9.00	2 1/4	4	8	572	\$2.40	3
135	9.45	2 1/4	4 1/2	8	573	2.55	3
137	9.45	2 1/2	4	9	575	2.55	4
138	9.95	2 1/2	4 1/2	10	576	2.70	4

## Oshkosh Carrying Hooks Chisel Point Pattern



For carrying poles. Rock maple handle; malleable clasp. Crucible steel hooks attached to handle with malleable swivel.

No.	Each	HANDLE		Wt. Lb. Per Doz.	Extra Handles		
		Diam. In.	Lgth. Ft.		No.	Each	Wt. Lb. per Doz.
295	\$6.35	2 1/2	4	85	593	\$2.05	40
296	6.60	2 1/2	4 1/2	90	594	2.40	45
297	6.90	2 1/2	5	95	595	2.55	50
298	10.25	3	5	145	963	4.10	63
299	10.60	3	6	165	964	4.95	78

## Oshkosh Wood Jenney Pole Supports



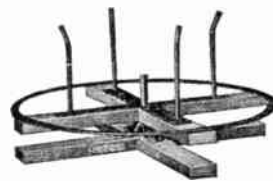
Made of clear, straight-grained fir. Strong and stiff when set up; easily collapsible to a small size for carrying in trucks.

Center or pivot holes for bolt in cross pieces are reinforced with steel bushings. Steel pikes fastened to bottom of each leg stop any tendency to slide. Cross brace is placed high to prevent interference with walking.

Thickness, 1 3/4 inches; width, 3 1/2 inches.

No. ....	842	843	844
Each. ....	\$17.70	20.35	22.35
Size. .... feet	6	7	8
Weight. .... lb.	25	30	35

## No. 902 Oshkosh Plain Pay-Out Reels

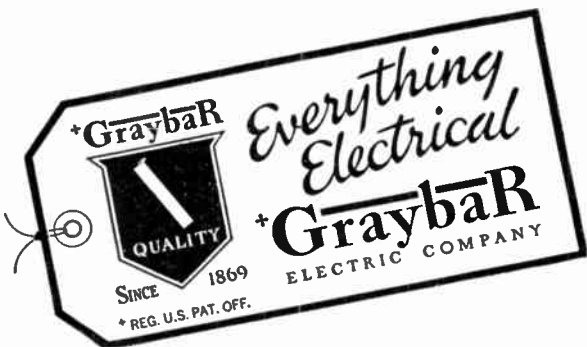


For gang mounting on a wagon when paying out several wires at one time.

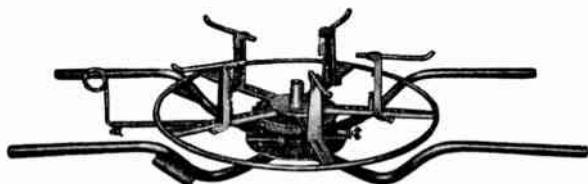
Made of hardwood, braced and reinforced with sheet steel.

Reel pins adjustable for 12, 18, and 24-inch coils.

No. 902, Wt. 40 Lb. .... each \$21.50



**Oshkosh Combination Pay-Out and Take-Up Reels**



As a Pay-Out Reel

A pay-out and take-up reel, all in one. It is lightweight, yet strong and durably constructed. The frame is made of tubing. Easy portability; the guide pins fold flat so that the whole reel is compact and easy to carry or slide in truck.

The guide pins are easily and quickly adjustable to take any size coil of wire from 13 to 27 inches inside diameter, to 34 inches outside diameter.

The automatic brake is another feature. As the wire is pulled the brake releases and the wire pays out freely. The instant tension is released, the brake sets and any possibility of back-lashing is prevented.

For converting into a take-up reel 2 braces are furnished which hold the reel in an upright position. Hand crank attached for ease in taking up wire.

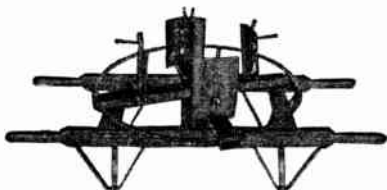
The carrier frame is removable so that the reel can be bolted to a truck. A thumb screw terminal is provided for grounding the reel.

Length overall, 63 inches; width, 34 inches; height overall (guides up), 13 1/4 inches; height overall (guides down) 8 3/4 inches.

Weight, 75 pounds.

Reel, Complete.....each \$100.00  
Reel, less Carrier Frame.....each 80.00

**No. 900 Oshkosh Barrow Reels  
Heavy Western Union Type—With Guards**



Used for heavy wire and heavy work.

Made of hardwood, braced and reinforced with steel. A wide bearing, together with a long pivot and sleeve, allow the reel to turn easily. Rests on strong, steel legs.

Reel pins adjustable for 12, 18, and 24-inch coils.

No. 900, Weight 80 Pounds.....each \$41.75  
No. 901, Extra Pins, Weight 4 Pounds...per set of 4 4.50

**No. 897 Oshkosh Folding Take-Up Reels**



The reel part collapses and automatically throws off the coil at the same time and in an instant is ready for another coil. The frame, made of heavy hardwood, is strong and heavily reinforced throughout and folds up like a hinge.

Reel is made of malleable iron and steel.

It can be taken down in a moment merely pulling the pin out of the shaft, throwing off the coil and folding up the frame.

Take-up, 21 inches. Weight, 42 pounds.

No. 897.....each \$30.35

**Hubbard Wire Stringing Pulleys**

Cadmium Plated

**No. 1240 Pin Type**



Designed to slip over the top of a 1 3/8-inch pin thread for pulling in and sagging conductors.

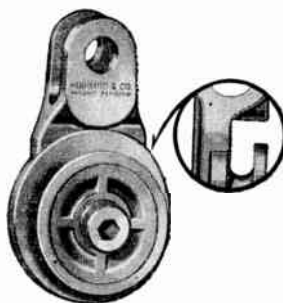
Sheave wheels are equipped with oil retaining bronze bushings.

Cast malleable with cadmium plate.

All surfaces are designed to prevent injury to pin threads or conductors.

No.	Style	Clearance for Conductor Inches	Attach Bolt Size Inches	Approx. Ship. Wt. Lb. per 100
1240	Pin	1 5/32	5/8	335

**No. 1243 Angle Type**



Serves the same purpose as the pin type except that it is designed for attachment to disc or suspension insulators.

Clevis clearance is 7/8-inch and wire capacity is 1 1/2 inch.

No.	Style	Clearance for Conductor Inches	Attach Bolt Size Inches	Approx. Ship. Wt. Lb. per 100
1243	Suspension	1 5/32	5/8	335

Prices upon application.

**Oshkosh Warning Signs**

This warning sign is light in weight, yet durable. Legs are of 1/2-inch high carbon steel. Has 1 1/4-inch flange around edge of lettered side.

Has two hollow handles for adjusting angle of the legs. These handles also serve as flag sockets, and each is equipped with a lantern lock.

Black letters, 5 1/2 inches high, on traffic yellow background.

Height, 43 inches.

Width, 28 inches.

Thickness, 1 1/4 inches.

Size folded, 28x28x1 1/4 inches.

Weight, 23 pounds.

Warning Sign.....each \$11.60



**Coffing Flag Holders and Flags**



Flag Holder is designed to fit all poles. Main body casting and locking handle are made of certified malleable iron. The chain wraps around the pole and hooks into main body of clamp.

Strong coil spring between chain and main body assures tension on locking chain.

Flag is made of 6-ounce army duck. Size, 12x16 inches. Has a 1x18-inch hardwood staff.

Flag Holder.....	each	\$2.40
Flag.....	each	1.15
Flag Holder and Flag.....	each	2.55

## Leach Portable Folding Barricade



A strong, substantial barricade, exceptionally neat in appearance and efficient in operation. Easily and quickly taken down and folded into a small, compact bundle. Stacks easily and safely and takes up only a small space in truck or warehouse.

To quickly set up, open the legs, latch the cross-piece, put in the cross-rail and turn the handle.

The cross-rail is held like a piece of wood in a vise which allows the use of various thicknesses of wood from 1 to 3 inches.

Jaws are not equipped with teeth, thus, they do not chew up the wood cross-rails.

Equipped with extension swivel which is used to erect a square barricade.

Features a flag socket in the screw handle which is 4½ inches deep to hold a danger or warning flag.

Furnished with a latern lock welded to the screw handle. Orange finish.

Height.....inches	32	42
Per pair.....	\$12.30	\$15.25
Extension Swivel.....	2.90	2.90
Width, Bottom Open.....inches	20 to 23	25 to 29
Size, Folded.....inches	3x2x35	3x2x44
Weight.....pounds	12½	16

## Central Linemen's Red Flare Lights



Used for quick general illumination and as warning signal in case of highway accidents or breakdowns. Also used for parades, rallies, and outdoor celebrations.

Burns with a brilliant red light.

Equipped with spike point and friction cap ignition.

No. 2720, packed in case of 72 (Spike Point), weight, 50 pounds.

No. 2730, packed in case of 36 (Spike Point), weight, 34 pounds.

No. 2720, Burns for 20 Minutes.....per case \$12.25

No. 2730, Burns for 30 Minutes.....per case 7.50

## Central Linemen's Yellow Flare Lights



Used as an emergency light and as a warning signal in case of truck breakdowns or when power lines are down on highway.

Burns with a brilliant silvery yellow light.

Not effected by wind, rain or snow.

Equipped with friction cap ignition, spike point, and removable handle.

No. 3020, packed in case of 72 (12 cartons), weight, 62 pounds.

No. 3030, packed in case of 36 (6 cartons), weight 45 pounds.

No. 3020, Burns for 20 Minutes.....per case \$13.50

No. 3030, Burns for 30 Minutes.....per case 9.75

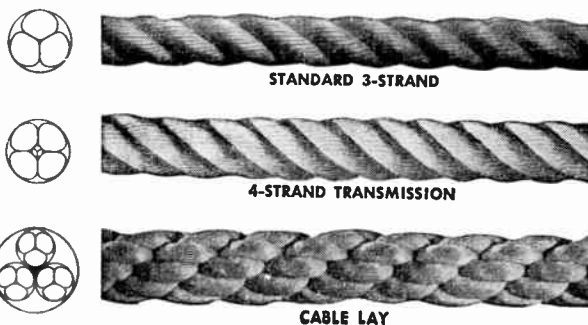
## Amco All Weather Manila Rope



This is the very best manila rope. It is made entirely of select long fiber Phillipine Hemp by the American Manufacturing Company, Brooklyn, New York, one of the world's largest cordage mills. Amco All Weather Manila Rope is treated with a special waterproofing and rotproofing solution to insure long life and serviceability. It is made in a full range of sizes for all utility and industrial uses.

Also available American Brand Pure Manila Rope—Regular No. 1 Rope.

### Standard and Special Lays in a Full Range of Sizes



### Weight and Strength Chart

Diam. In.	Circumference In.	Approx. Gross Weight per Coil	Approx. Length per Coil Feet	Approx. Weight per Foot Pound	Approx. Weight per Foot Lb.	Minimum Tensile Strength Lb.	Safe Working Strains Lb.
3/16	5/8	45	3000	66.6	.015	450	90
1/4	3/4	55	2750	50.0	.020	600	120
5/16	1	65	2250	34.5	.029	1000	200
3/8	1 1/8	66	1620	24.4	.041	1350	270
7/16	1 1/4	63	1200	19.0	.053	1750	350
15/32	1 3/8	75	1200	16.0	.063	2250	450
1/2	1 1/2	90	1200	13.3	.075	2650	530
9/16	1 3/4	125	1200	9.61	.104	3450	690
5/8	2	160	1200	7.50	.133	4400	880
3/4	2 1/4	200	1200	6.00	.167	5400	1080
13/16	2 1/2	234	1200	5.13	.195	6500	1300
7/8	2 3/4	270	1200	4.45	.225	7700	1540
1	3	324	1200	3.71	.270	9000	1800
1 1/16	3 1/4	375	1200	3.20	.313	10500	2100
1 1/8	3 1/2	432	1200	2.78	.360	12000	2400
1 1/4	3 3/4	502	1200	2.40	.418	13500	2700
1 1/2	4	576	1200	2.09	.480	15000	3000
1 5/8	4 1/2	720	1200	1.67	.600	18500	3700
1 3/4	5	893	1200	1.34	.744	22500	4500
1 7/8	5 1/2	1073	1200	1.12	.895	26500	5300
2	6	1290	1200	.93	1.08	31000	6200

Larger size specifications upon request.

Four-strand weights about 7 per cent more than 3 strand.



**Oshkosh Safety Extension Ladders**

A lightweight, safety extension ladder designed expressly for public utilities.

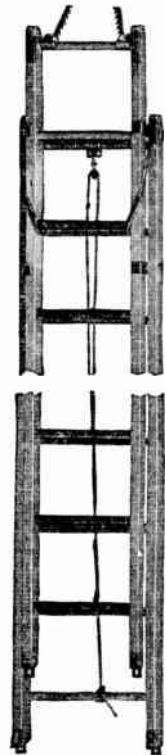
Equipped with an automatic safety lock or latch. This lock is so arranged that when pulling on the raising rope, the lock is lifted out of position. The instant the strain on the rope is slackened, the lock drops in place. In lowering, the extension must be lowered slowly. It cannot accidentally drop.

The side rails are made from straight grained, properly seasoned aeroplane spruce.

The rungs are made from tough mountain hickory, straight grained. Each rung has a shouldered tenon joint which is pressed tightly into the side rails, assuring a safe, tight fit. The side rails of each section are connected at top, middle, and bottom with steel tie-rods. This combination makes a rugged, durable construction. Either section can be used separately as an individual ladder, both being equipped with safety tips and pikes.

Other safety features include corrugated rubber tips, transparent safety finish, safety pole-grippers, and rubber guarded safety pikes. All metal parts are parkerized. Furnished in full range of lengths in multiples of 2 feet.

Weight, 2 pounds per foot, average.



Lgth. Feet	Each	Lgth. Feet	Each
16	\$29.60	32	\$59.20
18	33.30	34	62.90
20	37.00	36	66.60
22	40.70	38	70.30
24	44.40	40	74.00
26	48.10	42	77.70
28	51.80	44	81.40
30	55.50	46	85.10

**Oshkosh Sectional Ladders**

Each section is 6 feet long, making a handy ladder to have around for miscellaneous uses where a long extension ladder is larger than the need requires.

For small service trucks, one or two of these sections can be hooked on and carried around all the time so that a ladder is always handy for emergency use.

The sections join together interchangeably, lapping 1 foot. One section fits into the other at either end as shown in the illustration. The joint is stiff, solid and secure.

Outside width of top, 16½ inches; inside width of bottom, 17 inches; rungs diameter, 1½ inches; size rails, 1½x2¾ inches.

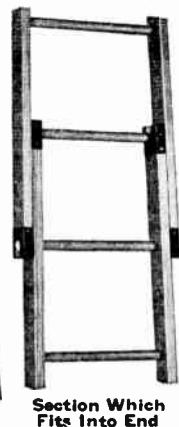
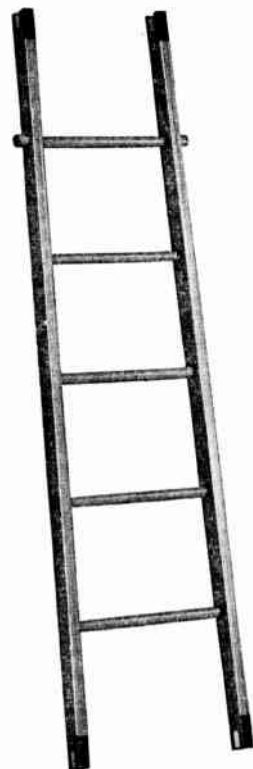
Side rails are selected aeroplane spruce; rungs are straight grained mountain hickory; metals, Parkerized steel.

Special transparent finish.

Rubber pikes at bottom, on special order.

Weight per running foot, 2 pounds.

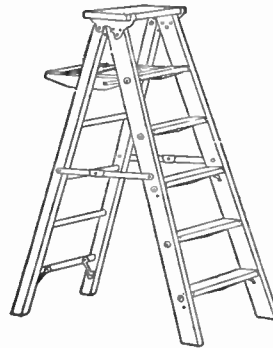
Per Section .....\$9.30



Section Which Fits Into End

**Babcock Mechanics' Step Ladders**

Used by mechanics, electricians, carpenters, painters and masons.



Each step is reinforced by a strong steel rod under step with block in center, forming a truss rod and equipped with strong and durable hinges or ears, securely riveted.

Made of clear stock: 1½-inch hickory rungs. Front, 7⁄8x3 inches; back legs, 1½x2¼ inches; steps, 7⁄8x3¾ inches.

Furnished with bucket shelf.

Lengths, 4, 5, 6, 7, 8, 10, 12, 14 and 16 feet.

Prices upon application.

**Safety Step Ladders**



Especially designed for heavy work. Made from 1¼-inch stock, well braced, every step reinforced. All parts heavily riveted. The back is equipped with oval oak bars. The hinges and spreaders are of 1¼-inch iron.

Front, 1½x3¾ inches; back bars, 7⁄8x1¾ inches; back legs, 1½x2½ inches; steps, 1x3¾ inches.

Made of air dried stock in lengths of 4 to 22 feet.

Length.....feet	4 to 14	16 to 22
Per Foot.....	\$1.76	2.00

**No. 28 Babcock Platform Stepladders**

**Heavy Duty**

A practical, safe ladder for overhead work in churches, schools, ships, sign work, stock rooms, and theaters.

Made of light, durable air dried stock. Rung tenons dipped in hot linseed oil.

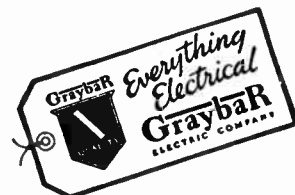
All metal parts are zinc plated to prevent rust.

Measured from floor to platform.

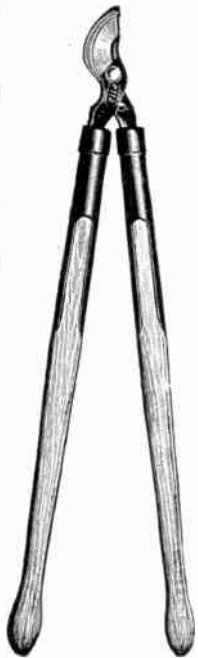
Shipping weight, 3½ pounds per foot.



Ht. to Plat- form..ft.	4	6	8	10	12	14	16	18
No. 28								
...ea.	\$16.50	20.50	25.00	29.50	32.50	35.50	38.50	41.50



## No. 777 Bartlett Two-Hand Pruners



Due to the fact that the majority of men are right-handed, the blade has been placed on the opposite side than is the general custom. This permits the blade to be placed next to the body or main limb of the tree with the hook handle held in left hand, while the right hand operates the blade.

Hook remains stationary while blade closes, instead of blade being held stationary while hook closes by twisting around the branch, wounding the bark.

Blade positively will not cut or dig into the hook. By dropping the hook considerably below the center line, a superior positive draw cut has been produced, with an opening between blade and hook, allowing a straight thrust at the branch.

Both blade and hook are hardened drop forged crucible tool steel. Has white ash handle.

26-Inch Handle with 10-Inch Strap Ferrule..... each \$5.00  
 26-Inch Handle with 4½-Inch Plain Ferrule..... each 4.75

### Porter Foresters



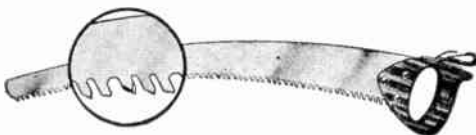
No. 2 is recommended as a forestry tool for pine pruning and rust control.

No. 3 cuts hardwood such as oak, maple and beech; for reforestation work such as brush cutting, trail clearing, etc.

Has slide shift 3-power slot which provides great extra power in the middle of a difficult cut. Edges are protected when handles are closed. All parts heat treated; fully interchangeable. Cuts clean, no damage to bark.

No. ....	2	3
Each .....	\$8.50	9.75
Length.....	inches 27	34
Capacity Cut.....	inches 1½	2
Weight.....	pounds 4½	7¼

## No. 114 Bartlett Utility Rapid Cut Saws



Cuts very fast. Teeth are diamond point with a well-shaped raker. Handle has an extra large grip permitting gloves and is comfortably shaped for the hand.

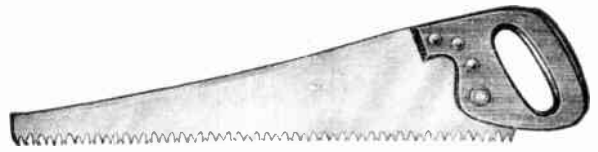
Can be obtained with or without the automatic on and off belt snap.

Use 6-inch safeback cant file.

Length, blade, 26 inches.

No. 114, with Snap..... each \$5.50  
 Without Snap..... each 5.00  
 Extra Snaps, Complete..... each .50

## No. 41 Bartlett Utility Saws



Used by utility companies. Will sever the largest branches. Extra large, special handle.

Tuttle tooth blade.

Length Blade..... inches 20 24  
 No. 41..... each \$3.25 3.50

## No. 114BD Bartlett Utility Pruning Saws



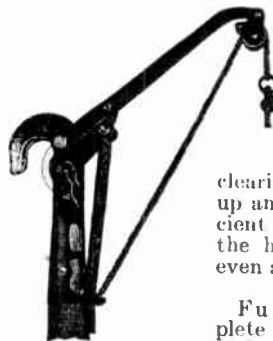
For fast cutting. Has diamond point teeth with well-shaped raker. Special handle. Length of blade, 24 inches. No. 114BD, without Snap..... each \$4.50

## Seymour Smith Tree Pruner



No. 111

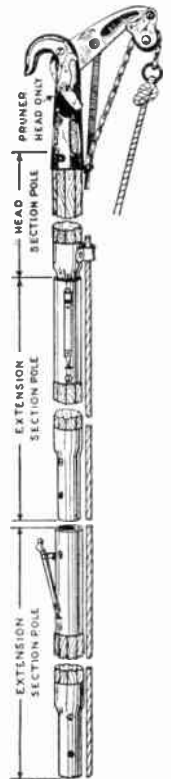
No. 111.—Cuts 1-inch diameter branches. It is a lightweight, powerful, general purpose pruner for light trimming and line clearing along electric light, power and telephone wires.



No. 12

No. 12.—Easily cuts 1½-inch diameter branches. Especially designed for electric light, power and telephone line clearing. Will stand up and give long efficient service under the hardest use and even abuse.

Furnished complete with rope and 18-foot wood pole.



Complete Pruner

No.	Description	Wt., Lb.	Each
111-18	Complete Pruner.....	10	\$12.00
111	Pruner Head Only.....	1½	3.00
1	6-Foot Head Section Pole.....	2½	2.40
1	6-Foot Extension Section Pole.....	3	3.40
51	6-Foot Tapered Head Section Pole...	3¼	5.00
21	6-Foot Tapered Extension Section Pole.....	3½	6.30
No. 12			
12-18	Complete Pruner.....	19	19.00
12	Pruner Head Only.....	4	6.00
2	6-Foot Head Section Pole.....	4½	3.30
2	6-Foot Extension Section Pole.....	5½	4.90

**No. 1-W Bartlett Pulley Type Tree Trimmers**



A very powerful cutting tool.

It not only has the compound lever, but it also has double leverage due to the pulley which is attached to the curved lever.

Will sever any branch up to 1 1/4-inch diameter, and the pulley enables the operator to pull the rope at any angle. A special coil spring positively returns the blade to a full cutting position.

An important feature of this tree trimmer is the light weight, the head complete weighing only 1 1/4 pounds.

All poles have two coats of waterproof shellac to prevent moisture absorption.

Furnished with 1 1/4x1 1/8-inch rectangular poles, one piece poles or short sections joined together with No. 156 brass sleeves which have a positive locking device.

**With Rectangular Pole and No. P156-2 Ferrule**

4-Foot Length.....	each	\$8.85
6-Foot Length.....	each	9.35
8-Foot Length.....	each	9.85
10-Foot Length.....	each	10.35
12-Foot Length.....	each	10.85
14-Foot Length.....	each	11.45
16-Foot Length.....	each	12.05
No. 1-W Head Complete with Pulley.....	each	6.00

**Extra Rectangular Sections, With No. 156-1 and 2 Body and Ferrule**

4-Foot Length.....	each	\$3.50
6-Foot Length.....	each	4.20
8-Foot Length.....	each	4.90
10-Foot Length.....	each	5.60

Six and 8-foot octagon poles with round sleeves are obtainable if desired.

**No. 44 Bartlett Pole Saws**

For large limbs.

Has 16-inch peg tooth blade with 7 teeth per inch. Saw is securely held by the head, which is stamped from stiff cold rolled steel and fastened to the pole by three bolts.

Head is made of two strips of steel riveted together so as to secure a truss shaped support for the blade, which is fastened between the two sides. Hook serves as a means for hanging the tool on a limb when not in use.

Saw can be adjusted to three angles to suit operator's position and the blade is ground for clearance, which prevents binding.

File blade with No. 395 cant file.

Furnished without ferrule.

Size pole, 1 1/4x1 1/8 inches.

4-Foot Length.....	each	\$6.20
6-Foot Length.....	each	6.60
8-Foot Length.....	each	7.00
10-Foot Length.....	each	7.40
12-Foot Length.....	each	7.80
14-Foot Length.....	each	8.20
16-Foot Length.....	each	8.60

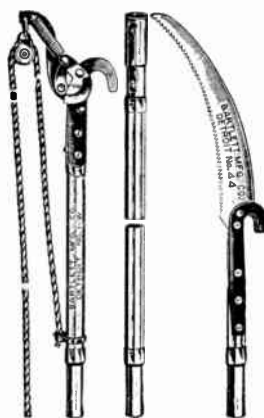
Paint brush clip will be attached to side of pole near head at 50 cents extra when desired.

No. P156-2 ferrule attached at 50 cents each, when extra sections are ordered.



**Bartlett Combination Pruners and Saws**

**Octagon Poles**



This combination has two separate tools for head sections, mounted on short pieces of 1 1/4-inch octagon sitka spruce poles, with No. 146-2 round ferrule attached to the lower end and extra 6 or 8-foot octagon section fitted with round brass sleeve body which engages the ferrule and locks securely.

Combination makes it possible to use either head with same handle section, and several intermediate lengths can be added if desired.

For convenience in shipping, head sections may be ordered without extra sections if desired.

No. 1-WE, 30-Inch Head Section, Wt., 2 3/4 Lb....	each	\$6.90
No. 44WE, 30-Inch Head Section, Wt., 1 1/2 Lb....	each	5.20
8-Ft. Intermediate Section with No. 146-1 and 2 Body and Ferrule.....	each	4.90
8-Ft. Handle Section with No. 146-1 Sleeve Body.....	each	4.25
No. 146-1 Sleeve Body, Complete.....	each	1.45
No. 146-2 Sleeve Ferrule.....	each	.65

**No. 50 Bartlett Safety Back Pole Saws**



Constructed to give the maximum amount of safety possible in hazardous work.

Bent wood back tapers from standard size pole to a narrow point which enables the user to operate the saw in close crotches.

In order to make the cutting most effective the cutting head has been designed so that the blade can be turned to three positions by simply loosening the thumb nut and turning the knurled holder until the pin drops into the desired position, then again tightening the thumb nut with the lower pin in a position corresponding to the upper end.

Steel blade is 36 inches long and 7/8 inch wide, having a draw cut of 5 points per inch, and will cut with great rapidity.

Saw has a cutting capacity of 5 inches.

File blade with No. 390 slim file.

5-Ft. Top Section with Blade and No. 156-2 Ferrule.....	each	\$9.40
4-Ft. Section with Sleeve Body.....	each	2.85
6-Ft. Section with Sleeve Body.....	each	3.55
8-Ft. Section with Sleeve Body.....	each	4.25
10-Ft. Section with Sleeve Body.....	each	4.95

**Newman Curved Type Tree Saws**



Designed for cutting limbs over 1 1/2 inches in diameter, and where blade with slight curve is required.

Adjustable to three angles.

Blade is long and is ground for clearance to prevent binding.

Separate extension handles may be used or the extension handles on Nos. 700, 800, and 900 trimmers may be used.

Overall length of saw and ferrule equipped handle, 6 1/2 feet. Weight, 3 3/4 pounds.

No. 1300, for 1 1/2-Inch Pole.....	each	\$7.20
No. 1300A, for 1 1/4-Inch Pole.....	each	7.20

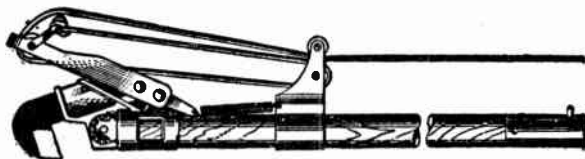


## Newman Swedish Steel Tree Saws



Designed for cutting limbs up to 4 inches in diameter. By undercutting, limbs up to 8 inches in diameter can be cut. Saw cuts on the draw, thus giving maximum ease of operation. Long blade, 35½ in. in length. Overall length, 4 ft. No. 1200, for 1½-Inch Pole.....each \$10.50  
No. 1200A, for 1¼-Inch Pole.....each 10.50

## Newman Heavy Duty Tree Trimmers



Will cut 1½-inch tree limbs because the knife shears down from the top. Gravity spreads the cut behind the knife; and wedging or choking is eliminated.

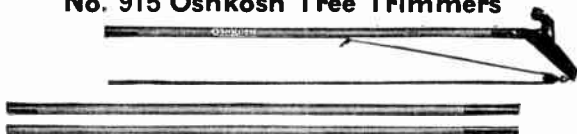
Trimmer is hung on the limb and the cut made by pulling the rope. High-powered leverage is provided by compound toggle lever and double pulleys. A broad ½-inch anvil base, against which the blade cuts, holds the tool in alignment with the limb so there is no side stress on the cutter.

Cutter head parts is aluminum heat treated alloy casting. The cutting blade itself is made of high chrome, high carbon tool steel carefully tempered for maximum strength. Metal parts are rust resistant plated.

No. 900, with 1½-Inch Pole and Multiple Pulley Action; Complete with Two 5-Foot Sections, 10 Feet Overall; Weight, 6½ Pounds.....each \$13.45

No. 975, Additional Center Section; 5 Feet Long; ½ Inches Diameter; Weight 2 Pounds.....each 2.75

## No. 915 Oshkosh Tree Trimmers



This trimmer has positive locking ferrules.

Head is made of two pieces of light forged steel, reinforced and riveted together. These sides act as a guide for the thin saw steel cutting blade. Blade is pivoted and starts cutting with a slicing motion the moment the rope is pulled. Cuts limbs up to 1½ inches in diameter.

Handle is made in three sections of 1½-inch diameter straight-grained, clear Washington fir. One 6-foot section is attached to head and two 7-foot lengths; all equipped with couplings. Furnished complete with handle and a short section of rope to which can easily be attached any kind and size of rope. One-half-inch rope is suggested for best results.

No. 915, Trimmer, less Rope. Wt. 13 Lb.....each \$17.95

No. 915B, Extra Blade. Wt. 10 Oz.....each 4.75

No. 915S, Extra Spring. Wt. 2 Oz.....each .85

No. 915EM, Extra 7-Ft. Middle Ext. Wt. 4 Lb. each 5.45

No. 915EE, Extra 7-Ft. End Extension. Wt. 4 Lb. each 4.00

No. 915R, 20-Foot Rope with Connector. Wt. 4 Oz.....each 3.30

## No. 916 Oshkosh Tree Saws



Saw blade is strong, thin, and has fine teeth. It cuts clean. Blade is fastened in the frame.

Steel frame has hook for hanging saw in tree. The 6-inch handle has a ferrule on bottom to which can be connected the regular extensions of the trimmer.

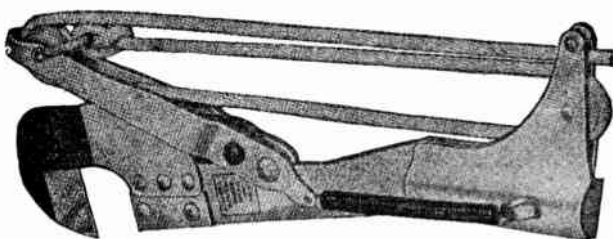
No. 916, Saw. Weight 5 Pounds.....each \$10.90

No. 916B, Extra Blade. Weight 4 Ounces.....each 2.65

No. 916T, Extra Tightener. Weight 4 Ounces.....each 2.15

## No. 1000 Newman Longrange Wire Cutters

For Overhead Wires



Used to cut wires overhead where manual applied energy is at a minimum and where the operator must dodge a falling wire after it has been cut.

Cuts energized or cold lines and cables by the hot stick method with extensions.

Ideal for holding, leading or wrapping hot lines overhead at a safe distance.

Jaw opening of 1½ inches permits cutting or cleaning of wire in conduit.

Circular cutting action of jaw gives a smooth cut.

Handles are tested for 75,000 volts as is operating rope.

Insulating materials will not gum jaws.

Overall length, 4 feet.

Additional 4-foot extensions are available.

Weight, 6 pounds.

No. 1000.....each \$25.00

No. 1050, Replacement Blade, Wt., ½ Lb.....each 5.00

No. 925, Replacement Spring. Wt., 2 Ounces.....each .30

No. 1085, 5-Foot End Ext. Handle, Wt. 1¼ Lb. each 5.00

## No. 700 Newman Featherweight Tree Trimmers



Used for topping or work in the tree.

Cuts limbs and branches up to 1 inch in diameter.

Has single action pulley design.

All pulleys are ball bearing for easier operation.

Overall length, 10 feet.

Handle diameter, 1¼ inches.

No. 700, Weight, 4¾ Pounds.....each \$9.50

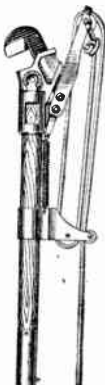
### Accessories

No. 750, Replacement Blade.....each \$2.75

No. 875, Center Extension Handle.....each 2.75

No. 885, End Extension Handle.....each 2.75

## No. 800 Newman Bantamweight Tree Trimmers



For trimming limbs and branches from trees. Also light enough for horizontal use in the tree.

Cutting capacity, 1 inch.

Overall length, 10 feet consisting of a 5-foot head or cutting section, 5-foot end extension. For longer use, a 5-foot center extension is available.

All pulleys are ball bearing for easier operation.

Handle diameter, 1¼ inches.

No. 800, Weight, 5¼ Pounds.....each \$12.50

### Accessories

No. 750, Replacement Blade.....each \$2.75

No. 875, Center Extension Handle.....each 2.75

No. 855, End Extension Handle.....each 2.75

**No. 12035 M.S.A. 10-Unit All Weather First Aid Kits**



Contains complete assortment of first aid materials in standard Type D packages of unit size or multiples of unit size.

Kit case is weatherproof, dustproof, and is strongly made of welded heavy gage steel.

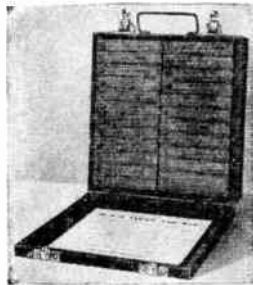
Each dressing is complete in itself, sterilized and sealed, with sufficient material for a single treatment.

Liquids are hermetically sealed in ampoules or vials to prevent leakage. Unit packages fit like blocks in case to simplify refilling.

Furnished with mounting brackets.

**Contents:** 1 package, 4-inch compress bandage; 1 package 2-inch compress bandage; 2 packages 1-inch adhesive bandage; 1 package Foille for burns; 1 package Iodine brushes; 1 package Ammonia inhalants; 1 package 40-inch triangular bandage; 1 package tourniquet and forceps.

**No. 12037 M.S.A. 24-Unit All Weather First Aid Kits**



Contains complete assortment of first aid materials in standard Type D packages in unit size or multiples of unit size.

Kit case is weatherproof, dustproof, and is strongly made of welded heavy gage steel.

Each dressing is complete in itself, sterilized and sealed, with sufficient material for a single treatment.

Liquids are hermetically sealed in ampoules or vials to prevent leakage. Unit packages

fit like blocks in case to simplify refilling.

Furnished with mounting brackets.

**Contents:** 3 packages 4-inch compress bandage; 3 packages 2-inch compress bandage; 3 packages 1-inch adhesive compresses; 2 packages 40-inch triangular bandage; 2 packages Foille for burns; 2 packages absorbent gauze compress; 2 packages Iodine brushes; 1 package Ammonia inhalants; 1 package Ammonia ampoules; 1 package wire splint; 1 package 4-inch gauze bandage; 1 package paper cups; 1 package tourniquet and forceps.

**No. FA-2294 M.S.A. Pocket First Aid Packets**



Contains a handy assortment of first aid materials for minor injuries, arranged in a metal box small enough to fit in the pocket.

Contents include ammonia inhalants, iodine applicator, adhesive compresses, compress bandages, and Foille for burns.

**No. FA-12619 M.S.A. Snake Bite Outfits**

Consists of a plastic suction syringe for removing venom by suction, lancet for enlarging wound, U. S. Army tourniquet, Iodine ampoule for painting wound, Ammonia inhalant, and paper cup. All contained in a sturdy plastic case.

Furnished in 1½-unit Type D package with instructions.

**No. FA-2682 M.S.A. Poison Ivy Wash**

Type D package of six 4 c.c. vials.

When applied in early stages, effectively relieves irritation and dries up inflammation.

**No. FA-2604 Creosote-Burn Wash**

Type D package of six 4 c.c. vials for effective treatment of burns or irritations of the skin caused by contact with creosote from line poles, ties, and creosoted timber.

**No. FB-12560 Foille for Burns**

Modern burn treatment for emergency and hospital use.

May be applied directly to injured area at scene of accident; does not require removal when treatment is continued by physician. Provides quicker emergency aid with marked control of pain and resultant shock.

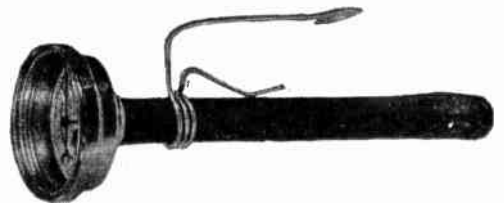
Rapidly anesthetizes injured tissues with characteristic absence of infection.

Aids rapid healing, lessens contractures, and reduces scarring.

Type D package contains two 5/8-ounce tubes with instructions on package.

Available in emulsion or ointment. Also available in larger packages.

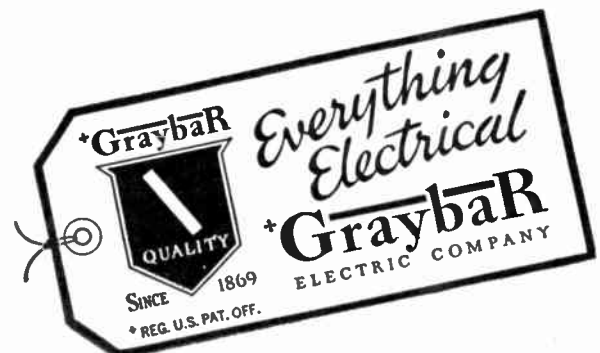
**Dillon Temperometers**



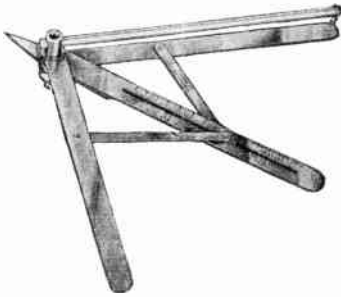
Used for obtaining temperatures of paraffin, compounds, wiping solder, impregnation wax, cable damming waxes, etc. Has large, easy to read dial and convenient handle.

Dimensions: dial diameter, 2½ inches; length of handle, 5½ inches; size of tube, 3/4 inches; overall length, 9 inches. Weight, 11 ounces.

Each..... \$6.00

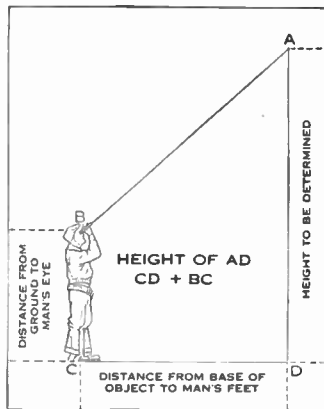
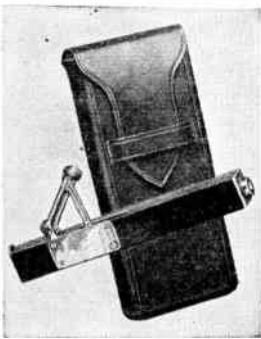


**Dillon Bisectors**



Used to locate correct anchor positions for poles and to read the pull needed. Registers interior corner angle degrees.  
 Dimensions: length, 8 $\frac{3}{4}$  inches; width,  $\frac{5}{8}$  inches; depth 1 $\frac{3}{8}$  inches. Weight, 5 ounces. Shipping weight, 14 ounces. Each..... \$4.95

**Type CW Matthews Teleheights**



Used by central stations, telephone and telegraph companies to secure height of poles, trees, etc. Used for figuring cubical contents of buildings, clearance of bridges, highlines, etc.

To find height A, stand away from A until bubble and line cross each other. Then measure off distance CD and add distance CB. The sum will equal DA.

Furnished with leather carrying case. Length, 5 inches. Type CW.....each \$24.00

**Type L Matthews Woodpecker Telefaults**



Used on telephone, telegraph, signal and certain other cables.

A self-contained instrument that will locate water, shorts of all kinds, crosses, grounds, split pairs—every kind of cable trouble except opens.

Uses one dry cell battery. Maximum voltage, under 5. No batteries furnished.

Cannot be confused with other inductive noises—has a tone like a woodpecker on a pole.

Type L, Complete with Coil, Cord, and Receiver, Weight 9 Pounds.....each \$130.00  
 Extra Exploring Coils.....each 32.00  
 Extra Receivers.....each 14.00

**Model A Dillon Cable Testers and Locators**

**Combined**



Used to locate where a cable or pipe is buried at and to determine at which depth cable or pipe is buried.

Locates the exact path that a service pipe or cable takes to reach any building and position of a water main in street or alley.

Has a lamp circuit for checking all connections after the test has been set up.

Especially valuable for checking depth of cable at river crossings or for determining whether or not a service pipe is below frost line after a street has been lowered or regraded.

Furnished with detector coil and neutral exploring coil. Built-in level in level enables the operator to maintain absolute level for accuracy.

Dimensions: 11 $\frac{1}{4}$ x7 $\frac{1}{2}$ x12 $\frac{1}{2}$  inches.

Weight, 21 $\frac{1}{2}$  pounds.

Shipping weight, 23 pounds.

Model A.....each \$76.00

**Dillon Model AN Dynamometers**



An instrument of the traction type which is used for the determination of strain and adapted for a wide variety of uses where traction or pull is to be measured.

The force of the pull, passed through the instrument causes a deformation which is indirectly proportional to the load and which is measured by mechanical means.

Operates on the basic scientific principle of the bending of a beam from a true straight line. The beam in this case consists of a solid bar of special alloy steel, heat treated and properly aged to prevent later "growth". Drilled slightly off axial center at each end of the beam is a hole through which shackle is passed. As load is applied to these off center holes, the beam is slightly deformed. This deformation is accurately indicated by a gage movement and amounts to only forty-thousandths of an inch for a full scale 360 degree reading.

Readings are direct for the exerted force is translated directly into pounds on the face of the dial.  
 Dimensions: 8 $\frac{1}{4}$ x6 $\frac{1}{4}$ x3 inches.  
 Weight: with shackles, and carrying case, 11 $\frac{1}{16}$  pounds; without shackles and carrying case, 5 $\frac{5}{8}$  pounds; shipping weight, 14 pounds.

20,000-Pound Capacity (250-Pound Divisions)...each \$175.00

15,000-Pound Capacity (125-Pound Divisions)...each 146.00

10,000-Pound Capacity (100-Pound Divisions)...each 122.00

7500-Pound Capacity (50-Pound Divisions)...each 115.50

5000-Pound Capacity (50-Pound Divisions)...each 109.00

3500-Pound Capacity (50-Pound Divisions)...each 102.50

2500-Pound Capacity (50-Pound Divisions)...each 96.00

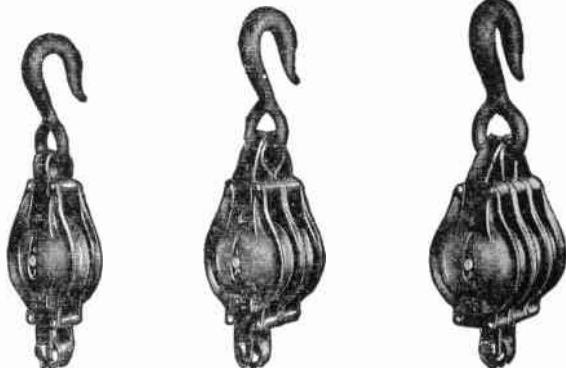
1000-Pound Capacity (10-Pound Divisions)...each 96.00

500-Pound Capacity (5-Pound Divisions)...each 96.00



**B & L Star Brand Metal Tackle Blocks**

For Manila Rope  
Malleable Iron Shells—Iron Sheaves  
With Loose Side Hooks



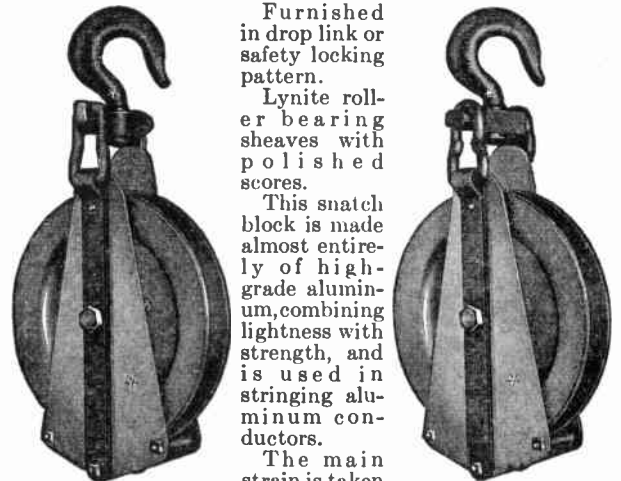
No. PU-2325-A Single      No. PU-2326-A Double      No. PU-2327-A Triple

All connections drop forged. Japanned finish.

For Shell Lgth. In.	Diam. In.	Iron Bushed			Roller Bushed			Graphite Bronze Bushed Self-Lubricating		
		No. PU-2325	No. PU-2326	No. PU-2327	No. PU-2325	No. PU-2326	No. PU-2327	No. PU-2325	No. PU-2326	No. PU-2327
3	3/8	\$2.40	\$3.60	\$4.80	\$3.00	\$4.70	\$6.40	\$4.00	\$6.60	\$9.20
4	1/2	2.70	4.00	5.30	3.30	5.10	6.90	4.30	7.00	9.70
5	5/8	3.50	5.30	7.10	4.10	6.40	8.70	5.10	8.30	11.50
6	3/4	4.10	6.30	8.50	5.00	8.00	11.00	6.00	10.00	14.00
7	7/8	5.80	8.40	11.00	7.00	10.50	14.00	8.00	12.50	17.00
8	1	6.60	10.80	15.00	8.00	13.50	19.00	9.00	15.50	22.00
9	1 1/8	10.00	15.00	20.00	12.00	18.00	24.00	13.00	20.00	27.00
10	1 1/4	12.00	18.00	24.00	15.00	24.00	33.00	16.00	26.00	36.00
12	1 1/2	18.00	29.00	40.00	22.00	37.00	52.00	23.00	39.00	55.00

**B & L Star Brand Aluminum Shell Conductor Stringing Snatch Blocks**

For Aluminum Cable  
Drop Forged Flatted Swivel Hooks, Heads and Links



No. PU2341-A Drop Link Pattern      No. PU2342 Safety Locking Pattern

Furnished in drop link or safety locking pattern.

Lynite roller bearing sheaves with polished scores.

This snatch block is made almost entirely of high-grade aluminum, combining lightness with strength, and is used in stringing aluminum conductors.

The main strain is taken through the drop forged swivel hook

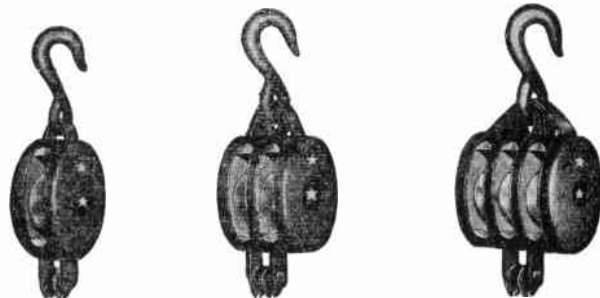
attached to the drop forged steel straps which never come in contact with the conductor.

The PU 2341 drop link pattern furnished unless otherwise specified. When ordering specify number, size of sheave with size of cable to be used.

Size Sheave Inches	Each	—SIZE ALUMINUM CABLE—		Weight Pounds
		Min. CM	Max. CM	
7x1 3/8 x 3/4	.....	No. 2/0	300,000	14
10x1 1/2 x 3/4	.....	336,400	500,000	18
14x2 x1	.....	500,000	795,000	37
16x2 1/4 x1	.....	795,000	1,272,000	40

**B & L Star Brand Regular Mortise Inside Iron Strapped Wood Tackle Blocks**

For Manila Rope  
With Iron Sheaves—Loose Side Hooks



No. PU-2207 Single      No. PU-2208 Double      No. PU-2209 Triple

For Shell Lgth. In.	Diam. In.	Iron Bushed Only			Iron Bushed Self-Lubricating			Roller Bushed			Graphite Bronze Bushed Self-Lubricating		
		No. PU-2207-C	No. PU-2208-C	No. PU-2209-C	No. PU-2207-L	No. PU-2208-L	No. PU-2209-L	No. PU-2207-R	No. PU-2208-R	No. PU-2209-R	No. PU-2207-B	No. PU-2208-B	No. PU-2209-B
3	3/8	\$1.50	\$2.40	\$3.30	\$2.10	\$3.40	\$4.70	\$3.10	\$5.20	\$7.30			
4	1/2	1.70	2.60	3.50	2.30	3.70	5.10	3.20	5.50	7.80			
5	5/8	2.10	3.20	4.30	2.80	4.50	6.20	3.70	6.20	8.70			
6	3/4	2.50	4.00	5.50	3.40	5.70	8.00	4.40	7.70	11.00			
7	7/8	3.00	4.80	6.60	4.00	6.60	9.20	5.40	9.20	13.00			
8	1	4.20	6.40	8.60	5.60	8.80	12.00	7.00	12.00	17.00			
10	1 1/8	7.00	11.00	15.00	9.00	14.00	19.00	11.00	18.00	25.00			
12	1 1/4	12.00	19.00	26.00	14.00	22.00	30.00	16.00	26.00	36.00			

Blocks furnished in all single blocks, one half in double blocks and one third of triple blocks without charge.

**B & L Star Brand Conductor Stringing Snatch Blocks**

Wood Shell—Drop Link Pattern



No. PU2340-SM Straight Mortise

Drop Forged Flatted Stiff Swivel Hooks Heads and Links

With Roller Bearing Sheaves

Equipped with specially designed roller bearings to insure freedom of action, as any failure would create a dangerous abrasion of conductors.

These blocks furnished in various sizes and made with special wide throats when so desired, so as to accommodate any large splicing that may run over sheave.

When ordering blocks specify figure number, size and type of sheave with size cable to be used, copper or aluminum.



No. PU 2340-WT Wide Throat

**No. PU2340-SM—Straight Mortise**

Size Sheave Inches	—With Sheave—		—Extra Sheaves—		Throat In.	MAXIMUM SIZE OF CABLE CM.	
	Jap'd Iron Each	Galv. Iron Each	Jap'd Iron Each	Galv. Iron Each		Copper	Aluminum
7x1 1/8 x 5/8	\$12.00	\$13.00	\$3.25	\$4.00	.....	.....	.....
7x1 3/8 x 3/4	15.00	16.00	4.75	5.50	.....	188,700	300,000
10x1 1/2 x 3/4	22.00	23.00	6.75	7.50	.....	250,000	397,500

**No. PU2340-WT—Wide Throat**

7x1 3/8 x 3/4	\$16.00	\$17.00	\$4.75	\$5.50	2 3/8	188,700	300,000
10x1 1/2 x 3/4	24.00	25.00	6.75	8.00	2 5/8	250,000	397,500
10x1 5/8 x 3/4	26.00	27.00	8.50	10.00	2 7/8	300,000	477,000
10x1 7/8 x 3/4	28.00	29.00	10.50	11.75	3 1/8	314,500	500,000



## B & L Star Brand Public Utility Snatch Blocks

For Manila Rope  
Eastern Pattern—Malleable Shells  
Drop-Forged Flatted Stiff Swivel Hooks

Has malleable iron shell, extra heavy drop-forged flatted stiff swivel hook, wrought iron straps, safety-locking link and smooth rounded edges to prevent chafing rope.

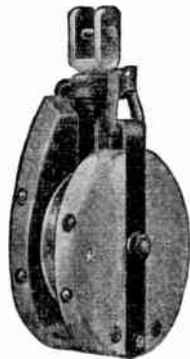
No. PU-2357, Open

Size Sheave Inches	Self-Lubr. Iron Bushed Each	Roller Bushed Each	Graphite Bronze Bushed Self-Lubr. Each	For Rope Diam. In.	Lgth. Shell In.	Approx. Wt. Lb. Each
3 x 1 1/8 x 1 1/2	\$10.50	\$11.00	\$12.00	7/8	6	9
4 1/2 x 1 3/8 x 5/8	14.00	15.00	16.00	1	8	16
5 3/4 x 1 7/8 x 3/4	22.00	23.00	25.00	1 1/4	10	27

## No. PU 2672 B & L Star Brand Conductor Stringing Snatch Blocks

Wood Shell

When ordering blocks specify figure number, size and type of sheave with size cable to be used, Copper or Aluminum.



Size Sheave Inches	Each	MAXIMUM SIZE APPROX. OF CABLE CM		Wt. Lb.
		Copper	Aluminum	
4 x 1 1/4 x 5/8	\$11.00	188,700	300,000	9
6 x 1 1/4 x 5/8	13.20	188,700	300,000	13
8 x 1 1/4 x 5/8	17.60	188,700	300,000	22
10 x 1 1/4 x 5/8	24.20	188,700	300,000	26

## B & L Star Brand Public Utility Snatch Blocks for Wire Rope

Drop Forged Flatted Stiff Swivel Hooks, Heads and Links

Used with pole derricks; for pulling aerial cable, etc. Impression prevents rope jumping between sheave and shell.

All galvanized with sheave for wire rope, with graphite-bronze self-lubricating bushing. Rope guard prevents rope interfering with safety attachment.

Size Block... inches	6	8	10
Each.....	\$18.00	26.00	37.00
Size Wire... inches	3/8	1/2	5/8
Weight Ea... pounds	15	32	52

### Extra Iron Sheaves

Size..... in.	6x1x3/4	8x1 1/4x3/8	10x1 1/4x1
Each.....	\$3.90	7.50	10.10
Wt. Each... lb.	3 1/2	8	12

## B & L Star Brand Malleable Iron Shell Conductor Stringing Snatch Blocks For Manila Rope

No.....	30	20
Size Sheave... in.	3x3/4x3/8	3x1x1/2
Size Hook... in.	5/8	5/8
Size Rope... in.	5/8	3/4

Japanned		
Iron Bushed... ea.	\$5.90	\$6.50
Graphite Bushed... ea.	6.10	6.90
Bronze Bushed... ea.	7.10	7.90

Galvanized		
Iron Bushed... ea.	\$6.30	\$6.90
Graphite Bushed... ea.	6.50	7.30
Bronze Bushed... ea.	7.50	8.30

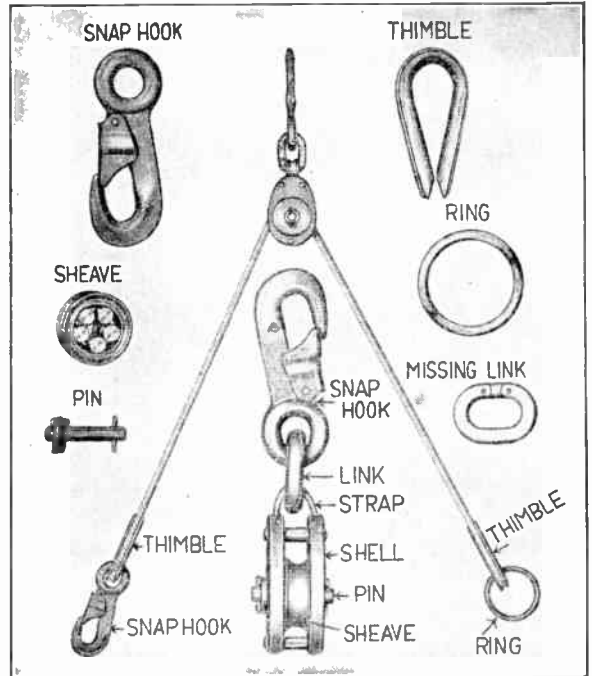


No. 30 PU 2407



No. 20 PU 2408

## B & L Star Brand Aerial Hand Lines



No. PU-37

Consists of 3-inch single roller bushed galvanized hollow steel block, 2 snap hooks, ring, 2 thimbles, missing link, and rope.

Complete with 60 Ft. of Manila Rope... each \$14.00 17.50  
Complete with 75 Ft. of Manila Rope... each 15.20 20.00  
Blocks Only without Rope (No Connections)... each 3.60

## B & L Star Brand Booster Hooks

Supports the cable while being pulled through the supporting rings.

Some rings, while adequate for supporting a stationary cable, tend to creep when performing the dual function of supporting and resisting movement while the cable is being placed.

Securely clamped to the messenger strand and presents a smooth rounded surface to the moving cable sheath.

Approximate weight, 3 pounds.  
No. PU-31 ..... each \$6.00



No. PU-31

## B & L Star Brand C Hooks

For connecting the winch or pulling line to the cable grip or core hitch. Also used at the end of the winch line for attaching to poles, transformers, etc.

Approximate weight, 2 1/2 pounds.  
No. PU-28 ..... each \$6.00



No. PU-28

## B & L Star Brand Flatted Swivel Hooks

Galvanized

For Come-Along

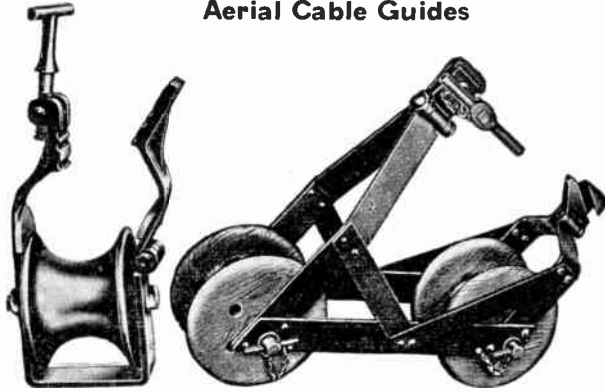
Size..... inches	1/2	5/8
No. PU-41..... each	\$4.60	7.15
For Dbl. Blocks..... inches	3	4
Length Overall..... inches	7 1/4	8
Weight..... pounds	5/8	1



No. PU-41



**B & L Star Brand Cable Blocks and Aerial Cable Guides**



No. PU-30, Single Sheave Cable Block

No. PU-39, Aerial Cable Guide

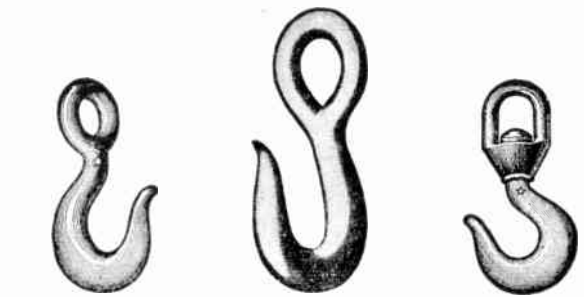
**No. PU-30 Single Sheave Cable Blocks.** For guiding winch lines in conjunction with aerial cable guides. Standard for 2½-inch diameter cable. Other sizes made up for larger diameter cable.

No. PU-30, Weight, 11 Pounds.....each \$18.00

**No. PU-39 Aerial Cable Guides.** For pulling lead covered cable into supporting rings. Has wood rollers.

No. PU-39, Weight, 32 Pounds.....each \$80.00

**B & L Star Brand Hooks**



No. PU 2274-F Drop Forged Flatted Loose Side Hooks

No. PU 2274-R Drop Forged Round Loose Hooks

No. PU 2275 Drop Forged Flatted Loose Swivel Hooks

Prices upon application.

**American Arc Lamp Chain with Attachments**



Made in three sizes: Nos. 31 and 33 for suspending arc lamps, and No. 35 for suspending incandescent lamps. It is heavily galvanized and rust-proof.

Put up on 500-foot reels.

Size No.	Description	Tensile Strength Pounds	Wt. per 1000 Pounds	Price per 100 Feet
31	For Heavy Street Fixtures.....	915	118	\$8.50
33	For Medium Street Fixtures.....	725	89	8.25
35	For Light Street Fixtures.....	550	71	7.50

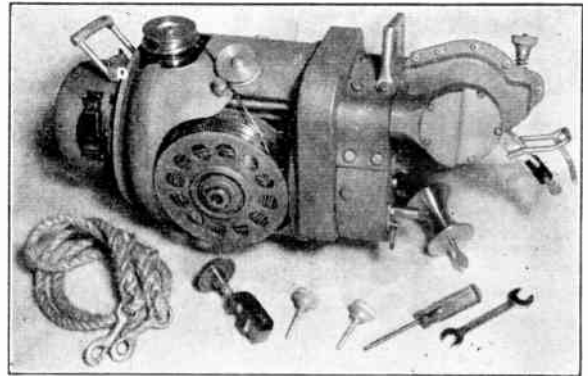
**Galvanized Attachments**

Item	Size	Price per 1000 sets
Hooks	For Chain Nos. 31, 33, 35	
	Price, Hooks.....per 100	\$6.00 6.00 4.00
	Rings	
Rings	For Chain Nos. 31, 33, 35	
	Price, Rings.....per 100	\$9.00 5.00 3.00
	Connecting Links	For Chain Nos. 31, 33, 35
Price, Connecting Links.....per 1000 sets		\$38.00 38.00 30.00

**Cable Spinning Equipment**

The following list of equipment was designed to support and maintain aerial cable and wires to steel supporting strand by the spinner method, which consists of spiraling a wire of suitable size and material around the wires or cable to be supported and the supporting strand. This method has proved its worth and has been adopted as standard practice.

**No. 300 Neale Model D Spinners and Chests Pull Type**



Designed for use by a construction gang to place and spin new cable or maintenance spinning of existing cable.

Operates on 10 ball bearing surfaces.

Adjustable to take cable from 11 pair, 26 gage to the maximum size 909 pair, 24 gage, sheath diameter 2¼ inches.

Ring pusher is removable. Wire supply is always visible.

Will operate with either .091 or .061-inch spinning wire.

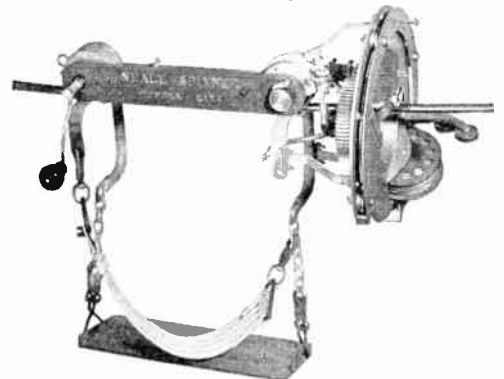
A ratchet on the strand wheel prevents slack in the spinning wire when pull on tow line is released.

Length, 24 in. Diameter, 10 in. Weight, 42 pounds.

Furnished with one lashing wire clamp.

Packed in a durable chest made of ½-inch plywood reinforced with metal on all edges and corners. Weight of chest empty, 33 pounds.

**No. 100 Neale Model B Spinners and Chests**



A one-man machine to place and spin new cable or for maintenance spinning of existing cable. Operated either by a hand crank or may be pulled along the supporting strand by a man on the ground. A dead weight of 50 to 100 pounds can be substituted for a rider in order to prevent slippage.

The two supporting trolley wheels are connected together by means of a bicycle chain. A removable gate is provided in the spinner head, which permits the spinner to be placed over strand and cable at the beginning of a span and readily removed when the next pole is reached. Has ball bearings at all points of wear. Frame is made of steel tubing. Chain drive is geared for upgrades.

Wire is carried on an aluminum reel which holds approximately 325 feet of wire.

Furnished with three sets of rollers to accommodate different sizes of cable. Equipment includes spinner chest, seat and safety belt, one tube of grease, and one spinning wire clamp. All metal parts not aluminum or bronze are cadmium plated.

Packed in a durable chest made of ½-inch plywood reinforced with metal on all edges and corners. Weight of chest empty, 53 pounds.



## Cable Spinning Equipment

**No. HB3 S&S Hand Line Block** is a tool especially designed for spun cable but is also used on cable supported by other methods. It clamps on the strand without damage to the cable and will not slip on a grade. No wrench is needed. Made of bronze alloy. Length, 10 inches. Weight, 4 pounds.



No. HB3

**No. LC5 Neale Spinning Wire Clamp** is a positive action clamp to hold the spinning wire in place when terminating at the pole and to keep the slack from running back when repairing cable. Made of bronze alloy with cadmium plated screw. Length closed, 3 1/4 inches. Length open, 4 1/2 inches. Weight, 1 pound.



No. LC5

## No. 27 Chance Rubber Wheel Flexible Safety Cable Car



This car can be collapsed, strapped or tied for convenient transportation. Adjustable up or down, by snaps and chain. Chain is made of steel, electric welded on sides of links to guard against weld opening. Snaps used are linemen's snaps of drop forged, galvanized steel.

Holes are provided in open side of car frame for snapping on safety belt.

Car is equipped with hand brake to hold chair stationary.

Seat is made of high grade fir lumber, reinforced with

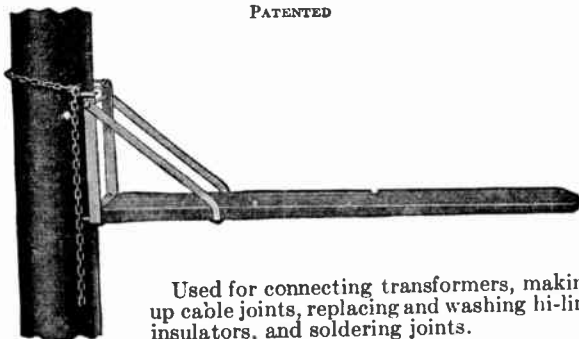
strap steel imbedded in wood.

Width, 21 inches. Weight packed, 27 pounds.

No. 27.....each .....

## No. 600 Peirce Lineman's Safety Platforms

PATENTED



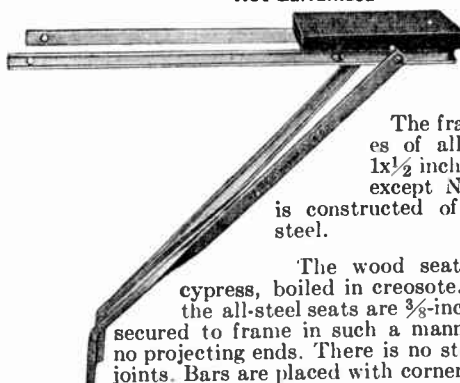
Used for connecting transformers, making up cable joints, replacing and washing hi-line insulators, and soldering joints.

Width, 9 5/8 inches. Length, 71 inches.

No. 600. Ship. Wt. Each, 50 Pounds. . . . per 100 \$11,494.31

## Hubbard Pole Seats

Hot Galvanized

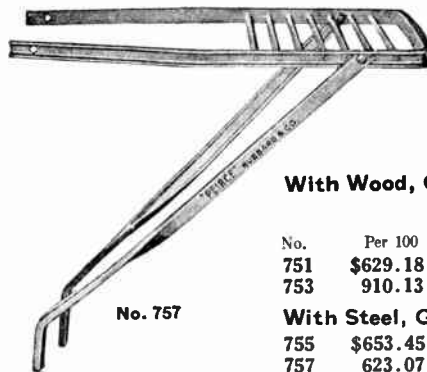


Will support more than three fourths of a tonsafely.

The frames and braces of all sizes are of 1 1/2 inch channel steel, except No. 9030, which is constructed of 7/8-inch round steel.

The wood seats are 1 1/8-inch cypress, boiled in creosote. The bars of the all-steel seats are 3/8-inch square steel, secured to frame in such a manner as to leave no projecting ends. There is no strain on riveted joints. Bars are placed with corners up to prevent slipping.

No. 751



No. 757

### With Wood, Creosoted Seat

No.	Per 100	Size Seat Inches	Shipping Wt l.b. Per 100
751	\$629.18	11x12	1300
753	910.13	11x20	1400

### With Steel, Galvanized Seat

755	\$653.45	12x13 3/8	1400
757	623.07	12x11	1300

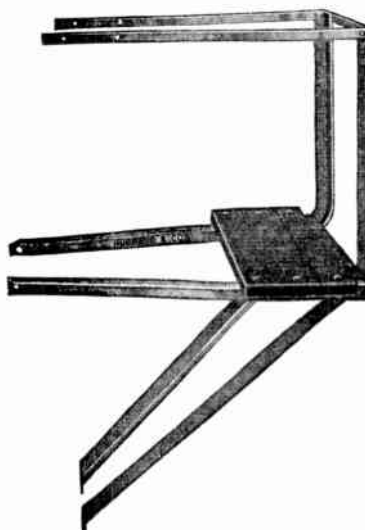
### With Wood, Painted Seat

†9030	\$3487.57	8x26	4300
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†A. T. & T. Co. Std.

## Hubbard Pole Balconies

Hot Galvanized



No. 9035

Used for convenience and comfort in telephone terminal box work and serves as switching platform with power companies.

Frame, braces and guard rails of No. 9035 are made of open hearth steel, galvanized by hot-dip process. Wooden platform is of thoroughly seasoned oak, painted with two coats of standard green pole paint.

Nos. 9035 and 9045 are identical except that the railing on No. 9035 fastens to a telephone terminal box and the railing on No. 9045 fastens to the pole.

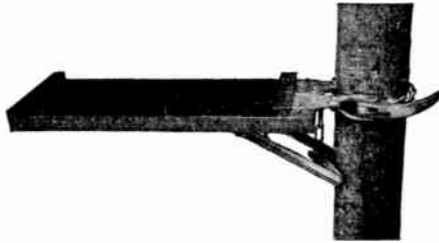
Upright braces are 1 1/2x1 1/2x3/8 inch steel; the platform supports, 1 3/4x1 3/4x3/8 inch angle steel; and the guard rail of 1 1/4 inch flat steel.

The complete balcony includes all bolts for fastening parts together but not the bolts for attaching to pole.

No. ....	†9035	9045
Per 100.....	\$5404.26	6726.37
Size Seat.....inches	14x30	14x30
Shipping Weight Per 100.....pounds	6300	6700

†A. T. & T. Co. Std.

**Chance Economy Platforms**



Used wherever a board of 24 or 30 inches in length is required or where maximum economy is desired.

Easily attached to pole by a single chain tightener. There is no brace pole, the board being fully supported by its mounting bracket.

Recommended for use where working space is limited.

Will support the weight of one man. Has been tested to loads up to 850 pounds.

On towers, blocks should be placed under the chain on the inside of the tower leg angle in order to give the chain a firm grip.

Top of board finished with grip tread.

No.	Each	Length Inches	Rated Strength Pounds	Weight Pounds
M4901-51	\$14.75	24	600	26
M4901-52	15.50	30	600	29

**Chance Tugger-Steel Hoists**



A lightweight spur geared puller with ratchet handle and friction brake.

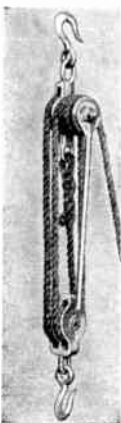
All working parts of mechanism and brake are fully enclosed and protected.

Simple button adjustments A and B free brake and ratchet mechanism permitting free wheeling to make easy connections.

Standard lift, 5 feet.

	Length of lever, 20 1/2 inches.	
No.	75'	150'
Capacity	3/4	1 1/2
Pull on Lever to Lift Full Load		
.....lb.	60	83
Min. Distance Between Hooks		
.....in.	9 1/2	12 3/4
Length Chain	66	76
Weight	13	24

**Chance Capstan Pulley Blocks**



A light weight tool, easy to handle. Has a leverage ratio of 32 to 1. Equipped with ratchet handle.

Pulleys and drum are aluminum. Handle, housing, and hooks are drop-forged steel. Rope is manila.

No.	Capacity Pounds	Size Rope Inches	Net Weight Pounds
2	2000	1 1/2	15
* 2A	2000	1 1/2	13
4	4000	5/8	25 1/4
* 4A	4000	5/8	20 1/2
22	3000	1 1/2	19 1/4
*22A	3000	1 1/2	16 3/4
44	5000	5/8	31 1/4
*44A	5000	5/8	25 3/4

\*Without rope.

**Coffing Safety-Pull Ratchet Lever Hoists**  
\*With Single Locking Pawl



Nos. AG, FG

Nos. ATG, FTG

No. ZG

A safe and fast ratchet lever hoist. Equipped with a dual ratchet and pawl assembly, independent of each other, therefore the load is always under control. There is no clutch to slip and the hoist cannot drop its load.

Because of its adaptability to all types of work where a full stroke of the handle is permitted this single pawl hoist is the choice of most light and power and telephone construction and maintenance crews. Can be used for lifting or pulling.

Has side lever for positive up or down and a neutral position for automatic safety control, making hoist easy to operate. Has free chain feature, that is, when there is no load on hoist a slight pressure on thumb latch on side of lever allows load chain to be pulled through hoist, either up or down, without operating lever.

Malleable iron safety-valve handle will bend at maximum overload before chain will break or hooks will straighten out. Reversible handle. Safety stops prevent handle from spinning in case operator's hand should slip off handle.

All Safety Pull hoists are factory tested at 100 percent over their rated capacity.

Nos. ATG, FTG and ZG hoists are readily converted by unsnapping the special snap hook from connecting link at bottom of hoist and allowing snap hook to act as a lug, preventing end of chain from passing through the super block.

No.	Each	Extra Lift per Foot	Rated between Cap. Tons	Min. Lift Speed per Hooks In.	Lift Min. In.	Lb. on Lever to Lift Rated Cap.	Std. Lift Inches	Wt. Lb.
*AG	\$36.30	\$1.10	3/4	13	36	56	56 1/2	14
*ATG	45.10	2.20	1 1/2	15	18	60	57	17
*FG	52.25	2.25	1 1/2	16	48	116	56 1/2	25
*FTG	65.45	4.50	3	17	24	124	57	34
ZG6	126.50	9.00	6	25	12	124	53	59
WG9	258.50	11.25	9	30	9.6	124	60	120
WG11	280.50	13.50	11	30	8	124	60	130
WG13	302.50	15.75	13	30	7	124	60	140
WG15	330.00	18.00	15	30	6	124	60	150

\*If wanted with intermediate locking pawl, add \$5.50 to list.

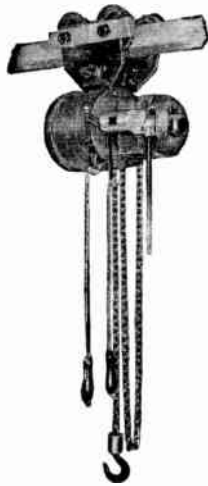
NOTE. By attaching a special iron block, called a super attachment, to Nos. AG or FG along with 5 feet of chain, to keep the standard 5-foot lift, they can be converted into double their rated lifting capacities. Super attachment for No. AG, \$5.55; for No. FG, \$7.20.

## Coffing Quik-Lift Electric Hoists

Standard Lift, 8 Feet



With Hook Suspension



With Trolley Suspension

Heavy duty motor, ball bearing, high starting torque. Can be plugged into any a-c or d-c circuit. Fool-proof safety limit switches automatically stop operation of hoist.

Hoist with trolley suspension has Hyatt roller bearings. Furnished with lubri-seal ball bearings throughout. Gears and pinions made of special alloy steel, heat-treated cut teeth. Gear system sealed and running in oil. Hooks made of drop-forged alloy steel, heat-treated to stand 200 per cent over rated capacity.

Extra heavy load chain is made of special alloy steel. Will not kink or bend. Sheave is extra heavy steel casting.

Sensitive pendant rope control permits load to be raised or lowered a fractional part of an inch.

When ordering, state voltage, phase and cycle, lifting speed, and whether for a.c. or d.c.

### Model J

110-220 V., 1 Phase, 60 Cycle or 220-440 V., 3 Phase, 60 Cycles

No.	With Roller Bearing Trolley and Hook Suspension Each	With Coil Chain Each	Extra Chain per Lineal Foot	Capacity Pounds	Lifting Speed per Minute In Ft.	Motor Hp.	Wt. Lb.
J-500-22	\$200.16	\$180.00	\$.85	500	22	1/3	89
J-500-33	218.16	198.00	.85	500	33	1/2	99
J-500-49	236.16	216.00	.85	500	49	3/4	126
J-1000-11	201.60	180.00	.85	1000	11	1/3	95
J-1000-17	219.60	198.00	.85	1000	17	1/2	115
J-1000-24	237.60	216.00	.85	1000	24	3/4	135
J-1500-17	255.20	230.00	1.05	1500	17	3/4	135
J-2000-8	234.60	209.00	1.05	2000	8	1/2	115
J-2000-12	255.20	230.00	1.05	2000	12	3/4	135
JD-3000-8 1/2	279.65	247.25	1.05	3000	8 1/2	3/4	155
JD-4000-4	281.76	240.00	1.05	4000	4	1/2	155
JD-4000-6	289.01	247.25	1.05	4000	6	3/4	180

### Model S

220 or 440-V., 3-Phase, 60 Cycles

	Test Load in Tons	Min. Dist. Bet. Hooks Inches	Chain Pull to Full Load Pounds	Chain Overhaul to Lift Foot	Rated Cap. Tons	Weight Pounds
S-1000-36	\$319.45	\$297.85	\$1.05	1000	36	2 165
S-2000-18	323.05	297.85	1.05	2000	18	2 165
S-2000-36	355.20	330.00	1.05	2000	36	2 210
SD-4000-9	354.16	312.40	1.05	4000	9	2 175
SD-4000-18	383.01	341.25	1.05	4000	18	2 225

The letter D signifies that hoist has a double chain.

Motor specifications, other than above, furnished upon application.

## Model YC Coffing Ball Bearing Spur-Geared Chain Hoists



Top hooks and load hooks are made of drop forged heat treated steel and are tested at more than 100 per cent over their rated capacity without any signs of yielding.

Extra heavy certified malleable iron cross-head assures maximum strength and permits rocking motion of hoist.

Heavy suspension plates provide support between top hook crosshead and load sheave. Also support the malleable iron saddle for double chain hookup. On double chain hoists, these plates eliminate the use of a top yoke, reducing weight and headroom and permitting hoist to hang evenly at all times.

Weston automatic load brake securely holds load at any desired position. A slight pull on hand chain is required to lower load. Dust guard protects brake from dust and dirt.

Load sheave is large and heavy and is a special Zee metal casting with pockets formed to fit steel links of load chain.

Driving pinion is made of special alloy steel to resist breaking, twisting and bending.

The load sheave is mounted on two heavy precision ball bearings, enclosed and protected from dust and grit, eliminating friction.

Load chain is made of high grade steel, electric welded, heat treated and at the proper pitch to fit the sheave pockets perfectly. At a maximum overload this chain will stretch before breaking.

Planetary spur-geared type gear system. Gears are mounted on bronze bushings and enclosed in a pressed steel cover. The gear pressure is so balanced that practically all friction is eliminated and efficiency increased.

Sturdy malleable iron hand chain guide prevents snagging and fouling of hand chain.

A heavy steel anti-friction Timken thrust bearing permits free swiveling of the load hook.

Highly polished steel hand chain fits perfectly into the pockets of the hand chain wheel.

Rated Capacity Tons	Standard Lift Each	Extra Lift per Foot	Travel of Lower Hook or Standard Lift Feet	EXTRA Chain Feet	LIFT Hand Chain Feet	LENGTH STANDARD CHAIN IN LINEAL FEET
						Load Hand
1/2	\$66.50	\$1.20	8	1	2	9 16
1	85.50	1.45	8	1	2	9 16
1 1/2	114.00	1.70	8	1	2	9 16
2	133.00	2.10	9	1	2	10 18
3	171.00	2.80	10	2	2	22 22
4	209.00	3.60	10	2	2	22 22
5	245.00	3.60	12	2	2	26 16

Rated Cap. Tons	Test Load in Tons	Min. Dist. Bet. Hooks Inches	Chain Pull to Full Load Pounds	Chain Overhaul to Lift Foot	HOISTING SPEEDS FEET PER MINUTE			Weight Pounds
					Full Load	Half Load	Quarter Load	
1/2	1	12	57	21	8 1/2	17	26	62
1	2	15 1/2	76	31	4 1/4	8.5	13	94
1/2	3	18	103	35	5.1	10.2	15.3	136
	4	21	112	42	3.9	7.8	11.7	204
3	6	28	107	70	2.5	5.0	7.5	183
4	8	32	116	84	1.9	3.8	5.7	240
5	10	32	116	109	1.3	2.6	5.2	245



**Coffing Power Pike Poles**

This pole is built of two pieces of galvanized pipe, one telescoping the other. Power is obtained through the use of a Coffing Load Binder or Safety-Pull Hoist.

For straightening leaning poles one man, with this tool, can do the work of from two to six men.

Pole has a heavy steel base. Top cannot slip off pole.

Load binder or hoist can be used for many other purposes.

Height: minimum, 8 feet 2 inches; maximum, 11 feet 7 inches.

Weight 32 pounds.

Complete with Model A Load Binder.....each **\$35.45**  
 Pole Only.....each **18.20**



**Coffing Midget Light Line Pullers**



A tool for pulling telephone and light wires, and for many other uses. Puilt on the ratchet and/or crank principle.

Equipped with roller chain, five feet long.

Rated capacity, 600 pounds. Handle so constructed with a safety feature that it will bend at 100 per cent overload.

Each, Wt. 6 lbs. .... **\$24.95**  
 Extra Chain.....per foot **.60**



**Coffing Load Binders**

Drop-forged steel hooks with swivels on both ends. The take-up is 5/8 inch to each stroke of the handle.

If load becomes loose, it can be bound tight simply by drawing on lever. After load is taken off chain, both levers can be tripped at once and chain can be pulled through binder free.

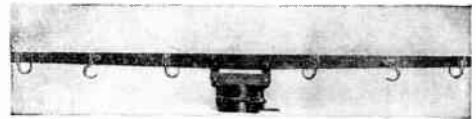
Can also be used as a hoist and for stretching wire or cable.

Model.....	A	F
Load Binder.....each	<b>\$17.25</b>	<b>\$24.00</b>
Super Attachment (Special Iron Block).....each	<b>5.55</b>	<b>7.20</b>
Extra Chain.....per lifting ft.	<b>1.10</b>	<b>2.25</b>
Rated Capacity.....tons	2	3
Standard Lift.....feet	2	2
Standard Chain.....feet	2	2
Lifting Speed per Minute.....in.	36	48
Weight.....lbs.	11 1/2	24

**Coffing Temporary Cross Arms**

Built to stand hard usage. Weighs much less than a standard cross arm, and no line truck should be without at least one set.

No. 10-A



For electric work. Hooks are self-locking, made of certified malleable iron, large enough to hold line hose to prevent current from arcing.

No. 10-A.....each **\$17.55**

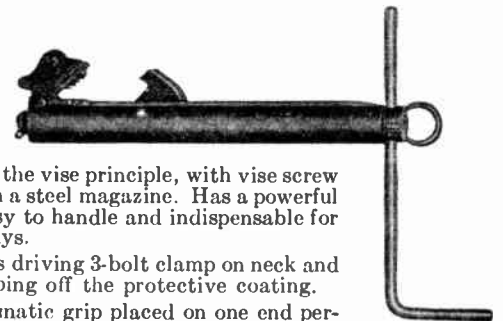
No. 10-C



For changing cross arms on corners.

No. 10-C.....each **\$14.95**

**Coffing Temporary Guy Clamps**



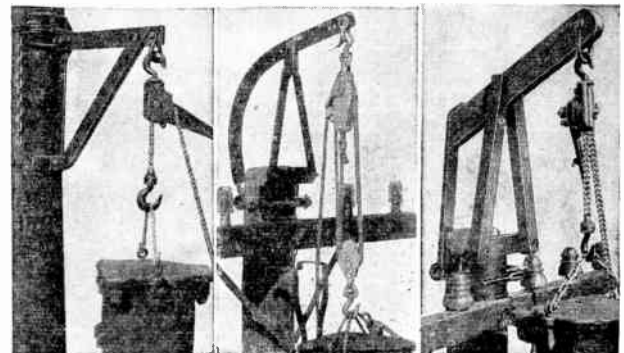
Built on the vise principle, with vise screw enclosed in a steel magazine. Has a powerful grip, is easy to handle and indispensable for necking guys.

Prevents driving 3-bolt clamp on neck and thus stripping off the protective coating.

An automatic grip placed on one end permits necking as close to the pole as desired without slipping.

Weight, 3 1/2 pounds.  
 Each..... **\$3.50**

**Coffing Transformer Gins**



Model ST

Model OST

Model WT

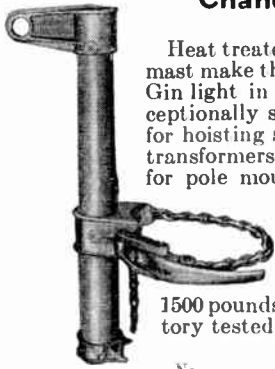
Tested to more than 3000 pounds without yielding.

Clamps on side of pole. Malleable iron and steel.  
 Model ST, Weight, 28 Pounds.....each **\$16.10**

Clamps securely to top of any size pole. Made of special spring steel, angle iron legs and malleable iron clamp.  
 Model OST, Weight, 33 Pounds.....each **\$16.10**

Main body and legs made of seasoned hickory, bolted to malleable iron clamp. Non-conductor of electricity.  
 Model WT, Weight, 28 Pounds.....each **\$16.10**

## Chance Transformer Gins



Heat treated aluminum castings and wooden mast make the Chance Insulated Transformer Gin light in weight, easy to handle, and exceptionally strong. It is designed primarily for hoisting small distribution and rural line transformers, circuit breakers, and reclosers for pole mounting. Gin is applied to pole quickly by the safety locking Chance Chain Tightener. Eye of gin extends out 8½ inches from pole, allowing adequate clearance for hoisting. Rated for 1500 pounds maximum load. Every gin is factory tested before shipment.

No.	Description	Approx. Wt., Lb.
30TG	24-Inch Gin Complete	10 <sup>5</sup> / <sub>8</sub>
30TG-1	36-Inch Gin Complete	11 <sup>1</sup> / <sub>2</sub>

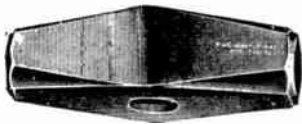
## No. 325 Chance Pole Unloaders



The Chance Safety Trip Pole Unloader features a safety lock pin plus a toggle trip arrangement which prevents release of the load until the lever is pulled by hand line to shift the toggle past dead center. Using this safety trip method, only two men are needed for unloading poles instead of an entire crew. A once hazardous job is made safe.

Safety Pole Unloader Set Complete consists of: 2 safety trips with bolts and large washers; 2 steel rope cables, 25'x<sup>3</sup>/<sub>8</sub>"; 2 thimbleye bolts, <sup>3</sup>/<sub>4</sub>x12 inches with large washers; 4 Crosby wire rope clamps for <sup>3</sup>/<sub>8</sub>-inch wire rope.

Approximate weight, 58½ pounds.

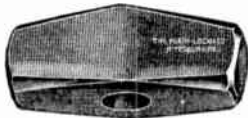


## No. 127 Klein-Logan Striking or Drilling Hammers

Long or Nevada Pattern. 12-lb. and under have polished ends.

Size.....pounds	4	6	8	10	12	16
No. 127.....each						

## No. 3 Klein-Logan Hand Drilling Hammers



Made of steel. Round eye size, ⅛-inch. Available in 2, 3, and 4-pound sizes.

No. 3.....each	
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## No. WM13 Vaughn & Bushnell Lineman's Double Faced Hammers

Bell System Type



Drop forged head with special short neck designed to strike a heavy accurate blow in a confined space.

Length over all, 15 inches.

Weight of head, 2¼ pounds. Weight of hammer complete, 3 pounds. Packed 4 in a box.

No. WM13.....each	\$3.00
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## No. 1 Klein-Logan Cutter Mattocks



Made of good quality steel. Black finish.

Packed 2 dozen in a case.

Weight.....pounds	3	5
No. 1.....per dozen	7	6
Eye No.....inches	3	3½
Blade Width.....inches	3	3½

## No. A-2 Klein-Logan Pick Mattocks



Made of open hearth steel.

Size Hoe.....inches	7½x3½
Per Dozen.....	
Size Pick.....inches	8½
Weight.....pounds	5

## Klein-Logan Contractors' Picks



Made of steel.

No.....	40	41
Length.....inches	30	30
Point.....Round		Square
Weight.....pounds	8	9

## No. 260 Pinch Point Crowbars



Made of good quality steel.

Weight.....pounds	12	18	22	26
No. 260.....each				
Length.....feet	4¼	5	5¼	5½
Size Stock at Point.....inches	1½	1¾	1¾	1½

## No. 266 Klein-Logan Digging Bars



Standard 1½-inch octagon, 8 feet.

Prices upon application.

## Chance Linemen's Socket Wrenches



Fits heads and nuts of all standard bolts for pole and guy work.

Drop forged.

No.....	154	234
For Nut Size.....inches	⅝ & Smaller	¾ & Smaller
Net Weight.....pounds	2½	3¼

## No. 3146 Klein Linemen's Wrenches

Bell System Type



Wrench is particularly adapted for use on heavy 3-bolt guy clamps on which the clearance for a wrench is limited.

This wrench is forged of select bar steel, heat treated, and is of the open end type with two openings of a different size at each end. There is a hole provided at the larger end so that the wrench may be used for turning in standard pole steps.

Size, 13 inches. Weight per dozen, 23 pounds.

No.....	3146	3146-A
Each.....	\$5.20	5.20
For Size Hardware.....inches	⅝	¾
Openings on Larger End inches	1½ and 1⅝	1⅝ and 1⅝
Openings on Smaller End inches	1⅝ and ⅝	⅝ and ⅞

**No. 102-1 Klein Splicing Clamps**



Arranged with 5 round holes for bare wire. For copper wire Nos. 8, 10, 12, 14, 16, B & S. For iron wire Nos. 10, 12, 14, 16, 18, B.W.G. Length, 8 inches.

No. 102-1.....each \$5.70

**No. 102-3 Klein's Splicing Clamps**



Large hole can be used for guy wire or messenger strand. Copper wire Nos. 2, 4, 6, 8, 10 and 12 A. W. G. Iron wire Nos. 4, 6, 8, 10 and 12 B. W. G.

No. 102-3, 10 3/4-Inch. Wt. per Doz., 16 3/4 lbs. ....each \$7.40

**No. 102-30 Klein's Splicing Clamps**



Holes reversed for those who prefer this arrangement

Copper wire Nos. 2, 4, 6, 8, 10, 12 A. W. G. Iron wire Nos. 4, 6, 8, 10, 12, 14 B. W. G. No. 102-30, 10 3/4-Inch. Wt., per Doz., 15 lbs. ....each \$7.40

**No. 102-48 Klein's Splicing Clamps**



Largest hole convenient to bring together guy strand before applying a three bolt clamp.

Copper wire Nos. 0, 2, 4, 6, 8 A. W. G. No. 102-48, 10 3/4-Inch. Wt., per Doz., 15 lbs. ....each \$7.40

**No. 105-15 Klein's Splicing Clamps For Twisting Double Tube Sleeves**



For copper sleeves Nos. 8, 10, 12, 14, 17, A.W.G. For iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G. No. 105-15, Size 8-inch.....each \$6.10

**No. 105-17 Klein's Splicing Clamps**



Has five sets of chamber for twisting double tube sleeves. For copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G. For iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G. No. 105-17, Size 10 1/4-inch.....each \$7.40

**No. 105-31 Klein's Splicing Clamps**



Three double chambers for twisting Nos. 10 and 12 A. W. G. sleeves, Nos. 12, 14, and 17 N. B. S. sleeves. No. 105-31, 8 1/4-Inch. Wt. per Doz., 5 3/4 lb. ....each \$6.10

**No. 132-15 Klein Combination Wire and Sleeve Clamps**



Used for telegraph, telephone and power line work. Has an unusual range of wire and sleeve sizes. Made with 5 round holes for twisting bare wire and an oval opening for guy wire or messenger strand. Copper wires No. 4, 6, 8, 10, 12, A.W.G. Iron wire Nos. 6, 8, 10, 12, 14, B.W.G. Strand opening, .437x.624.

Reverse side has 5 chambers for twisting double tube sleeves. Copper sleeves Nos. 6, 8, 10, 12, 14, 17, A.W.G. Iron sleeves Nos. 8, 10, 12, 14, 16, 19, B.W.G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handles.

Size, 11 1/4 inches. Weight per dozen, 18 pounds.

No. 132-15.....each \$10.50

**No. 132-46 Klein Wire and Sleeve Clamps**



One side for double tube copper sleeves Nos. 4, 6, 8, 10, and 12 B. W. G. Other side for copper wire Nos. 4, 6, 8, 10, and 12 B. W. G.

Weight per dozen, 17 3/4 pounds.

No. 132-46.....each \$10.50

**No. 132-12 Klein's Combination Wire and Sleeve Clamps**



For telephone and telegraph general line and trouble work. This clamp has four round holes for twisting bare wire.

Copper wire Nos. 6, 8, 10, 12, B. & S.

Iron wire Nos. 8, 10, 12, 14, B. W. G.

The reverse side has four double chambers for twisting sleeves.

Copper sleeves Nos. 8, 10, 12, 14, 17, B. & S.

Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handle.

Weight per dozen, 11 pounds.

No. 132-12, Size, 9 Inches.....each \$7.70

**No. 132-30 Klein's Combination Wire and Sleeve Clamps**



Sleeve openings are for N.B.S. and B.W.G. sizes 9 and 8 respectively. Remaining five openings cover range of wire sizes used on railroad signal and telegraph work.

No. 132-30, Size, 11 1/4 In., Wt. per Doz., 18 Lb. ....each \$10.50

**No. 132-48 Klein's Copperweld Sleeve Clamps**



This clamp has four chambers for twisting single tube (oval) sleeves used for making joints on copperweld conductors sizes 4A, 6A, 8A, and 3 No. 12. These chambers also accommodate single tube (oval) sleeves as in following table:

Copperweld Size No.	Solid B&S Copper No.	Strand B&S Copper No.	Copperweld Size No.	Solid B&S Copper No.	Strand B&S Copper No.
4A	1	2	8A	4	5
6A	3	4	3 No. 12	5	6

Swing latch holds head securely closed while joint is twisted preventing slippage or burning which might develop otherwise from bowing of handles when twisting larger sleeves.

No. 132-48, Size, 11 1/2 In., Wt. per Doz., 18 Lb. ....each \$12.20



## No. 132-39 Klein's Strand and Wire Holding Tools



This tool serves as a temporary clamp to hold together two sections of strand or wire while placing permanent clamps or splicing and serving.

Openings will fit: 1/16-inch strand (16000-lb. Bell System); 1/8-inch strand (10000-lb. Bell System); 3/16-inch strand (6000-lb. Bell System); 1/4-inch strand (2200-lb. Bell System); 3/4-inch solid No. 12 B.W.G. iron or No. 10 B. & S. copper wire; and 1/2-inch solid No. 13 B.W.G. iron or No. 11 B. & S. copper wire.

Hammer forged from high grade tool steel. Polished head and handles temper blued.

Weight per dozen, 18 pounds.  
No. 132-39, Size, 11 1/4 Inches. . . . . each \$10.50

## No. 132-47 Klein's Wire and Sleeve Clamps



For single tube or oval copper sleeves. Nos. 2, 4, 6, 8, and .104.

Hinge has stop to prevent handles from opening beyond point convenient for clamping on sleeve.

No. 132-47, Weight per Doz., 18 Lbs. . . . . each \$12.20

## No. 132-74 Klein's Wire and Sleeve Clamps



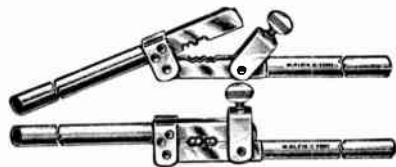
Has three special chambers for twisting single tube or oval (Memco) sleeves Nos. 2, 4, and 6; also an oval (hog) hole .437x.624 for guy strand.

Chambers or openings are a modified figure eight shape, giving a secure hold which prevents burning sleeve when joint is twisted. Swing latch overcomes any spring in handle which might otherwise develop when used on larger sleeves. Stop in hinge prevents handles from opening beyond the point convenient for clamping onto the sleeve.

Hammer forged from high grade tool steel, polished head, temper blued handles. Size, 11 1/2 inches.

No. 132-74, Weight per Dozen, 16 Pounds. . . . . each \$12.20

## No. 107-20 Klein's Di-Stock Sleeve Twisters



For all types of oval or double tube copper or aluminum sleeves from No. 4 B&S solid to No. 3/0 B&S strand. Tubular handles, 7/8-

inch diameter, threaded onto head. Readily attached or removed. Space between yokes, 3 inches, usually sufficient for three sleeve openings.

Head readily and securely tightened onto sleeve by thumb nut operating in hinged yoke. Central position of head makes for ease in keeping sleeve straight while twisting joint and provides ample leverage. Held in blank and finished with sleeve openings as ordered.

Length overall, 23 1/2 inches. Weight, 3 1/4 pounds.

No. 107-20. . . . . each \$23.00

## No. 107-34 Klein's Di-Stock Sleeve Twister



Head forged from high grade tool steel and heat treated for maximum toughness and wear. A hand operated cam lever closes the head securely on the sleeve—no thumb screws to bother with.

Tubular handles are furnished.  
No. 107-34, Weight, 9 Pounds. . . . . each \$40.20

## Klein's Chicago Grips

Main body piece and lever are forged steel. Draw parts are wrought steel. Gripping jaws are machined smooth.

### No. 1613—For Bare Wire



Bronze lining of jaws prevents slippage and consequent surface abrasion of conductor or strand.

No.	Each	B. & S. WIRE SIZE		Approx. Max. Open. In.	Wt. Lb.
		Maximum	Minimum		
1613-30	\$5.20	6 Solid (.162")	12 Solid (.081")	.22	1 1/2
1613-30B	7.70	Same as above, with Bronze Lined Jaws			
1613-40	8.20	0 Strd. (.373")	10 Solid (.102")	.44	3
1613-40B	13.80	Same as above, with Bronze Lined Jaws			
1613-50	13.80	4/0 Solid (.460")	6 Solid (.162")	.52	8
1613-50B	23.00	Same as above, with Bronze Lined Jaws			

### No. 1611—For Insulated Wire



Similar to No. 1613, but with the necessary extra width in jaws "lipped" out to avoid unnecessary weight.

The upper jaw has saw-tooth gripping notches.

No.	Each	B. & S. WEATHERPROOF WIRE SIZE		Approx. Max. Open. In.	Wt. Lb.
		Maximum	Minimum		
1611-20	\$7.70	4 Solid (.391")	10 Solid (.250")	.50	3
1611-30	9.70	1 Solid (.500")	6 Solid (.313")	.56	3 1/2
1611-40	15.30	2/0 Strd. (.672")	1 Solid (.500")	.75	7 1/2
1611-50	15.30	4/0 Strd. (.860")	2/0 Solid (.672")	.94	7 1/2

No. 1611 Series can be furnished with bronze lined jaws to special order. Order as 1611-20B, 1611-30B, etc.

## Klein's Chicago Grips For Aluminum Cable Steel Reinforced



Main body piece and lever are forged steel. Draw parts are wrought steel. Gripping jaws are machined smooth.

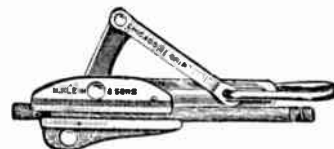
Rivets are machine turned. Weight, 7 1/2 pounds.

No.	Each	For Cable	Approx. Maximum Safe Opening Load	
			Inches	Lb.
1626-39	\$20.50	3/0 to 300,000 C.M., A.C.S.R.	.75	3750
1626-39B	26.10	With Bronze Lined Jaws	.75	3750
1626-40	20.50	4/0 to 500,000 C.M., A.C.S.R.	.97	3750
1626-40B	26.10	With Bronze Lined Jaws	.97	3750
*1626-AB	33.20	With Bronze Lined Jaws, 3/0 to 300,000 C.M., AC.S.R.	.75	8000

\*Furnished to order. Alloy steel, heat treated.

## Klein's Chicago Grips

### For Hollow Core and Other Large Diameter Conductors



In stock at factory in blank and finished to fit any diameter conductor up to 1 1/2 inches. Jaws lipped out to avoid excess weight.

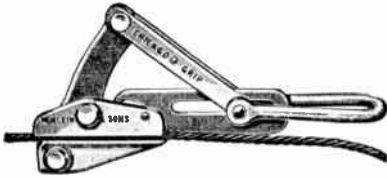
Forged from alloy steel, heat treated, galvanized finish. Bronze lined jaws.

Maximum safe load up to 25,000 pounds.

No.	Each	FOR CABLE			Max. Open. In.	Approx. Wt. Lb.
		Hollow Conductor C.M.	Copper Strand C.M.	A.C.S.R. C.M.		
1628-30B	\$138.00	350,000-1,000,000	550,000-1,250,000	477,000-1,033,500	1.35	28
1628-40B	\$141.20	1,000,000-1,250,000	1,250,000-1,750,000	1,033,500-1,590,000	1.60	32

**Klein Improved Chicago Grips**

For Messenger, Guy Strand and Conductors  
Up to 1/2-Inch Diameter



For use on No. 4 B. & S. solid copper to 4/0 B. & S. 7-strand copper; and No. 6 to 3/0 A.C. S.R.

Forged from alloy steel, heat treated.

The jaws have been lengthened and leverage increased. Maximum opening, .58 inch. Safe load, 8000 pounds. Approximate weight, 6 pounds.

No. 1628-5, without Bronze Lined Jaws.....each \$16.10  
No. 1628-5B, with Bronze Lined Jaws.....each 20.10

**Klein's Chicago Grips**

For Messenger and Guy Strand, Heavy Cable, Etc.

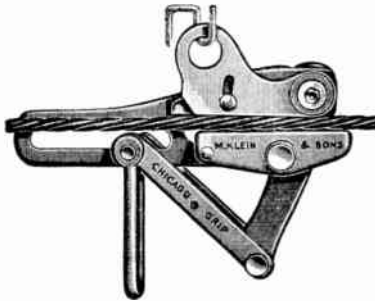


Forged from alloy steel, heat treated. Gripping jaws are machined smooth. Safe load, 15,000 pounds.

No.	Each	FOR CABLE			Max. Open. In.	Approx. Wt. Lb.
		Galv. Steel Strand In.	Copper Strand	A.C.S.R. No.		
1628-16	\$46.00	5/16-	1/0 B.&S.-	2-4/0	.69	15 1/2
*1628-16B	53.70	5/8 *	300,000 C.M.	*	.69	15 1/2
*1628-16BP	61.30	...	1/0 B.&S.-	2-550,000 C.M.	1.06	17

\*With bronze lined jaws. †C. M.

**Klein's Hot Line Chicago Grips**



Designed especially for use on hot line work. An eye integral with safety latch provides ready means for placement with hot line stick.

Forged from alloy steel, heat treated, galvanized finish. Bronze-lined jaws.

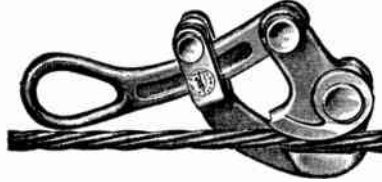
Safe load 1628-3BH up to 4,000 pounds; 1628-5BH, 8,000 pounds.

No.	Each	For B.&S. Wire	Max. Open. In.	Approx. Wt. Lb.
1628-3BH	\$14.70	1/0 Strand to 10 Solid	.44	3
1628-5BH	25.30	4/0 Strand to 4 Solid	.58	6

**Klein's Chicago Grips With Bronze Lined Jaws**

Construction engineers are demanding grips that will not slip under heavy loads and which will not damage the conductor or strand. These requirements are met by welding a lining of bronze into the jaws of standard Chicago Grips, indicated by "B" following catalog number.

**Klein Haven's Steel Grips**



All parts are solid steel drop forgings, heat treated. Eye is pear shaped, and a roller fitted to body yoke makes motion free and allows load to come on smoothly. Instantaneous hold, yet a shake on tackle rope releases grip. Will not slip due to hand cut serration in face of eccentric. Galvanized finish.

No.	1604-10	1604-20
Each	\$4.80	7.50
For Wire Size, and Smaller	No. 4 B.&S.	1/2 In.
Approx. Maximum Opening	15/64 (.24)	17/64 (.53)
Approx. Minimum Opening	1/16 (.06)	3/64 (.14)
Width of Eye	1/8	1 1/8
Weight per Dozen	12	28 1/2

**No. 1625-20 Klein's Improved Haven's Grips**



For wires 3/4 inch to No. 2 B. & S. For use on solid or strand wires. Swing latch engages stud on lower jaw, preventing any distortion of body or cross bolt under load. For use on trolley wire; is weatherproof. Can be readily adapted, at slight extra cost, for hot line work on weatherproof (insulated) conductors.

Approximate maximum opening, 25/64 inch (.78); approximate minimum opening, 1/2 inch (.22). Parts are alloy steel drop forgings properly heat treated. Swing latch holds tool on line in position for pull. Eye is pear shaped 1 1/4 inch wide. Hand cut serration in face of eccentric assures a hold that cannot slip. Galvanized finish.

No. 1625-20, Weight per Dozen, 45 Pounds... each \$16.10

**No. 1700-30 Klein's Chicago Linemen's Tools**



This tool is a combination of No. 1613-30 Chicago Grip and No. 1702-20 Howes Wire Tool. It is largely used by telephone companies.

Swivel hook, main body piece and lever of grip are forged steel. Draw parts are wrought steel gripping. Jaws are machined smooth. Rivets machine turned.

For No. 6 wire and smaller down to No. 13. Other sizes of grips can be furnished in this combination to order only.

Weight, 4 pounds.

No. 1700-30.....each \$16.80  
Strap for No. 1700-30, 1 1/4 In. x 7 Ft.....each 4.90

**No. 1702-20 Klein's Howes Wire Tools**



The strap is harness leather 1 1/4 inches wide and 7 feet long. At one end a forged steel swivel hook is provided with opening to permit anchoring round insulator pin. The forward end has a locking device to hold the load at any distance and is so arranged that a wire grip can be readily attached.

The metal parts are galvanized.

Weight per set, 2 1/2 pounds.

No. 1702-20.....each \$12.30  
Extra Strap, 1 1/4 Inches x 7 Feet.....each 4.90

## No. 1802 Klein's Heavy Block Tackles

### Drop Forged Hooks and Eye



Consist of two special double sheave blocks. Spring guarded snap hooks do away with taping. Pulleys are bronze bushed and self lubricating.

Furnished with 30 feet best quality Manila rope, 4 strand.

No. ....	1802-40	1802-50	1802-60
Each.....	\$30.50	33.70	35.00
Size Rope.....inches	1/2	5/8	3/4
Weight Each..... pounds	15 1/2	18	19

## No. 1803 Klein's Hand Lines

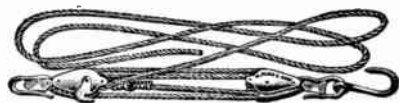


Best quality manila rope which will not twist. Spliced to eye of snap hook with galvanized steel thimble. Snap hook is drop forged with round eye, opens to 3/4 inch.

Complete with 3/8-inch, 4-strand manila rope and No. 443-A snap.

No. 1803-60, With 75-Foot Rope, Weight Each, 3 1/2 Pounds.....	each \$9.20
No. 1803-120, With 120-Foot Rope, Weight Each, 5 1/4 Pounds.....	each 12.40

## No. 1802-30 Klein Self-Locking Block Tackles



Consists of light steel galvanized shell block, fitted with a snubbing hook to lock load in any position. Block is arranged with spring guard snap hooks.

When pulling up wire to make a splice it may be used with two grips attached to the snaps, or with one grip and hook No. 258 to anchor to an insulator pin or other convenient anchorage. Hook is specially shaped to fit under double petticoat insulator on cross arm.

Furnished with 25 feet of 3/8-inch, 4-strand manila rope and detachable anchor hook. Shipped unassembled

Weight each, 3 pounds.

No. 1802-30.....each \$10.20

## No. 443-A Klein's Snaps For Hand Lines and Light Hoists



Can be used on all light hoisting, for roofers, etc. Drop forged with galvanized finish. Hook and eye are integral drop forging. Duck bill nose closes around latch.

Will carry loads up to 2000 pounds. When fitted to a 4-inch tackle block, it provides an ideal means for connecting with come-along; no taping is necessary.

Opening will take up to 3/4 inch. Eye, 1 1/16 inches. Length overall, 5 1/2 inches.

Weight per dozen, 6 1/2 pounds.

No. 443-A.....each \$2.90

## No. 258 Klein's Anchor Hooks for Tackles



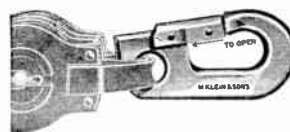
Solid steel drop forging. Overall length, 5 1/2 inches x 3 1/4 inches across the hook. Size opening, 2 inches; inside diameter of eye, 5/8-inch.

Galvanized finish.

Weight per dozen, 4 pounds.

No. 258.....each \$1.70

## No. 455 Klein Heavy Duty Utility Snap Hooks



Will not come loose on a slacked line.

Made of drop forged steel and will carry a working load of 8000 pounds with an adequate safety factor.

May be used on any conventional steel block 4 inches or smaller, or on pulling tackle or snatch blocks by simply replacing the open hook with the Klein snap hook.

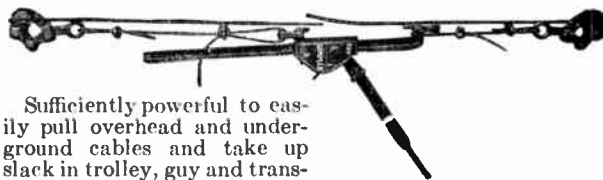
Length, 4 1/2 inches.

Weight, 1 pound.

No. 455.....each \$4.00

## No. 324 Simplex Aerial Cable and Wire Tensioning Jacks

Capacity, 2 Tons



Sufficiently powerful to easily pull overhead and underground cables and take up slack in trolley, guy and transport wires.

The speed trigger permits instant slack take up at any point when the jack is not under load. Steel lever furnished with safety spring clip that prevents it from falling.

Easy to set up because of its non-flexible rack bar. Exerts a direct line pull.

For tensioning bare wire, use two bare wire grips and two wire slings. When used for splicing overhead cable, special equipment consisting of two double eye split cable grips, two 3-bolt clamps and two wire slings, are required.

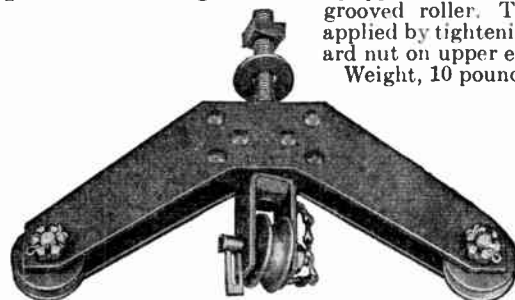
No. ....	324
Each.....	\$32.00
Capacity.....	2 tons
Travel.....	20 1/4 inches
Weight.....	13 pounds

## No. 869 Diamond Slack Pullers

Sufficient slack can be temporarily taken up in messenger strand for making splices or repairs in aerial cable.

Steel rollers in each end of tool for support on messenger strand. Lifting screw is equipped with a removable grooved roller. Tension is applied by tightening standard nut on upper end.

Weight, 10 pounds.



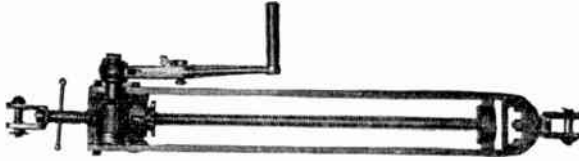
No. 869 Black Finish.....each \$15.00



**Matthews Quick Release Slack Pullers**



No. 730



No. 732

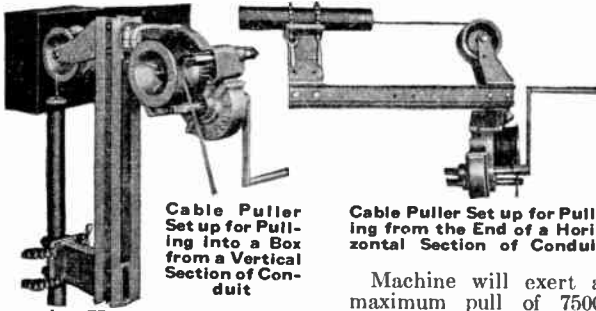
Enables one man to do the work of four when taking the slack out of guy strand, messenger wire or changing strain insulators, or for splicing trolley wire, telephone or power cable under tension; also used for pulling back underground cable. Takes the place of block and tackle. One man can easily pull 3000 pounds with the No. 730, and 6000 pounds with the Nos. 731 or 732. No slack is lost in dead ending as strain is held to the exact point pulled.

With the new quick release feature, when the entire take-up has been used, the wire is temporarily dead ended and the lock released. This permits the slack puller to be immediately extended to its maximum or any intervening length.

No.	Description	Ship. Wt. Lb.	Each
730	Maximum Take-Up, 19 Inches	17	\$56.00
731	Same as No. 730, Except That Clevis is Substituted for Hook	17	60.00
732	Same as No. 731, Except That it Also Has Quick Take-Up Feature	17	66.00

The 730 and 731 do not have the quick take-up feature.

**No. 765 Greenlee Cable Pullers**



Cable Puller Set up for Pulling into a Box from a Vertical Section of Conduit

Cable Puller Set up for Pulling from the End of a Horizontal Section of Conduit

Machine will exert a maximum pull of 7500 pounds. Has two speeds. Dog on back gear prevents unwinding of cable. Shaft extends from both sides of machine for one or two operators. Two cranks supplied, but ratchet wrenches can be used. Electric power unit can be used for driving.

The 6½-inch diameter tension drum clamps to extension on roller bracket where it can be swiveled in complete circle. Cut steel gears. Cast parts are of semi-steel. Base is provided on drum for bolting. Roller bracket has two roller positions. Roller has 5-inch diameter and 3-inch width to clear basket connection and electric cable.

Frame is formed from two 36-inch sections of channel iron. In exposed work, clamping is done directly on to conduit through which cable is to be pulled. Clamping device consists of a bracket on frame and two lengths of pipe wrench chain. Rated for conduit from 2 to 5 inches.

For pulling cable into concealed conduit, a flexible elbow can be furnished. This attachment consists of a flexible elbow, 4-inch master sleeve, bushings for 2, 2½, 3 and 3½-inch conduit, two unions for small bushings to permit using them in close quarters and a 4 to 2-inch reducer.

A ½-inch 6-19 strand cable is recommended.  
 No. 765 Cable Puller with 2 Cranks, without Cable, Wt., 225 Lb. .... each \$160.00  
 Flexible Elbow Attachment Comp., Wt., 86 Lb. ea. 40.00

**No. 201 Klein Side Cutting Pliers**



For use on bare and insulated wire. Curved handles. Powerful leverage and keen cutting knives.

No.	201-5	201-6	201-7	201-8	201-9	
No. 201	each	\$5.50	6.00	6.50	7.50	8.50
Size	inches	5	6	7	8	9

**No. 201 Klein Side Cutting Pliers N. E. Type**



Nose and all edges rounded and shoulder of head removed.

No.	201-5NE	201-6NE	201-7NE	201-8NE	201-9NE	
Each	\$5.50	6.00	6.50	7.50	8.50	
Size	in.	5	6	7	8	9
Wt., Doz. lb.	3	5¼	7¼	11¼	13½	

**No. 212 Klein Side Cutting Pliers With Sleeve Joint Twisters**



For use on bare and insulated wire, with sleeve joint twister.

No.	212-6	212-7	212-8	
Each	\$6.50	7.50	8.50	
Size	inches	6	7	8

**No. 212 N. E. Klein's Side Cutting Pliers N. E. Type with Sleeve-Joint Twister**



For use on bare and insulated wire by linemen, electricians and mechanics. Opening provided for twisting double tube sleeve joints.

Polished head, handle temper blued.  
 Packed 6 in a standard package.

No.	212-6N.E.	212-7N.E.	212-8N.E.	
Each	\$6.50	7.50	8.50	
Size	in.	6	7	8
Sleeve Opening, N.B.S.	14 & 17	14 & 17	12	
Sleeve Opening, B.&S.	12(.045")	12(.045")	10(.104")	
Weight per Dozen..lb.	5¼	7¼	11¼	

**No. 202 Klein Oblique Cutting Pliers**



Lap joint type. Cuts close. The narrow head permits its use in confined places.

No.	Each	Size In.
202-5	\$5.00	5
202-6	5.10	6

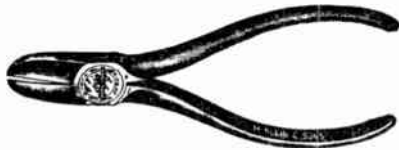
**No. 202 Klein's Narrow Nosed Oblique Pliers**



For telephone or radio work. Has narrow hinge and pointed nose, polished head and tempered blued handles.

No. 202-5A, 5-Inch Size; Wt. per Doz., 4 Lb.	each	\$5.00
No. 202-6A, 6-Inch Size; Wt. per Doz., 4¼ Lb.	each	5.10

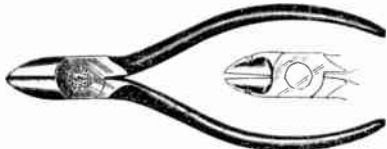
## No. 245 Klein's Oblique Cutting Pliers



Can easily be carried in vest pocket.  
For electricians, telephone men and switchboard builders.

No. 245-5, 5-Inch, Weight per Doz., 3 Lbs....each \$5.00

## No. 245-5-W Klein's Oblique Pliers



For removing acetate cellulose insulation from .050 and .058 wires.  
Has two W shaped notches at back of cutting knives.  
Length, 5 inches.

No. 245-5-W, Weight per Dozen, 3 Pounds.....each \$5.50

## No. 240-S Klein's Oblique Cutting Pliers

With Wire Stripping Notch and Sleeve Openings



For the use of electricians, telephone men, and switchboard builders. Stripping notch provides a means for crimping on .032-.025-inch single tube

copper sleeves often used in telephone work for splicing .032-inch bridle wire and .025-inch inside wire.

Size, 5 inches. Polished head, handle temper blued.

Weight per dozen, 3 3/4 pounds.

No. 240-5-S.....each \$5.40

## No. 240 Klein's Oblique Cutting Pliers

With Wire Stripping Notch



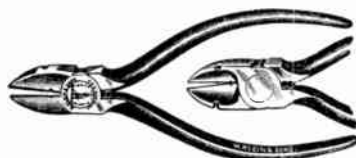
Has a notch in the cutting knives for stripping small wires. Notch is placed 3/16 inch from hinge and has diameter of .052 inch. Can be used for crimping single tube copper sleeves.

Polished head and temper blued handles.  
Packed 6 in box.

No. ....	240-5	240-6
Each.....	\$5.40	5.50
Size.....	5	6
Weight per Dozen.....	3 3/4	4

## No. 202-SW Klein's Oblique Cutting Pliers

With W Stripping Notches, Sleeve Openings and Skinning Hole—Bell System Type



An all-purpose cutting tool for telephone installation and maintenance work. The W notches will slit acetate cellulose and other insulations from wires up to .058-inch o.d. A stripping

hole .052-inch diameter is provided in blades which also provides means to crimp on .032 and .025 single tube copper sleeves. Sleeve openings in handles.

Size, 5 1/2 inches. Polished head, handle temper blued.

Weight per dozen, 3 3/4 pounds.

No. 202-5SW.....each \$5.80

## No. 242-6 Klein Oblique Cutting Pliers



For use where it is not necessary to reach into confined spaces.

Polished head, handles blued.  
Size, 6 inches,  
Packed 6 in box.

No. 242-6, Weight per Dozen, 4 1/4 Pounds.....each \$5.50

## No. 220-7 Klein's Oblique Cutting Pliers With Handform Handles



A 7-inch plier made especially for automotive mechanics.

Useful for pulling cotter pins, for

choke wires, etc.

Hammer forged from high grade tool steel of special analysis. Knives are close cutting and carefully matched for their full length.

Individually fitted, tempered, adjusted and tested.

Handform handles provide full leverage and comfort for continual use.

Polished head, handle temper blued.

Packed 6 in a standard package.

Weight per dozen, 7 pounds.

No. 220-7.....each \$6.50

## No. 301 Klein's Long Nose Pliers

Without Cutters



For stripping insulated wire ends. Point, 3/32 inch round.

Extra long nose, 2 3/4 in.

No. 301-5, 5-Inch Size; Wt. per Doz., 3 1/4 Lb...each \$4.80

No. 301-6, 6-Inch Size; Wt. per Doz., 3 3/4 Lb...each 4.90

\*No. 301-7, 7-Inch Size; Wt. per Doz., 4 1/4 Lb...each 5.00

## No. 203 Klein Long Nose Side Cutting Pliers

With Cutting Knives



For stripping insulated wire ends. Point, 3/32-inch round.

\*Extra long nose, 2 3/4 in.

No. 203-5, 5-Inch Size; Wt. per Doz., 3 1/4 Lb...each \$4.80

No. 203-6, 6-Inch Size; Wt. per Doz., 3 3/4 Lb...each 4.90

\*No. 203-7, 7-Inch Size; Wt. per Doz., 4 1/4 Lb...each 5.00

## No. 303-6 Klein's Long Needle Nose Pliers



Long nose permits use in confined spaces. Has polished head and handles temper blued.

Weight per dozen, 3 3/4 pounds.

No. 303-6, Length, 6 Inches.....each \$4.90

## No. 317 Klein's Chain Nose Pliers

Without Cutters



For general use. Size, 6 inches.

Hammer forged from high grade tool steel. Polished head, handles temper blued.

No. 317-6, Weight per Dozen, 3 1/2 Pounds.....each \$4.90

**No. 217 Klein's Chain Nose Pliers**  
Side Cutting



With side cutting knives. Size, 6 in. Polished head, handles temper blued. Weight per dozen, 3½ pounds. No. 217-6 ea. \$5.50

**No. 313 Klein's Heat-Coil Pliers**



Particularly adapted for the removing of heat coils from switchboards and telephone terminals, as the points of the

nose are shaped to fit the coils. This tool is also serviceable in removing caps from batteries or from binding posts, as well as holding any cylindrical object.

Size, 6 inches.

Polished head, handles temper blued.

Packed 6 in a standard package.

Weight per dozen, 3¾ pounds.

No. 313-6.....each \$5.00

**No. 305-6 Klein's Long Flat Nose Pliers**



Has long wide flat nose. Inside of jaws left smooth if desired. Has polished head and

handles temper blued. Weight per dozen, 3½ pounds.

No. 305-6, Length, 6 Inches.....each \$4.70

**No. 206-6 Klein Side Cutting Pliers**  
Long Flat Nose



Long wide cutting knives. Smooth jaws if desired. Has polished head, handles temper

blued. Length, 6 inches. Packed 6 in a box. No. 206-6, Weight per Dozen, 3½ Pounds.....each \$5.50

**Klein's Long Flat Nose Spring Adjusting Pliers**



Hollow ground on outside of jaws to reach between and grasp springs easily.

No. 311-5½, 5½ Inch, Weight per Doz., ¾ Lbs. each \$4.90

**No. 304-6 Klein Long Duck Bill Pliers**



For general use. Jaws are wider and heavier than those of flat nose pliers. Has polished head and handles temper blued.

Length, 6 inches. Weight per dozen, 3½ pounds. No. 304-6.....each \$4.90

**No. 205-6 Long Duck Bill Side Cutting Pliers**



General use. Jaws are wider and heavier than those of flat nose plier. Has polished head and handles

temper blued. Weight per dozen, 3 pounds.

No. 205-6, Length, 6 inches.....each \$5.50

**No. 302-6 Klein Long Curved Nose Pliers**



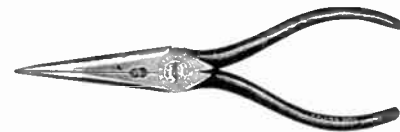
Angle gives full clearance. Length, 6 inches.

Weight per dozen, 3 pounds.

No. 302-6

...each \$5.50

**No. 316-S Klein's Long Nose Sleeve Pliers**  
Bell System Type



Sleeve openings permit twisting No. 17 N.B.S. and smaller copper sleeves. Point, ½ inch round.

No. 316-S, 6-Inch Size; Wt. per Doz., ¾ Lb....each \$4.90

**No. 301-C Klein's Long Nose Cord Crimping Pliers**



For telephone switchboard work; oval groove for crimping telephone cords. Point, ½ inch round.

No. 301-C, 6-Inch Size; Wt. per Doz., ¾ Lb....each \$4.90

**No. 039 Klein's Cord Tip Closing Pliers**



The jaws of this tool are designed to permit its use as a hand press for closing cord tips such as W.E. 101 and 102. The circular opening in the jaws is correctly

sized to insure a perfect connection when the closure is completed.

Size, 5 inches.

Polished head, handles temper blued.

Packed 6 in a standard package.

Weight per dozen, 3 pounds.

No. 039.....each \$6.00

**No. 202-5-AV Klein's Oblique Cutting Pliers**  
Narrow Head



For heavy cutting. Hammer forged from high grade tool steel. With volute spring for bench work.

No. 202-5-AV, 5½-Inch, Weight per Doz., 4 Lb. each \$6.50

**No. 245-5-V Klein's Oblique Cutting Pliers**

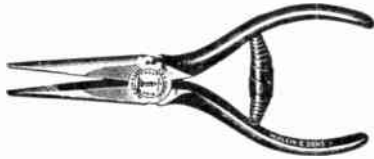


For electricians, telephone men, etc. Hammer forged from high grade tool steel. With volute spring for bench work.

No. 245-5-V, 5-inch, Weight per Doz., 3 Lb....each \$6.50



### No. 301-5-V Klein's Long Nose Pliers

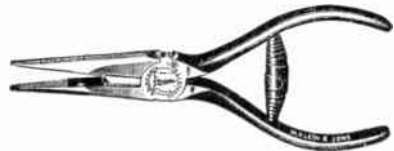


**Without Cutting Knives**

Hammer forged from high grade tool steel. With volute spring for bench work.

No. 301-5-V, 5-Inch, Weight per Doz., 3½ Lb. . . each \$6.50

### No. 203-5-V Klein's Long Nose Cutting Pliers



For production bench work where a combination of long jaws with cutting knives is required. Fitted with volute spring.

Length, 5¾ ins.

No. 203-5-V, Weight per Dozen, 2¾ Pounds . . . each \$7.50

### No. 1550-2 Klein's Xela Electricians' Knives



A handy combination for the electrician, combining an emergency screwdriver, a knife blade for cutting or stripping wire; safely locked so that it cannot close during use.

Has a well-tempered cutlery steel blade, a strong joint, a solid well-proportioned hand fitting cocobola handle.

Screwdriver blade is locked when open; to unlock a slight side pressure of the thumb releases the lock and permits the blade to be closed readily.

No. 1550-2, Double Blade. . . . . each \$3.20

### Xela Electrician's Scissors



Made of high grade steel properly tempered.

Has screw hinge.

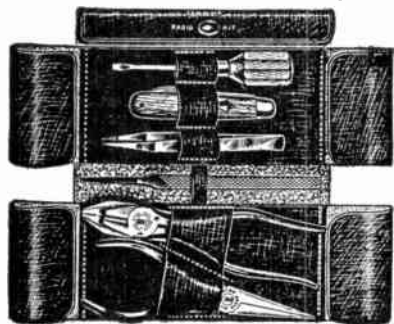
Nickel plated finish.

Size, 5 in.

Weight per dozen, 2 pounds.

No. 2100-5 . . . . . each \$3.30

### No. 1305-2 Klein's Inspectors' Tool Kits



Solid black leather strongly stitched, reinforced back. Fitted with one each of the following tools: No. 201-6 side-cutting plier; No. 301-5 long nose plier; No. 1550-2 Xela electricians' knife; 1 pair electricians' tweezers; 1 special file; 1 special screwdriver.

A handy assortment to fit the pocket. Weight, 1½ pounds.

No. 1305-2. . . . . each \$18.00

### No. 5139 Klein's Canvas Tool-Packs

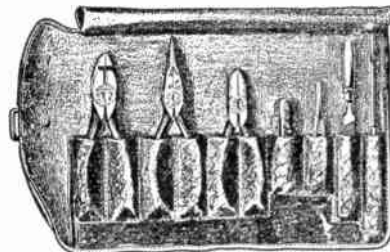


Made of sturdy, brown canvas. A heavy zipper instantly closes or opens the full length mouth. Especially useful for a selection of frequently used small tools.

Weight per dozen, 3 pounds.

No. 5139, Size, 6x12 Inches. . . . . each \$1.70

### Klein Tool-Kits



Designed for mechanics, service men and electricians.

Contains long nose plier, special side cutting plier, diagonal cutting plier, electrician's knife, a pair of electrician's tempered tweezers,

4½-inch file and a screw driver with insulated handle. All contained in a Keratol roll fastened with a strong strap and buckle.

No. 1305-33A. . . . . each \$23.00

### No. 5116 Klein's Detachable Plier Holsters



Made of heavy harness leather with loop to slip over belt.

Carries 7, 8 or 9-inch side cutting pliers.

Mouth of pocket is framed to hold open position permanently.

Length, 10 inches.

Weight per dozen, 6 pounds.

Price, No. 5116. . . . . each \$3.50

### Leather Plier Pockets



No. 5107



No. 5112

Made of good quality leather. Has slits for belt.

No. 5107, Weight per Dozen, 2½ Pounds. . . . . each \$2.00

No. 5112, Weight per Dozen, 2½ Pounds. . . . . each 2.80

### Klein Combination Tool Pockets



No. 5118-K

Made of heavy harness leather. Opening at bottom prevents accumulation of dirt or water. Top flap of double thickness leather is for riveting to belt.

Space provided for pliers fits 6, 7, 8 and 9-inch side cutting pliers.

**No. 5118-K For Pliers and Knife**

Weight per dozen, 7½ pounds.

No. 5118-K, Size, 4¾x8 In. . . . . each \$3.30

**No. 5118-S For Pliers and Screwdriver**

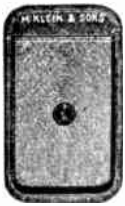
Weight per dozen, 5½ pounds.

No. 5118-S, Size, 4x8 In. . . . . each \$2.80

**No. 5118-R For Pliers and 6-Foot Rule**

Weight per dozen, 7½ pounds.

No. 5118-R, Size, 4¾x8 Inches. . . . . each \$3.30



**No. 5111 Klein's Hip Pocket Tool Cases**

Suitable for carrying pliers or other tools in hip pocket. Prevents cutting of clothes, or possible injury to the person. Made of black leather, 5x7 inches. Weight per dozen, 5½ pounds.

No. 5111.....each \$2.80

**Klein's Rubber Glove Pouches**



Scotch chrome leather pocket for carrying rubber gloves. Comes equipped with snap and D ring, ready to attach to body belt.

No.....	5120-9	5120-15
Each.....	\$5.00	6.80
Size.....in.	7½x9	7½x15
Weight per Doz.....lb.	4½	7

**No. 1515-1 Klein's Cable Sheath Splitting Knives**



Cutlery steel blade, oil tempered. Riveted, harness leather handle.

Weight per dozen, 12 pounds.

No. 1515-1.....each \$4.90

**No. 1560-3 Klein Linemen's Skinning Knives**



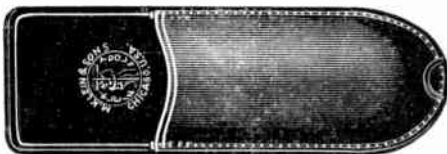
In constructing this knife, the shape of the blade has been considered to make it a safety tool.

Half hard rubber handle is molded on securely and provides adequate insulation and a positive grip.

Hole in handle is through the solid rubber. Length of blade, 3 inches; overall length, 8 inches. Weight per dozen, 4¼ pounds.

No. 1560-3.....each \$3.50

**No. 5163 Klein Skinning Knife Sheaths For No. 1560-3 Knife**

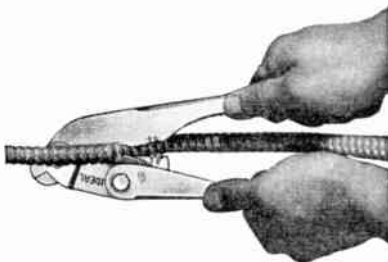


Can be riveted to belt or carried in hip pocket. Opening at bottom to prevent collection of dirt and permit escape of water.

Size, 3x9 inches. Weight per dozen, 4 pounds.

No. 5163.....each \$2.20

**No. 45-079 BX Armor Cutters**



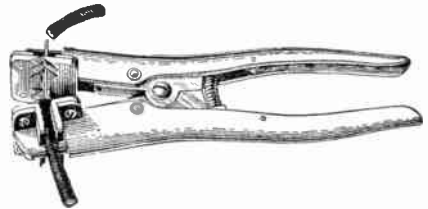
A lightweight pocket tool that cuts armor perfectly in one operation. For use on either two or three-wire, No. 14 or No. 12 cable. Eliminates nicked wires or shorts.

No. 45-079.....each \$3.83

**Ideal Wire Strippers**

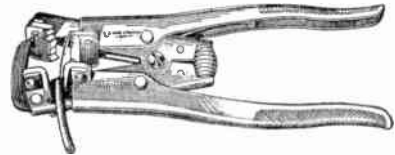
For Solid or Stranded Wire

**Standard Model**



Cutting edges are shielded. Blind centers of the V-notches on blades prevent cutting or scarring of wire.

**Automatic Model**



Lever stops return of arms until wire is removed after stripping, then they are quickly snapped back to normal.

Lever will not operate unless wire with insulation .050 inch or larger is inserted between grippers. When no wire is inserted, lower gripper moves upward when handles are squeezed, pushing trigger and lever up and out of action.

No.	Standard Each	Automatic Each	Extra Blades per Set	Strips Wire Gage	Shipping Weight Pounds
Universal	.....	\$5.65	\$1.18	10-22	1½
0	\$4.71	5.65	1.18	20-30	1½
01	4.71	5.65	1.18	16-22	1½
1	4.71	5.65	1.18	12-18	1½
2	4.71	5.65	1.18	10-16	1½
3	4.71	5.65	1.18	8-14	1½

**No. 45-018 Ideal Cable Rippers**

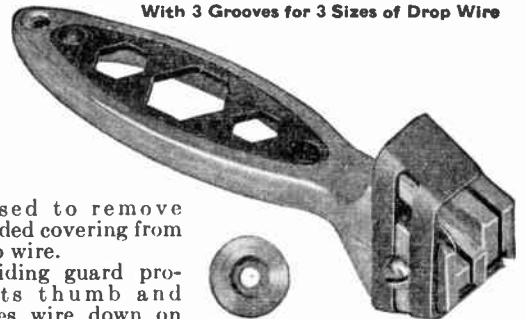


For use on non-metallic sheathed duplex cable or lead covered cable. Ripper is squeezed onto the cable and pulled, ripping the cable with one simple operation. Can also be used for ripping the outer sheathing of other cords, lead cables, etc., where outside diameter is not greater than 5/8 inch. Weight, 2 ounces.

No. 45-018.....each \$3.35

**No. 779 Diamond B Braid Stripper**

With 3 Grooves for 3 Sizes of Drop Wire



Used to remove braided covering from drop wire.

Sliding guard protects thumb and forces wire down on cutting blade. Blade can be rotated to new position when used section becomes dull.

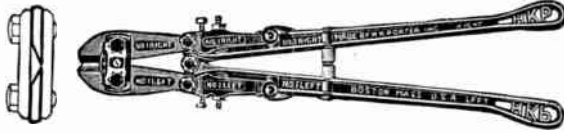
Handle is equipped with steel wrench plate with hexagonal openings of 3/8, 1/6, and 5/8 inches for bridging connectors, nuts or heads.

Made of die-cast aluminum with natural finish. Packed 12 to a carton. Weight, 1¼-pound.

No.	Per Dozen	Width, In.	Depth of Cut, In.
779	\$33.00	.270	.060
		.330	.080
		.375	.110



## Porter Rigid and Swivel Type Clipper Cut Bolt Clippers



### Rigid Type

Ball and socket joints and positioning spring permit swivel type flexible bolt clipper to cut at any angle. The cutting jaws of rigid type are firmly fixed in line with the handles and are beveled almost entirely from one side for close cutting, such as clipping of bolts, and are generally specified where a tool is required for all around work in softer metals.



### Swivel Type

Swivel type is recommended for the same close cutting requirements, but also has the added utility of the 180° arc wrist action.

### Rigid Type

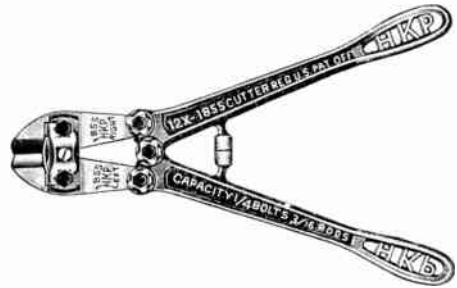
No.	Complete Tool Each	*Complete Cutter-heads Each	*Jaws per Pair	Approx. Length of Tool in Inches	Approx. CAP., IN. An-nealed Bolts in Thrd.	Soft Rods	Approx. Wt. Lb.
14-OK	\$7.50	\$4.70	\$4.00	14	1/4	3/16	2 1/4
0-NE	8.50	5.20	4.40	18	5/16	1/4	3 1/4
1-NE	10.25	6.20	5.20	24	3/8	5/16	5 1/4
2-NE	12.75	7.60	6.70	30	1/2	3/8	8 1/2
3-NE	16.75	9.70	8.50	36	5/8	1/2	12 1/2
4-AR	22.50	11.90	10.10	42	3/4	5/8	17 3/4

### Swivel Type

0-SH	\$12.25	\$5.20	\$4.40	19	5/16	1/4	4
1-SH	14.00	6.20	5.20	25	3/8	5/16	6 1/4
2-SH	17.00	7.60	6.70	31	1/2	3/8	9 3/4

\*Same jaws and heads can be used for either rigid or swivel.

## No. 12 Porter Bolt Clippers



Capacity up to 1/4-in. annealed bolts in the thread, 3/16-in. soft rods. Stops have rubber buffers. Length, 12 inches.

No. 12, Approx. Weight, 1 1/2 Pounds..... each \$4.75  
 Jaws..... per pair 3.20  
 Cutter-head..... each 3.80

## Porter Electric Wire Cutters

### Not Insulated

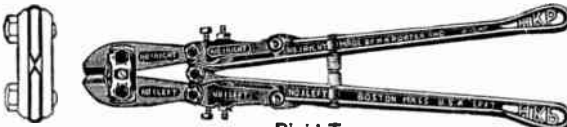


Jaws are made of steel forgings. Handles are made of malleable iron.

With wide jaw opening for heavily insulated wire on lines which are dead.

No.	1X	2X	3X
Complete Tool..... each	\$8.80	\$10.90	\$14.10
Cutterhead, Complete..... each	5.40	6.70	8.20
Jaws..... per pair	4.50	5.70	7.10
Approx. Length..... inches	25	31	36
Jaw Opening..... inches	3/4	1 1/8	1 1/4
Capacity Solid Copper Wire..... in.	3/8	1/2	5/8
Approx. Weight..... pounds	5 1/4	8 1/2	12 1/2

## Porter Rigid and Swivel Type Center Cut Bolt Clippers



### Rigid Type

Ball and socket joints and positioning spring permit swivel type flexible bolt clipper to cut at any angle. Cutting jaws of rigid type firmly fixed in line with handles and are beveled equally, bringing cutting edge at center of jaw. Recommended where close cutting is not a requirement. Cuts materials up to 300 Brinell hardness.



### Swivel Type

Swivel type used for same type of work. Permits ready application of full operating pressure in close quarters. Recommended for building construction.

Specify center cut round edge type for cutting reinforcing rods and for use in steel and wire mills.

### Rigid Type

No.	Complete Tool Each	*Complete Cutter-heads Each	*Jaws per Pair	Approx. Lgth. of Tool in Inches	Approx. CAP., IN. An-nealed Bolts in Thrd.	Soft Rods	Approx. Wt. Lb.
14-OK-CC	\$7.50	\$4.70	\$4.00	14	1/4	3/16	2 1/4
0-NE-CC	8.50	5.20	4.40	18	5/16	1/4	3 1/4
1-NE-CC	10.25	6.20	5.20	24	3/8	5/16	5 1/4
2-NE-CC	12.75	7.60	6.70	30	1/2	3/8	8 1/2
3-NE-CC	16.75	9.70	8.50	36	5/8	1/2	12 1/2
4-AR-CC	22.50	11.90	10.10	42	3/4	5/8	17 3/4

### Swivel Type

0-SH-CC	\$12.25	\$5.20	\$4.40	19	5/16	1/4	4
1-SH-CC	14.00	6.20	5.20	25	3/8	5/16	6 1/4
2-SH-CC	17.00	7.60	6.70	31	1/2	3/8	9 3/4

\*Same jaws and heads can be used for either rigid or swivel.

## Porter Heavy Duty Shear Cable Cutters



For insulated cable. Two sharp edges avoid mashing or damaging cable strands.

Made in two types: FT, for regular cable, telephone office inside cable, fine stranded flexible conductors, not armored, and FH, for armored cable, stranded copper conductors No. 12, 3-wire BX, also for up to 500,000 cm. There are so many types of cable that it is advisable to submit samples to be cut.

No.	2	3
Complete..... each	\$9.75	\$11.25
Cutterhead, Complete..... each	7.20	8.60
Straight Blades..... each	3.70	3.90
Curved Blades..... each	3.90	4.90
Approximate Length..... inches	27	34
Capacity Insulated Cable..... inches	1 3/8	1 3/4
Approximate Weight..... pounds	4 5/8	7 1/4

## Lenox Hackmaster High Speed Hacksaw Blades

### Unbreakable Hand Blades



A saw made of high speed steel that has the back of the blade annealed so as to give it flexibility, and the tooth edge hardened for durability. Has all the cutting qualities of the standard high speed steel blade.

Inasmuch as this is a truly flexible blade, it will withstand hard usage, even misuse, without breaking. Sharp twists and kinks, which are the main reason for saw breakage, are absorbed without damaging this blade.

Packed 1/2 gross in a box.

Lgth. In.	Width In.	Thickness In.	NUMBER NO. OF TEETH				Wt. per Gross	Per Gross
			14	18	24	32		
10 1/2	23	.025	018MF	024MF	032MF	5	\$46.00	
12 1/2	23	.025	214MF	218MF	224MF	232MF	6 1/2	\$5.20



**Capewell Technite Hacksaw Blades Hand Blades**



Recommended for cutting high speed, stainless and hard-to-cut alloy steels.

Made of Class A molybdenum high speed steel, heat treated. Packed 1/2 gross in a box.

No.	Per Gross	Length Inches	Width Inches	Thickness Inches	Teeth per Inch	Wt. Lb. per Gross
1018T	\$40.00	10	1 1/2	.025	18	5
1024T	40.00	10	1 1/2	.025	24	5
1032T	40.00	10	1 1/2	.025	32	5
1214T	48.00	12	1 1/2	.025	14	6 1/2
1218T	48.00	12	1 1/2	.025	18	6 1/2
1224T	48.00	12	1 1/2	.025	24	6 1/2
1232T	48.00	12	1 1/2	.025	32	6 1/2

**Capewell Flexloy Hacksaw Blades**

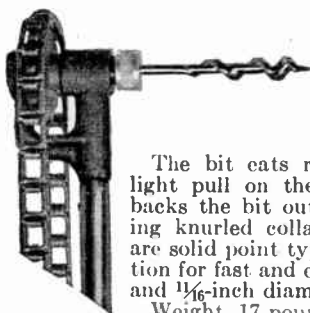


For general use by electrical workers, automotive mechanics, steamfitters, and plumbers.

Hard throughout, yet tough and flexible. Teeth will not strip. Unbreakable in a hacksaw frame. Packed 1/2 gross in a box.

No.	Per Gross	Length Inches	Width Inches	Thickness Inches	Teeth per Inch	Wt. Lb. Per Gross
1018C	\$10.00	10	1 1/2	.025	18	4 3/4
1024C	10.00	10	1 1/2	.025	24	4 3/4
1032C	10.00	10	1 1/2	.025	32	4 3/4
1214C	12.00	12	1 1/2	.025	14	5 3/4
1218C	12.00	12	1 1/2	.025	18	5 3/4
1224C	12.00	12	1 1/2	.025	24	5 3/4
1232C	12.00	12	1 1/2	.025	32	5 3/4

**No. 36-001 Ideal Joist Boring Machines**



The Ideal Boring Machine is operated from the floor, and bores holes at any angle through rafters, joists or studdings. Used on new or old floor and ceiling construction.

The bit eats right into the wood with a light pull on the chain. Reversing the pull backs the bit out without bending or breaking knurled collar—no tools required. Bits are solid point type, with special lip construction for fast and easy boring. Available in 1/16 and 1/8-inch diameters.

Weight, 17 pounds.

No. 36-001, with 1 Bit.....each \$23.53  
Extra 1/16-Inch Bits No. 36-004 (Quick Cutting) .ea. 1.18

**No. 16 Greenlee Unispur Electricians' Auger Bits**



Has twist length of 5 1/2 inches; overall length without screw point, 10 inches. Has 8-pitch single screw point. Head has single cutter with 1 outlying spur.

Standard package, 1/2 dozen in a box.

Size in 16ths In.	Per Dozen	Wt. Lb. per Dozen	Size in 16ths In.	Per Dozen	Wt. Lb. Per Dozen	Size in 16ths In.	Per Dozen	Wt. Lb. Per Dozen
4	\$11.00	1	9	\$13.20	2 1/4	14	\$18.15	4 1/2
5	11.00	1 1/4	10	13.20	2 1/2	15	20.90	5
6	11.00	1 1/2	11	15.40	3 1/4	16	20.90	5 1/4
7	12.10	1 3/4	12	15.40	3 1/2	18	26.40	6 3/4
8	12.10	2	13	18.15	4 1/4	20	30.80	7 1/2

**Greenlee Setfast Expansive Bits**

The cutters and the adjusting barrel are fitted with 8 pitch square thread. Has wide open mouth. The parts are locked by the action of the eccentric pin in the side of the body. Cutter is set by turning adjusting barrel. Packed 1 in a box; 6 in carton.



Price, No. 5 Small Bit, 5/8 to 1 1/4 Inches....per dozen \$33.00  
Price, No. 5A Cutter, 5/8 to 1 1/4 Inches....per dozen 4.50  
Price, No. 5B Cutter, 1 1/8 to 1 3/4 Inches....per dozen 5.65  
Price, Extra Adjusting Barrels.....per dozen 2.25  
Price, Extra Eccentric Pins.....per dozen 2.25  
Price, No. 6 Large Bit, 7/8 to 3 Inches....per dozen 39.00  
Price, No. 6A Cutter, 7/8 to 1 3/4 Inches....per dozen 7.90  
Price, No. 6B Cutter, 1 1/4 to 3 Inches....per dozen 9.00  
Price, No. 6C Cutter, 2 1/2 to 4 Inches....per dozen 13.50  
Price, Extra Adjusting Barrels.....per dozen 2.70  
Price, Extra Eccentric Pins.....per dozen 2.70

**Greenlee Bit Extensions**



No. 900, is made to drive a bit up to 1-inch diameter but small enough to follow a 5/8-inch bit. This is due to the thin outer shell, which does not drive the bit, the driving coming from the bit chuck within. There are 5 major parts, all exposed surfaces of which are nickel-plated except the square, which is lacquered. The positive lock prevents the loosening of the holding sleeve. This lock consists of a sleeve with a spring tension, which engages the screw sleeve when released, and two 1/8-inch pins prevent it turning.

No. 925, bit extension is similar in design to No. 900 except it is made extra heavy to follow a 1 3/16-inch auger bit and drive tools up to 2-inch diameter.

Packed 1 in a leatherette case.  
Length.....inches 15 18 21 24 30  
No. 900.....each \$2.85 \$2.95 \$3.10 \$3.25 \$2.50  
No. 925.....each 3.60 3.80

**No. 723 Greenlee Standard Screwdriver Bits**



Size.....inches 1/4 5/16 3/8 1/2 Ass'd.  
Length Over All.....inches 4 1/4 4 1/2 5 5 1/2  
No. 723.....per dozen \$3.60 3.60 3.80 4.30 3.80

**No. 220 Greenlee Short Socket Firmer Chisels**

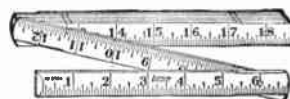
Bevel Edge—Leather Tipped Handle



Made of high carbon tool steel.

Size, In.	Per Doz.	Size, In.	Per Doz.	Size, In.	Per Doz.
1/4	\$16.80	5/8	\$18.60	1 1/4	\$24.60
3/8	16.80	3/4	19.20	1 1/2	26.40
1/2	16.80	1	22.20	2	30.00

**No. 8616 Lufkin Flexible Spring Joint Rules**



Marked consecutive inches to 16ths, both sides. Made of hardwood with brass-plated trimmings. Has concealed joints, 6-inch folds, 5/8-inch wide. Length, 6 feet. White enameled.

Packed 6 in a box.

Weight per dozen, 3 pounds.

No. 8616.....per dozen \$9.60

## Lufkin Wizard Tape-Rules

Flexible—Rigid



Rule blade is of high quality tempered steel, stiffened by special forming. Blade has nickel-plated surface with dark figures and lines in sharp contrast. It is manually withdrawn and returned. Nickel-plated case.

Zero falls at inside of hook. Accurate butt end measurements can be taken from shoulders of blade. Marked in consecutive inches to 16ths both edges; first 6 inches, upper edge to 32nds. No. 686D marked in feet, 10ths and 100ths of feet upper edge, feet, inches and 16ths on lower edge. Packed 1 in a box, 6 in a carton.

- No. 686, 72-Inch, 5/8-Inch Wide.....each \$1.25
- No. 688, 96-Inch, 5/8-Inch Wide.....each 1.70
- No. 686-D, 6-Foot, 5/8-Inch Wide.....each 1.60
- No. 6810, 120-Inch, 5/8-Inch Wide.....each 3.20

## Lufkin Leader Chrome Clad Steel Tapes

Accurate steel tape, chrome plated. Markings durable as well as extra legible. Measurements easy to read, even in poor light, markings being jet black on satin chrome-white surface, free of glare. The hard chrome surface resists both rust and wear, is smooth and easy to clean. Thus built up, of metal throughout, this tape will not crack, chip or peel, and is extra strong.

The 5/8-inch tape line is marked in feet, inches and eighths. Black imitation leather case, metal lined; winding handle opened by push pin. Packed 1 in a box.



No.	Each	Lgth. Ft.	Wt. Oz.
C250	\$5.50	25	9
C253	6.60	50	15
C255	9.10	75	20
C256	11.20	100	25

## Lufkin Anchor Chrome Clad Steel Tapes

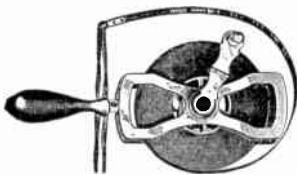
Accurate, high grade steel tape, chrome plated to resist rust. Durable, extra legible markings of jet black on satin chrome-white surface, free of glare. Easy to clean. Tape will not crack, chip or peel. Leather case, metal lined; winding handle opened by push pin. Packed 1 in a box.



		5/8 Inch Width		Lgth. Ft.	Wt. Oz.
Ft., In. & 8ths	Ft., 10ths & 100ths	No.	Each		
C210	C210D	\$8.40	25	9	
C211	C211D	9.10	33	11	
C213	C213D	10.20	50	15	
C214	C214D	12.90	66	18	
C215	C215D	13.30	75	21	
C216	C216D	17.50	100	26	

Marked in feet, inches and 16ths at 5 per cent extra.

## Michigan Chain Tapes



Especially popular in railroad and highway work. Line is detachable from reel, has heavy brass end clips, and is furnished with a pair of leather thongs.

Markings are on babbitt metal. Marked on one side only, feet only every foot, with end feet in 10ths. Blank space on each end.

Width, 5/16 inch. Approximate thickness, .015 inch. Length, 100 feet.

- No. 3100, Tape Complete with Reel.....each \$17.60
- No. 03100 Line Only, without Reel, with Thongs.....each 11.60

## Klein's Linemen's Pole Climbers

(Also Called Spurs or Hooks)

Safety is the first and vital point in considering linemen's pole climbers. The lineman going up a pole depends entirely upon his spurs.

To assure utmost dependability Klein's Climbers are forged from special steels and are individually tempered. Shanks and gaffs are tested to insure perfect riveting and temper.

Leg iron or shank is made of spring steel; gaff or spur is forged from tool steel.

The shape of Klein's Climbers has been carefully considered. It is the result of many years' experience and much practical suggestion from linemen. Klein's Climbers have flexible shanks and yield readily to pressure of leg; they do not chafe. Gaff or spur is correct in shape, set of angle and temper. It is hand riveted to leg iron in secure manner.

## No. 1939 Klein Streamlined Linemen's Climbers



A newly designed climber in which the use of any unnecessary metal has been carefully avoided. Leg irons are flexible and tapered in width and thickness. The "critical" section from 3 inches above the gaff to half way across the stirrup has been designed for ample strength. The gaffs are slender type, preferred on treated (Black Jack) poles. A detachable wrought ring carries the ankle strap. Gaffs 3 1/2 inches long measured on the outside. Riveted top loop.

Each climber individually tested. Size is measured from instep to end of shank. Special sizes on order.

Average weight per pair, 2 1/2 pounds. Made in sizes, 15, 15 1/2, 16, 16 1/2, 17, 17 1/2 and 18 inches.

No. 1939.....per pair \$12.70

## Klein's Eastern Climbers



Has riveted strap loops. Tested before leaving factory. Standard sizes, 15, 15 1/2, 16, 16 1/2, 17, 17 1/2, and 18 inches. Other than standard sizes to order.

When ordering, specify length of shank desired. Measure from instep to extreme end.

Packed 1 pair in a carton.

No.	1901-M	1903-M
Per Pair.....	\$9.50	10.50
Weight.....pounds	3 3/8	2 7/8

## No. 1907 Klein's Tree Climbers



This is the standard tree climber used by forest rangers, top loggers, fire wardens, surveyors, etc. Tested before leaving factory.

Has riveted strap loop. Gaffs, or spurs, are 5 1/2 inches long measured on the outside and 3 1/2 inches long measured on the underside. They are set high in the leg iron so that points clear the ground.

When ordering, specify length of shank desired. Measure from instep to extreme end.

Packed 1 pair in a carton. Weight 4 pounds.

No. 1907.....per pair \$10.40

**Klein Linemen's Climber Straps and Pads**



All leather used is first quality harness leather. All sewing is lock stitched with genuine linen thread hot waxed. Buckles and buckle tongues are Klein standard solid steel drop forgings, tested to 1500 pounds.

**With Square Pads—Straps 1 1/4-Inches Wide**

This set consists of 2 upper or calf straps and two lower or ankle straps; and two square pads. Size straps, 1 1/4x22 inches. Size pads, 4x4 inches.

No.	Description	Per Set	Wt. Lb. per Doz. Sets
5301-1	With Plain Pads.....	8.20	20
5301-2	With Sheep-Lined Pads.....	8.60	20
5301-3	With Felt-Lined Pads.....	8.60	20

**With Square Pads—Straps 1-Inch Wide**

5301-11	With Plain Pads.....	7.90	18
5301-12	With Sheep-Lined Pads.....	8.40	18
5301-13	With Felt-Lined Pads.....	8.40	18

**Without Pads**

Set consists of one pair, (2 straps).			
5301-4	Strap Size, 1 1/4x22 Inches.....	3.30	8
5301-9	Strap Size, 1x22 Inches.....	3.20	6
5301-14	Strap Size, 1 1/4x26 Inches.....	3.70	9
5301-10	Strap Size, 1x26 Inches.....	3.60	8

**With Pads**

Set consists of one pair, (2 straps), and two plain pads, size, 4x4 inches.

5301-5	Strap Size, 1 1/4x22 Inches.....	4.80	12
5301-15	Strap Size, 1x22 Inches.....	4.70	11

**Square Shape Climber Pads**

Size, 4x4 inches. Set consists of one pair, (2 pads).

8200	Sheep-Lined.....	2.00	4
8201	Felt-Lined.....	2.00	4
8202	Plain Leather.....	1.50	4

**No. 8206 Klein Linemen's Pear Shape Climber Pads**



Made of two thicknesses of select harness leather riveted together. Outer piece punched with two slots for climber strap and one cross slot through which leg iron of climber is passed. Size, 3 1/2x6 inches.

No. 8206..... per pair \$1.70

**Klein's Climber Straps and Pads**

**Bell System Type**



Set consists of 2 calf straps 1x22 in. with 2 special pads and 2 ankle straps 1x26 in.

Cat. No.	Per Set	Description	Wt. Lbs. per Doz. Sets
5301-6	\$9.10	With Plain Pads.....	14
5301-7	9.80	With Sheep-lined Pads.....	15
5301-8	9.80	With Felt-lined Pads.....	15

**Straps, Only**

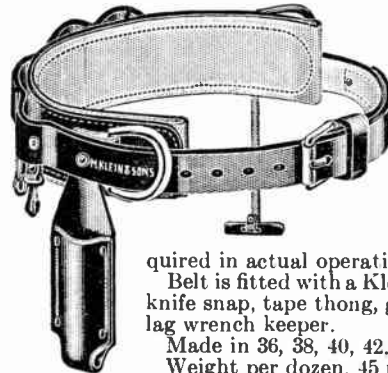
No.	Per Set	Description	Doz. Pr.
5301-9	\$3.20	Calf Straps, 1x22 in., 2 Straps.....	5
5301-10	3.60	Ankle Straps, 1x26 in., 2 Straps.....	6

**Pads, Only**

No.	Per Set	Description	Doz. Pr.
8203	\$2.50	Plain Leather.....	4
8204	3.70	Sheep-lined Leather.....	5
8205	3.70	Felt-lined Leather.....	5

Pads made of select leather, arranged with loops for climber straps and climber. Tapering 3/4 inch to 2 3/4x6 1/4 inch deep.

**No. 5204-KK Klein-Kord Tool Belts**



Made of multiply Klein-Kord—specially woven, long staple cotton, with each ply laid in rubber and vulcanized—a material that is extremely flexible, water-proof and has a tensile strength many times that re-

quired in actual operation.

Belt is fitted with a Klein-Kord plier pocket, knife snap, tape thong, glove pouch loop, and lag wrench keeper.

Made in 36, 38, 40, 42, 44 and 46-inch sizes. Weight per dozen, 45 pounds.

No. 5204-KK, with Standard D Rings..... each \$22.00

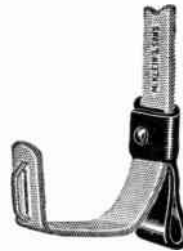
**No. 1901-MG Klein's Linemen's Climber**

**Gaff Guards**

Made of harness leather. The wings of the guard fit around leg iron of climber just above the gaff and snap on.

The gaff is covered and protected by the leather fold with fiber stop.

Weight per dozen pairs, 1 1/4 pounds.

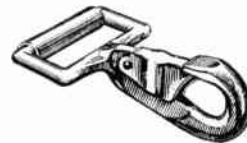


Set consists of one pair, 2 pieces.

No. 1901-MG..... per pair \$1.20

**Klein Safety Snaps**

A solid steel snap used on body belts, safety straps, etc. Each piece integral, no joints or welds. There are three patterns as illustrated below, individually tested to 1500 pounds. Galvanized finish.



**Standard Snaps**

Has wide nose covering spring latch protecting it from accidentally twisting out of Dee Ring. Can be used with any Dee.

Straps listed with plain catalog numbers have Standard Snaps.

**Hank's Snaps**

Of special construction and must be used in conjunction with Hank's Dee Rings on belt.

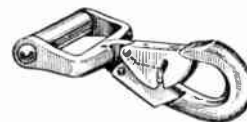
Straps listed with "H" prefixing catalog numbers have Hank's Snaps.



**Klein-Lok Snaps**

Has a twin latch arrangement. Both latches must be pressed simultaneously to release. Full factor of safety. Can be used with any Dee.

Straps listed with "KL" prefixing catalog numbers have Klein-Lok Snaps.



**Klein Ankle Straps**

For Ring Attachment on No. 1939 Klein Linemen's Climbers

Made in two pieces and furnished with rivets and burrs. Punched ready for quick attachment.

Weight per dozen pairs, 10 pounds.

No. ....	5301-16	5301-26
Per Pair.....	\$4.70	4.50
Size.....inches	1 1/4x24	1x24



## Klein's Tool Belts

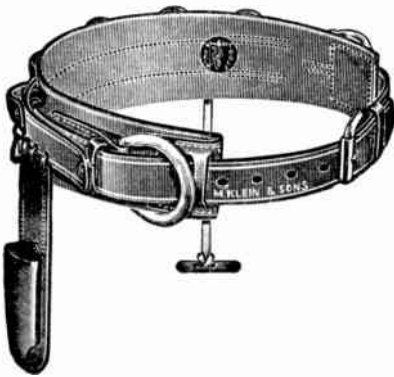
All Klein Belts are made of first quality vegetable tanned harness leather. Sewing is with genuine linen thread, hot waxed, lock stitched. Rivets are solid copper, hand set with burrs. Buckles, including tongues, and Dee Rings are steel drop forgings tested to 1500 lbs.

Catalog numbers prefixed by the letter "H" indicate belts fitted with Hank's Dee Rings which must be used with Hank's Safety Straps. All other makes are fitted with Standard Double or Single Bar Dees.

To insure proper fit select size that allows heel of Dee Rings to come about 1 inch in front of hip bones as per following table.

Distance Between Dee Rings, In. . . . .	20	22	22	24	26	28
Belt Size, In. . . . .	36	38	40	42	44	46

### No. 5228 Klein's Leather Tool Belts



Made of one piece of soft pliable, tough russet latigo leather, doubled to form comfortable rolled edges and returned at each end. Cushion is 4½ inches wide at the center of the back and tapers to 3½ inches wide at the front. Body strap is first quality russet harness leather, 2 inches wide, stitched to the cushion at back and passing through loops at end of cushion as well as through the dee rings. A russet harness leather tool strap, 1¾ inches wide with five loops in the 1¼-inch loop strap is carried on leather hangers from the body strap to which it is looped at the ends. This keeps the tool loops from contracting when belt is buckled on.

Constructed so that no rivets come through to inside of belt. Dee rings and buckle are single bar type solid steel drop forgings. All hardware tested to 1500 pounds. Galvanized finish. Fitted with leather pliers pocket, knife snap and tape thong, complete. Weight per dozen, 45 pounds.

Size . . . . . inches	36	38	40	42	44	46
No. *5228 . . . . . each	\$25.60	25.60	25.60	25.60	25.60	25.60

\*With standard (single bar) dees.

### Klein Tool Belts

#### With Standard Dees

No.	Each	Width In.	Wt., Lb. per Doz.
5204	\$14.00	3½	34
5205	15.50	†2¼	35
5202	13.50	2¼	32
*5204DE	17.00	3½	38

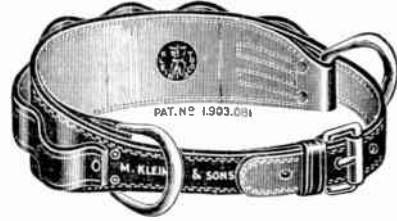
\*With pliers pocket, knife snap and tape thong attached.

†Double thickness.



No. 5204 DE

## No. 5204-TSO Klein Texas Belts



Lined throughout with soft latigo leather. With standard dees.

Made 4 inches wide at center of back for full support, tapering to 2¼ inches wide at hips to permit free bend to body of wearer.

Weight, 36 pounds per dozen.

No. 5204-TSO . . . . . each \$24.70

## No. 5211 Klein Leather Tool Belts



Used by linemen, electricians, and mechanics.

Made of harness leather. Inner or cushion layer, 3 inches in width, is narrowed at each end to carry the D rings. Body strap, 2 inches in width, is riveted and stitched to the cushion and also passes through the D rings. Two tool straps are provided and formed into two loops at each side of the belt by riveting through the belt.

D rings and buckle are solid steel drop forgings galvanized to prevent rust, and are tested to 1500 pounds.

Belt surfaces taking wear of D rings are protected by copper safety liners riveted through the full thickness of the belt. Rivets are solid copper, hand set with burrs.

Sewing is with linen thread, hot waxed and lock stitched.

Available in sizes 36, 38, 40, 42, 44, and 46 inches. Other sizes on request. Weight per dozen, 34 pounds.

No. 5211, With Standard D Rings (Double Bar) .each \$16.50

## No. 5212 Klein's Derrick Belts



For oil derrickmen or structural workers.

Made to stand load of 250 pounds with a dead fall of five feet.

One three inch Forged Dee Ring at back for life line.

Double tongue buckle.

No. 5212, Weight, 42 Lbs. . . . . each \$17.00

## Neatsfoot Oil

Keeps leather soft and pliable. Prolongs its life.

Supplied in cans with full directions for use.

Pint Can . . . . .	each \$1.70
Quart Can . . . . .	each 2.90
Half Gallon Can . . . . .	each 5.20



**No. 5214 Klein's Steel Workers' Belts**



Three forged Dee rings for attachment of line in most convenient position. Leather loop for wrench. Main belt passes through rings held in place by backing

pieces of latigo leather stitched and riveted to belt proper. Two-inch buckle, double tongue type with solid forged frame. One-piece belt of harness leather, two inches wide.

Distance between outer Dee rings 24 inches. Adjustable from 36 to 44 inches. Made in one size.

No. 5214, Weight per Dozen, 28 Pounds.....each \$12.80  
 No. 5214-O, Without Wrench Loop, Weight per Dozen, 27½ Pounds.....each 12.50

**No. 5209 Klein's Safety Harnesses**



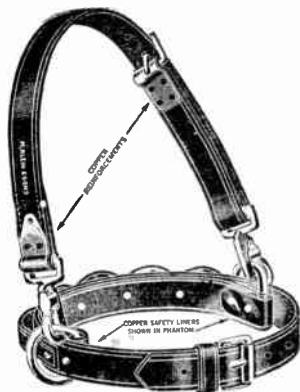
Back

Front

Meets requirements of various safety commissions for use where danger from gassing is present. Working in gassy manholes, gas tanks, oil tanks and even boilers, men are frequently overcome and an emergency arises instantly. This harness provides a sure means by which patient can be brought to safety and danger overcome. Design is such that it slings wearer in a perpendicular position so that he can be readily hauled through an ordinary manhole opening. A solid harness leather back plate 2¼x10 inches is stitched and riveted around the 1¼-inch adjustable belt strap. Back plate also carries a tested drop forged D ring to which the ¾-inch manila life line, 25 feet in length is permanently attached. Shoulder straps are ¾ inch and made adjustable and riveted to belt at single ends. These straps hold belt in position around chest so as not to encumber wearer while working. Weight per dozen, 75 pounds.

No. 5209, with Life Line.....each \$17.40

**No. 5206-1A Klein Leather Belts and Safety Straps**



Made of harness leather. Belt has cushion 2¼ inches wide which carries the D rings. The outer or loop layer is 1½ inches wide formed into tool loops by riveting to the cushion. Also passes through the D rings.

The safety strap is 1¾ inches wide and 68 inches long. Has standard snaps and stainless clips.

All snaps, D rings, and buckles are solid steel drop forgings tested to 1500 pounds, and are galvanized finished.

The strap may be adjusted to any length by means of a

buckle or can be removed entirely from belt. Sewing is with hot waxed linen thread, locked stitched. Available in sizes 36, 38, 40, 42, 44, and 46 inches.

No. 5206-1A Weight per dozen, 62 pounds.... each \$26.80

**Klein Leather Safety Straps**



No. 5251

**Leather Wear Pads**

No.	Each	Size	Wt., Lb. per Doz.
5251	\$13.70	1¾ In.x5 Ft. 8 In.	32½
KL5251	15.40	1¾ In.x5 Ft. 8 In.	32½

**Stainless Steel Wear Pieces**

5250	\$13.70	1¾ In.x5 Ft. 8 In.	32½
KL5250	15.40	1¾ In.x5 Ft. 8 In.	32½
5253	15.20	2 In.x5 Ft. 8 In.	40
KL5253	16.90	2 In.x5 Ft. 8 In.	40

**Bell System Type**

5275S	\$15.80	2 In.x5 Ft. 1½ In.	39
5257L	16.70	2 In.x5 Ft. 10 In.	41

**E.E.I. Specifications**

5258	\$17.10	2 In.x5 Ft. 6 In.	40
KL5258	18.20	2 In.x5 Ft. 6 In.	40

**Klein's Klein-Kord Safety Straps**

**Fixed Length Type**



This fixed length strap avoids wear close to the buckles, due to the smooth way it moves on the pole.

Effective length, 1¾x56 inches.

Weight per dozen, 25½ pounds.

No. KL-5234, with Klein-Lok Snaps.....each \$12.50

No. 5234, with Standard Snaps.....each 10.80

**Klein's Belt Accessories**

**No. 5130 Tape-Thongs**

**With Fiber Cross Bar**

Tape-thong provides a convenient arrangement for carrying a roll of tape. Made of pliable latigo leather, 10 inches long by ¾ inch wide. Slit to form loops at both ends. One end is looped to a fiber cross bar 3½ inches long. The other loop may be attached readily to the belt.

Weight per dozen, 1½ pound.

No. 5130.....each \$ .50

**No. 5131 Knife Snaps**

**With Strap and Rivets**

Mounted on harness leather strap. Provided with rivets and burrs ready for attaching to the belt. Weight per dozen, 1½ pounds.

No. 5131.....each \$ .60

**No. 5132 Rings**

**With Strap and Rivets**

Mounted on harness leather strap. Provided with rivets and burrs ready for attaching to the belt.

No. 5132, Weight per Dozen, ½ Pound.....each \$ .50



No. 5132

No. 5130



No. 5131



## No. 5233 Klein Klein-Kord Safety Straps

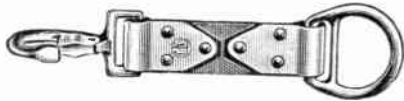


Has standard snaps, stainless clips.

Takes a load of 2400 pounds before

ripping. Red center fabric made of 6 plies of long staple cotton of special weave, each ply laid in rubber and vulcanized. Size, 1 3/4 in. by 5 3/8 feet. Other lengths on order. No. 5233, Weight per Dozen, 36 Pounds.....each \$13.70

## Klein Klein-Kord Extension Snaps



Used in conjunction with a fixed length safety strap. Provides the extra length necessary when working on large diameter poles.

Dimensions: length, 15 inches; width, 1 3/4 inches.

Weight per dozen, 16 1/2 pounds.

No. 5236, With Standard D and Snap.....each \$6.30

No. KL-5236, With Standard D and Klein-Lok Snap.....each \$7.20

## No. 5215 Klein's Extension Straps



This strap is 1 3/4 inches wide, made of first quality harness leather and fitted with special forged D ring and buckle. It is worn attached to D ring on main body belt and used when large diameter poles necessitate a longer safety strap than the regular. By engaging snap of the regulation safety strap to the special D ring on the extension strap the lineman can immediately adapt his outfit so that he has no difficulty in working conveniently. No matter how large the pole—can be lengthened or shortened.

Size, 1 3/4 x 15 inches.

Weight per dozen, 14 pounds.

No. 5215, Forged D Ring.....each \$7.20

## No. K.K.D.-025 Klein-Kord Dressing



For use with Klein-Kord.

Put in 1/4-pint cans.

Weight per dozen, 4 1/16 pounds.

No. K.K.D.-025.....per can \$6.60

## Salisbury Non-Spillable P.B. Paint Pots



This is a rubber container for carrying insulating and weather-proofing compounds that do not have an oil base.

Provides a safe and convenient means to carry both compound and brush, eliminating use of metal containers, glass bottles, and other makeshift devices.

Flange extends inward at junction of the neck preventing contents from spilling or splashing out during rough handling. Equipped with tapered cork through which a rubber-set brush is securely inserted.

Single compartment pot is for insulating only; double compartment pot is made with an extra receptacle to hold soldering paste.

## No. 5108 Klein's Inspectors' Harness Leather Tool Bags



This bag is made of harness leather and will stand rough and hard usage. The leather does not absorb moisture.

Bag has a shoulder strap combined with a pad and hand strap. The bottom is three-ply and is protected with steel studs. Retaining straps

pass clear around the bag so that it may be loaded to the limit of its capacity and be securely held intact. All seams are sewed with hot waxed linen thread, lock stitched.

No. ....	5108-14	5108-16	5108-18	5108-20	5108-22	5108-24
Each ...	\$17.90	19.20	22.00	25.00	26.70	28.20
Size...in.	14x8	16x8	18x8	20x8	22x8	24x8
Wt...lb.	5	5 3/4	6	6 1/2	7	7 1/4

## Klein's Linemen's Canvas Tool Bags With Leather Bottoms

This bag is made of one piece of white duck reinforced all around the bottom with heavy bag leather. The bottom is made of heavy leather outside and duck inside, lock stitched all around. The bottom is protected with strong steel studs. Bottom and sides are joined together with lock stitched leather welt seams.

Mouth of the bag is formed by a 12-gage steel frame. The canvas is clinched between this frame and an inside secondary steel frame.

Bag has harness leather handles and two retaining straps with buckles.

### No. 5102, with Leather 3 1/4 Inches up Sides



### No. 5105, with Leather 8 Inches up Sides



No.	Each	Size Inches	Weight Pounds	No.	Each	Size Inches	Weight Pounds
5102-12	\$11.70	12	2 1/4	5105-16	\$14.20	16	3
5102-14	12.50	14	2 1/2	5105-18	15.00	18	3 1/2
5102-16	13.00	16	3	5105-20	15.70	20	3 3/4
5102-18	13.90	18	3 1/4	5105-22	16.20	22	4
5102-20	14.50	20	3 1/2	5105-24	16.70	24	4 1/4
5102-22	15.00	22	3 3/4	.....	.....	.....	.....
5102-24	15.50	24	4	.....	.....	.....	.....

Linemen's bags can be furnished with lock and key, and shoulder strap at slight additional cost.

## No. 30 Salisbury Non-Metallic Tool Bags With Inside Utility Pocket



Recommended as an essential part of line crew equipment. Provides an efficient method of raising tools, supplies and materials to the pole top.

Bag is collapsible, of sturdy construction, amply reinforced and designed throughout for heavy duty service.

Equipped with a utility pocket on the inside to accommodate small tools, bolts, washers, etc.

Made of duck with a single side seam together with top and bottom fastenings strongly sewed. The heavy leather bottom extends 3 inches up the sides.

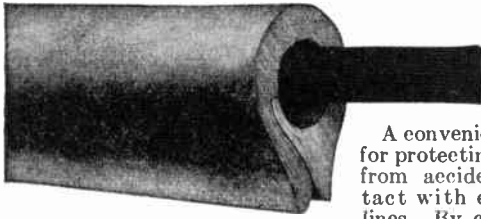
A 1/2-inch rope handle is firmly spliced to the bag through leather reinforcements.

Diameter, 12 inches. Height, 16 inches.

Weight, 2 1/4 pounds.



**Salisbury Line Hose**



A convenient device for protecting linemen from accidental contact with energized lines. By completely

surrounding the wire with a substantial wall of voltage-resisting rubber more than ample insulation is provided.

The self-locking lip prevents the hose from being accidentally detached. Short bends can be made without exposing the conductor it covers.

Furnished in ¼, ⅜, ½, 1, 1¼ and 1½-inch sizes, inside diameter; in standard lengths of 3, 4½ and 6-foot pieces.

**Salisbury Connector End Line Hose**



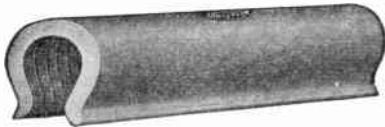
Standard line hose with the additional feature of an integral built-on connector end which overlaps and securely holds the end of an adjoining piece of hose when longer spans of line are to be covered. Increases standard lengths by 8 inches.

The connector end is also useful in covering connectors, bulky tap joints, and leads on stud type transformers.

The connector end does not interfere with the application of the hose in normal uses and it is recommended that a portion of the hose on each truck be of this connector end type.

Furnished in ⅜, 1, 1¼, and 1½-inch inside diameters and in standard hose lengths of 3, 4½, and 6-foot pieces.

**Salisbury Line Hose Connectors**



Used where two or more pieces of straight line hose are employed on one wire to prevent the pieces from slipping apart and to eliminate the possibility of the conductor being exposed between adjoining ends. Also used to overlap the ends of line hose separated by a bulky joint.

Shaped to fit the outside contour of the hose, the walls being extra thick to provide the necessary grip. A series of ribs placed on the inside surface give the connector a tight hold.

Length, 12 inches. Available in two sizes to fit over either ⅝ or 1-inch line hose. When ordering specify hose size.

**Salisbury Linemen's Blanket Canisters**



Used to protect linemen's rubber blankets from puncture or other injury when not in use and provide a safe and convenient container for blankets while being carried on the trucks or service cars and while retained in stations.

Constructed of strong galvanized iron. Equipped with caps permanently fastened to the container by a chain. Canister and cap are made with beaded edges.

Available in the following sizes:  
 No. 1 4-In. Diam. 37-In. Long, 1 Blanket, Wt. 4½ Lb.  
 No. 2 5-In. Diam. 37-In. Long, 2 Blankets, Wt. 6 Lb.  
 No. 3 6-In. Diam. 37-In. Long, 3 Blankets, Wt. 7 Lb.  
 No. 4 7-In. Diam. 37-In. Long, 4 Blankets, Wt. 8½ Lb.  
 No. 5 8-In. Diam. 37-In. Long, 5 Blankets, Wt. 9¾ Lb.  
 No. 6 9-In. Diam. 37-In. Long, 6 Blankets, Wt. 11¾ Lb.

**Salisbury Rubber Insulator Hoods  
Universal Type**



Used in conjunction with line hose to cover tie-wires and conductors as they pass the insulators. Completely covers this point of hazard in a close fitting and positive manner. Can be used on double arm as well as single arm construction. The extending arms of the hood overlap the ends of the line hose.

Compounded to secure high insulating qualities over a long period of time. Vulcanized in steel molds while under great pressure, in heavy duty presses; retains its shape and flexibility. Thick walls of solid rubber give it ability to stand up under severe conditions of use.

Requires no attachments to hold it in place. Securely locks itself to the under side of the insulator and cannot open, turn, slide or become accidentally dislodged.

Solid rubber flanges extending inwardly from under sides of the body portion serve to grip the under side of the insulators. Exterior ribs are placed to reinforce the side walls and to increase the grip.

Inside dimensions arranged so hood properly fits all popular types of pin insulators in distribution service.

Length, 14¼ inches. Height, 6¼ inches.

Weight, 4 pounds. Packed one to a carton.

Telephone and telegraph companies use a special hood shaped to fit telephone style insulators. As it is used on single arm poles only both extending arms of hood are of the same diameter and will snugly grip the ¼-inch size line hose. In ordering, specify Telephone Type.

**Salisbury Snap-On Blankets and Jackets**



Snap-On Jacket is especially useful in covering dead ends, pot heads, cutouts, arrestors, and like equipment which does not require the full size blanket.

Equipped with eight reinforced eyelet holes along each side and twelve hard rubber buttons. When folded over or wrapped around the apparatus to be covered, the edges are held closed by snapping the small heads of the buttons through the opposite eyelets. This self-contained method of fastening has been thoroughly tried and found practical.

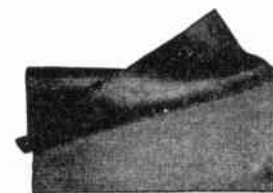
Guaranteed to resist 20,000 volts on acceptance tests for 3 minutes.

Size blanket, 36x36x¼ inches.

Size jacket, 22x22x¼ inches.

**Salisbury Rubber Protective Blankets**

**All Rubber—Black**



Will fold, wrap or hang suspended in any position to provide an insulating barrier between electrical workers and hazards adjacent to their working position.

Bead molded on all four sides to prevent tearing.

Guaranteed on acceptance tests to resist 20,000 volts for 3 minutes.

Plain		With Eyelets	
No.	Size, Inches	No.	Size, Inches
300	36x36x¼	300-E	36x36x¼
400	27x36x¼	400-E	27x36x¼

Prices upon application.

## Salisbury Electric All-Rubber Coats



Made of strong durable material, coated on the outside surface with high grade rubber and a frictioned coating on the inside. No metal is used in its construction.

The inner cuff of the double-storm cuff is made of pure gum rubber. The collar is of standard lay-down type. Reinforced at hips to protect coat from tool belt abrasion. Has raglan shoulders, all rubber fasteners and storm fly front.

Length, 46 inches.

Furnished in sizes 36 to 46.

Prices upon application.

## Salisbury Rubbercuff Protector Gloves



Gives complete protection with its rubbercuff protector and not only gives greater safety but allows a substantial reduction in glove expense.

Most rubber gloves are destroyed through reason of snags occurring on the upper ends of the gauntlets. Ordinary protector gloves made of leather cannot extend to the rim of the rubber gloves because leather is a conductor of electrical current.

Cuff is made from light but strong fabric reinforced, voltage resisting rubber. Tests prove that current creepage over it is no greater than over gauntlets themselves. Hand part is made from high quality leather.

### For Use with Straight Finger Rubber Gloves

No. 30, Sizes 9, 9½, and 10.....  
No. 32, Sizes 10½, 11, and 12.....

### For Use with Curved Finger Rubber Gloves

No. 130, Sizes 9, 9½, and 10.....  
No. 132, Sizes 10½, 11, and 12.....

## Salisbury Linemen's Protector Gloves Full Gauntlet, 4-Inch Style



Designed to wear over Linemen's Rubber Gloves to protect them from snagging, tearing or abrasive wear. Made expressly for this work and should not be confused with the ordinary work gloves.

Made of specially tanned Grade A buffed horsehide, maroon color, and from selected weights.

Remains soft and pliable under all conditions and will not become

slippery when wet. Resists wire puncture to a great degree.

### For Use With Straight Finger Rubber Gloves

No. ....	18-C	18	20-C	20
Style Back...	Closed	Open	Closed	Open
Covers Rubber				

Glove Sizes. 9, 9½, 10 9, 9½, 10 10½, 11, 12 10½, 11, 12

### For Use with Curved Finger Rubber Gloves

No. ....	118-C	118	120-C	120
Style Back...	Closed	Open	Closed	Open
Covers Rubber				

Glove Sizes. 9, 9½, 10 9, 9½, 10 10½, 11, 12 10½, 11, 12

## Salisbury Linemen's Glove Bags

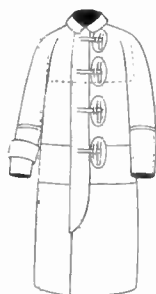


Used to protect linemen's rubber gloves when not in use. Made of heavy, tightly woven, waterproof 42-ounce white duck with non-raveling edges.

Special features: Snap hook and D ring for attaching to belt; double head reinforcing rivets; sewed with linen thread, lock stitched; gusset sides and bottom, carrier flat when empty; flat lying cover; strong snap fastener; waterproof; ventilating eyelets in bottom gusset.

No. ....	35	25
Length.....	inches 15	9
Width.....	inches 8	8

## Salisbury Static-Resisting Line Coats



The special construction of this coat retards static tingling at the neck or wrists when the garment is used during wet weather on work that is adjacent to energized conductors.

Special features: Inside double back; special rubber fasteners; reinforced at belt; all seams sewed and cemented; insulating skirt collar; roomy raglan shoulders; insulating storm cuffs; storm fly front.

Guaranteed to be free from all defects in material or workmanship.

The all rubber collar is standard. Corduroy faced collar can be furnished if desired.

Furnished in sizes 36 to 46 inclusive. Length, 47 inches.

Packed one to a carton.

## Salisbury Cable Bandages

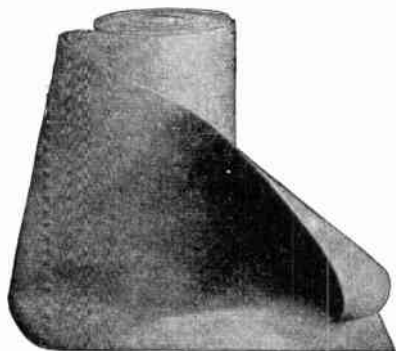


For general use as temporary insulation. Made of highest grade pure gum rubber. Unusually strong, very flexible, with excellent ageing qualities. Acceptance tests prove that a single thickness can withstand 10,000 volts.

In rolls 14 feet long, 3 or 4 inches wide, ½ inch thick.

Net weight per 3-inch roll, 10 ounces; 4-inch, 12 ounces.

## Salisbury Switchboard Rubber Matting



A non-slip corrugated surface matting of high dielectric strength and long aging qualities.

Meets requirements of all standard specifications.

Guaranteed to resist 50000 volts for 3 minutes on acceptance tests.

Furnished in ¼-inch thickness; 24, 30, 36 and 48-inch widths; lengths up to 75 feet. Other

widths and thicknesses can be furnished.



**Salisbury Steam Cured Linemen's Rubber Gloves**



No. 90  
Straight Finger Style

No. 100  
Curved Finger Style

Qualities of high insulation, low leakage, strength, flexibility and long life are evenly balanced. Each of these essentials is raised to the highest possible value without lowering the standard of some other property.

All gloves are seamless, form fitting, accurate to size, with finger lengths and widths adjusted to best meet average conditions.

Both Nos. 90 and 100 are furnished in 10,000, 15,000, and 20,000-volt ratings. Class B, 10,000-volt, 14-inch gloves are standard; Class A, 10,000-volt, heavier weight gloves are available.

Guaranteed to pass the most thorough inspection and to meet the A.S.T.M. specifications. Replacement made or return accepted of any which fail under initial tests at their rated voltage or otherwise prove unsatisfactory at time of delivery.

Furnished in sizes, 9, 9½, 10, 10½, 11, and 12.

Packed 1 pair to a box.

**Salisbury Protective Rubber Sleeves**

Formed and Vulcanized in Chromium Plated Molds  
Full Length



Used to protect the arms and shoulders from accidental contact with energized equipment. Fastened across the shoulders by an adjustable rubber strap and rubber buttons. New chest strap feature prevents top of sleeves from sliding back and is so positioned that it does not interfere in any way.

Guaranteed to resist 10,000 volts for three minutes on initial tests. Chocolate color.

No. 40-R, standard size, is usually found suitable. No. 50-L, large size, is for men of large build or for use over heavy clothing.

Packed 1 pair to a carton.

No.	40-R	50-L
Outside Arm Length.....	inches 25	27
Inside Arm Length.....	inches 17½	18
Wrist Opening.....	inches 5½	6
Arm Opening.....	inches 11	12
Shipping Weight.....	pounds 3	3¾

**Elbow Length**

Fits fairly close around forearm but permits free arm movement. Very flexible. Molded in one seamless piece.

Combination of short sleeves with standard length gloves is economical, for if either are damaged it is only necessary to replace the unserviceable glove or sleeve.

Guaranteed to resist application of 10,000 volts for three minutes between water electrodes. Chocolate color.

Packed 1 pair to a carton.

No.	60-R	70-L
Outside Arm Length.....	inches 16¼	16¼
Inside Arm Length.....	inches 13½	13½
Wrist Opening.....	inches 4¼	4¾
Arm Opening.....	inches 6¾	7
Shipping Weight.....	pounds 1½	2

**No. G4767-2 Chance Temporary Jumper Clamps**



This clamp, equipped with 5000-volt rubber-covered extra-flexible cable, is recommended for extra protection to linemen doing general low voltage maintenance work. Has large, positive, gripping surface.

Handle is of corrugated, medium hard rubber; will not break or crack if dropped from pole. Cable is easily and securely attached. Handle will accommodate 1-inch maximum overall diameter grounding cable.

No cable furnished.

Main line contact: maximum wire size, 750,000 CM stranded copper; minimum wire size, No. 10 solid copper. Jumper wire size: maximum, No. 2/0, 5000-volt flexible grounding cable. Length, 9 inches.

Weight each, 1¾ pounds.

**Chance Grip-All Clamp Sticks**



This clamp stick is safe and easy to handle.

To open jaws it is necessary to release the safety catch. Safety catch closes automatically when jaws are closed.

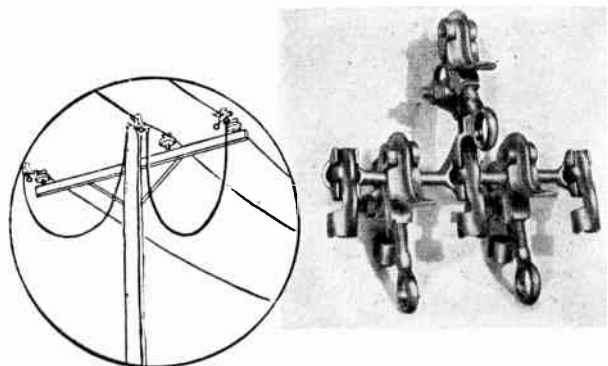
Full universal action is obtainable; eye screw may be turned with clamp stick at 0° to 90° angle to screw axis.

Hardwood pole is 1½ inches in diameter; tested to withstand 75,000 volts per foot for five minutes.

Castings are aluminum and bronze.

No.	M1865-4	M1865-6	M1865-8
Length Pole.....	feet 4	6	8
Overall Length.....	4'6¾"	6'6¾"	8'6¾"
Net Weight.....	pounds 4½	5¼	6

**No. G1710-5 Chance 3-Wire Standard Grounding Sets**



Has eye screw for use with clamp stick, no cable.

Cluster shown at right is made for grounding on any 3-wire construction. Also with clamps mounted on poles, single clamps mounted or unmounted. Clamps and cluster are bronze.

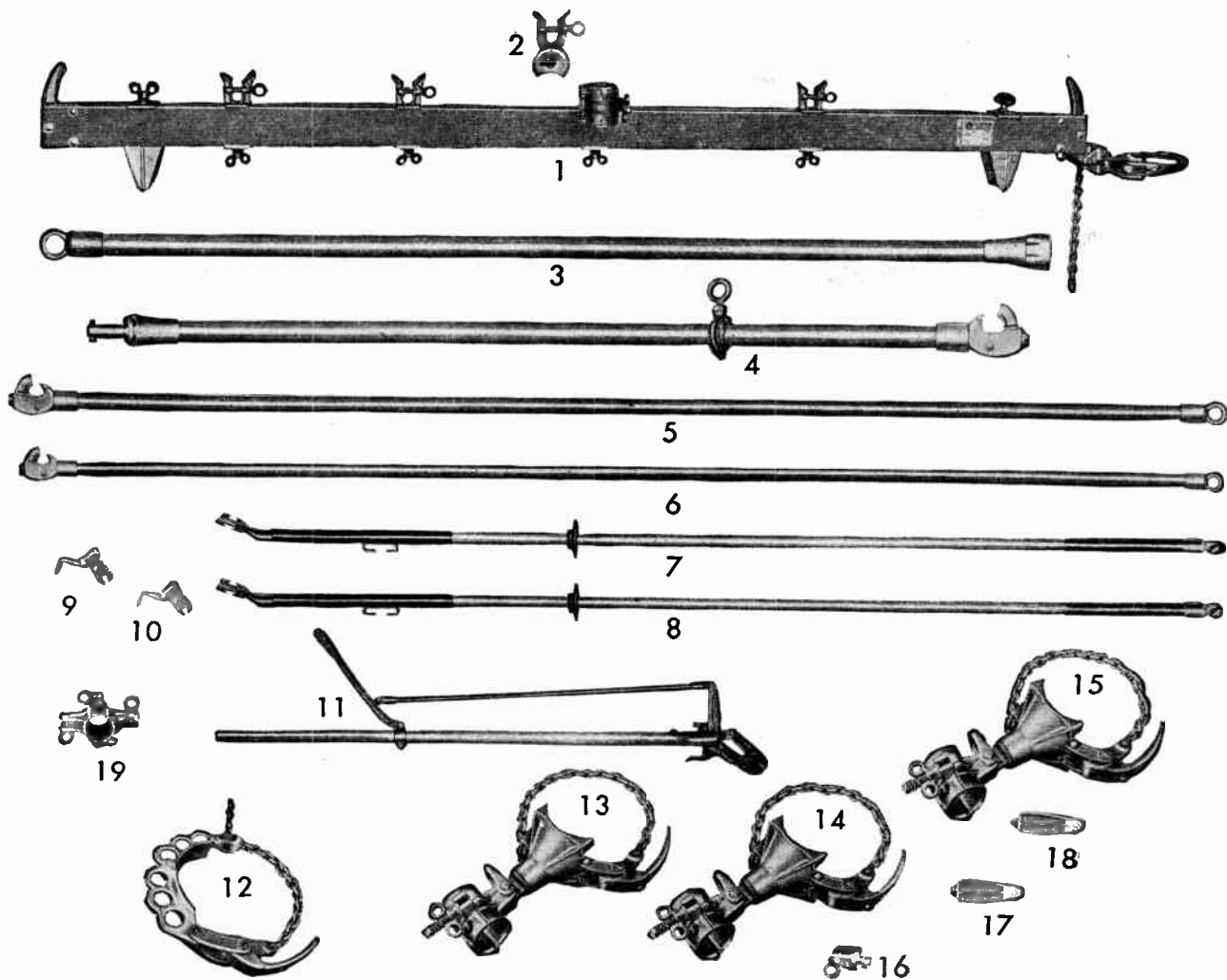
Main line contact: maximum wire size, 4/0 stranded copper, 3/0 ACSR. Jumper contact: maximum wire size, No. 2 ground cable. Overall length, 8 in. Weight, 4½ pounds.



## No. 4800-15 Chance Hot Line Maintenance Tool Sets

Aluminum Fitted for Light Weight, Efficiency

Complete Set for Two or Three Phase Lines

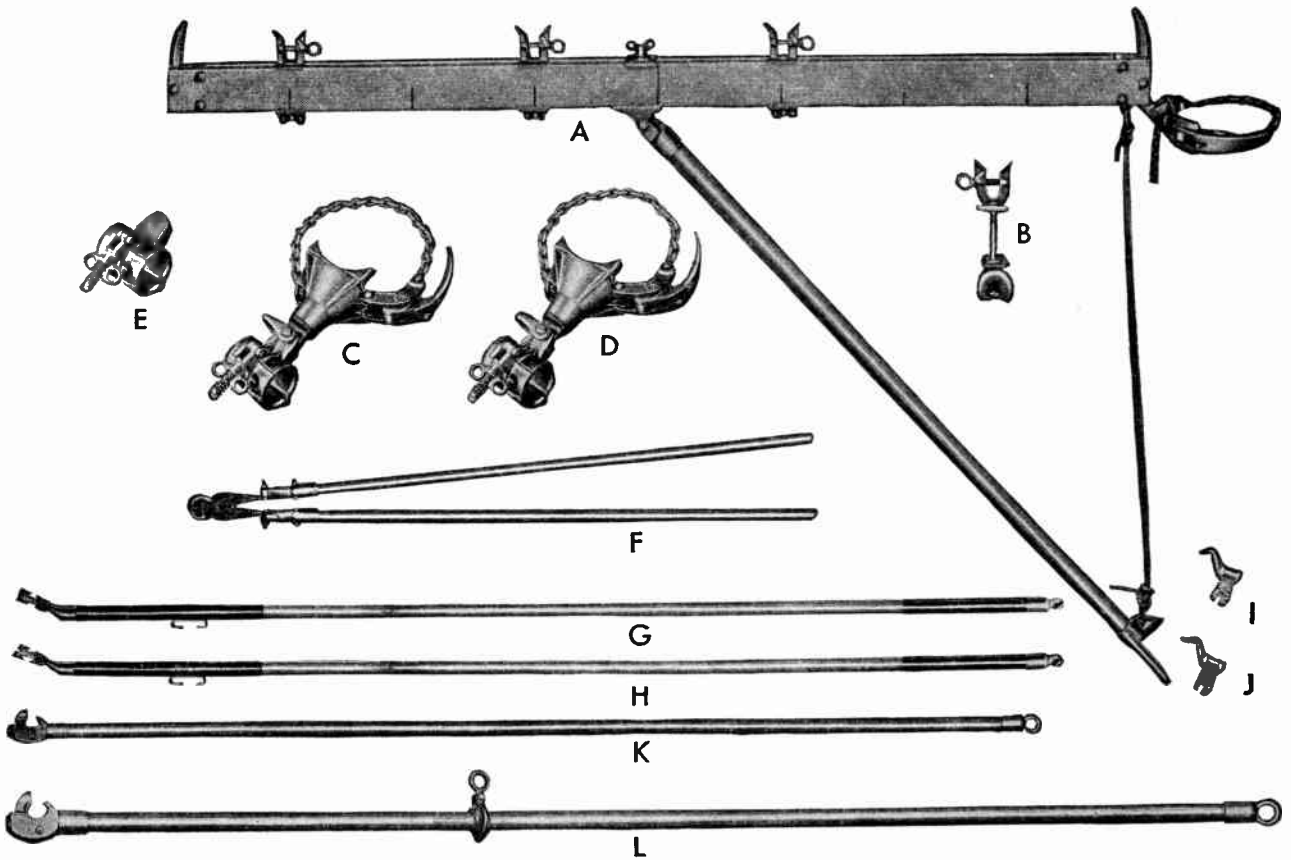


These Chance Hot Line Maintenance Tools represent the latest developments in equipment for making repairs on high voltage lines. The metal fittings are cast of heat treated aluminum alloy which makes them lightweight for ease in handling and has made possible many mechanical improvements.

The tool set shown above has been developed for making insulator changes, cross arm changes or pole changes on two or three phase straight line construction. The auxiliary arm may be used either as a side arm or as a lifting arm to lift the conductors above the structure. The set is available complete as shown or in parts as listed. Poles are laminated spruce tested to withstand 75,000 volts per foot.

No.	Reference	Description	Approx. Wt., Lb.
M4800-9	1 & 2	9-Foot Dual Auxiliary Cross Arm with Stationary Safety Brackets. Arm is Equipped with Chain Tightener, Three Wire Holders, Two Wire Tong Stirrups, 2½-Inch Pole Clamp and Arm Fitting, All of Which Are Detachable, and One Conductor Holder Clamp for Wire Tong (1).....	31½
M4657-5	3	2½"x15' Wire Tong in Two Sections, Spliced 8 Feet from Butt Swivel End with M3355-3 Rigid Pole Splice.....	25½
M4655-3	4	Wire Tong 1½"x10' Overall Length.....	8¾
M1729-1	6	Wire Tong Band, 2½ Inches.....	1¾
M4656-1	5	Wire Tong, 2"x10' Overall Length.....	10¾
M1855-6	7 & 8	Tie Stick 1¼"x8'. Blade Head on One End, Universal Head Other End, and Fiber Sleeve Both Ends. Hand Guard. (2 Required).....	3
M4455-69	9 & 10	Universal Rotary Prong Tie Stick Heads (2 Required).....	¾
M1871-4	11	4-Foot Lever Type Wire Cutters.....	6¼
M1728-5	19	Wire Tong Pole Clevis, 2½ Inches.....	2½
M1846	12	Rope Snubbing Bracket with Chain Tightener.....	5¾
M4740-5	13 & 14	Wire Tong Saddle and Tightener for 2½-Inch Wire Tong (2 Required).....	8¾
M4740-3	15	Wire Tong Saddle and Tightener for 1½-Inch Wire Tong.....	8
M4740-14	16	Wire Tong Saddle Clevis.....	¾
M4740-6	17 & 18	Wire Tong Saddle Extension, 4 Inches (2 Required).....	¾

No. 4800-10 Chance Standard Hot Line Tool Sets



Minimum essentials for working straight line construction have been selected for this set of Chance Hot Line Tools. The auxiliary arm is designed for use as a side arm but also may be used as a lifting arm by changing the position of the brace and mounting the arm on the wire tong for lifting. Wire tongs and saddles are generally used for laying conductors out into the wire holders on the auxiliary arm and for holding the conductor, on the opposite side of the pole, in the clear.

This tool set may be used for two or three phase lines. Metal fittings are heat treated aluminum alloy. Poles are laminated spruce, tested to withstand 75,000 volts per foot.

No.	Reference	Description	Approximate Weight Pounds
4800-1	A	Auxiliary Cross Arm, 8 Feet (3 Holders).....	31 <sup>1</sup> / <sub>8</sub>
4800-12	B	Wire Holder with Rigid Tong Holder for Attaching Item L to Item A.....	2
M4740-5	C & D	Saddle and Tightener Complete with Clamp for 2 1/4-Inch Poles (2 Required).....	11 <sup>1</sup> / <sub>4</sub>
M4741-1	E	1 1/2-Inch Pole Clamp.....	2 <sup>1</sup> / <sub>4</sub>
M1861-4	F	Insulated Handles with 8-Inch Cutters; 1 1/4-Inch Pole.....	5 <sup>1</sup> / <sub>2</sub>
M1855-6	G & H	Blade Tie Stick, 1 1/4-Inch 8-Foot Laminated Spruce Pole with Universal End (2 Required)....	25 <sup>5</sup> / <sub>8</sub>
M4455-69	I & J	Universal Rotary Prong Tie Stick Head (2 Required).....	8 <sup>3</sup> / <sub>8</sub>
M4655-2	K	Wire Tong, 1 1/2"x8', with Butt Swivel.....	79 <sup>1</sup> / <sub>16</sub>
M4657-1	L	Wire Tong, 2 1/2"x12'x10 1/4", with Butt Swivel.....	195 <sup>5</sup> / <sub>8</sub>
M1729-1	M	Wire Tong Band for 2 1/2-Inch diameter Wire Tong.....	13 <sup>3</sup> / <sub>4</sub>

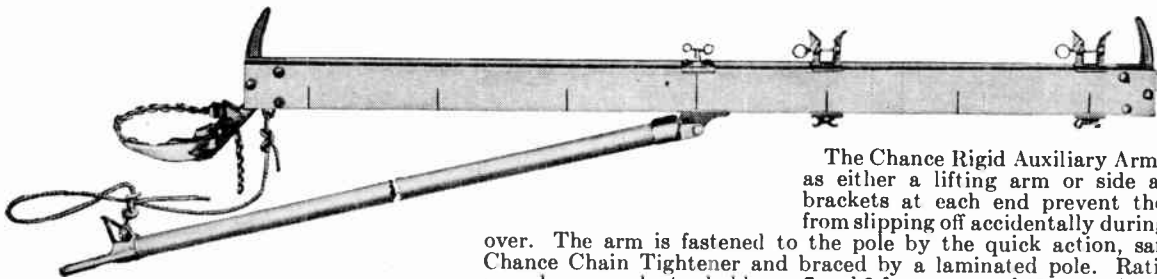
## Chance Wire Tongs



Use of heat treated aluminum castings has made possible several improvements in design and operation of Chance Wire Tongs without increasing their weight. Width of jaws has been increased to handle larger conductors. New actuating screw is faster and easier to operate, only 6 turns from fully open to fully closed on the 2-inch size being needed as compared with 12 $\frac{7}{8}$  turns with the former design. Poles are laminated spruce and are tested to withstand 75,000 volts per foot for five minutes.

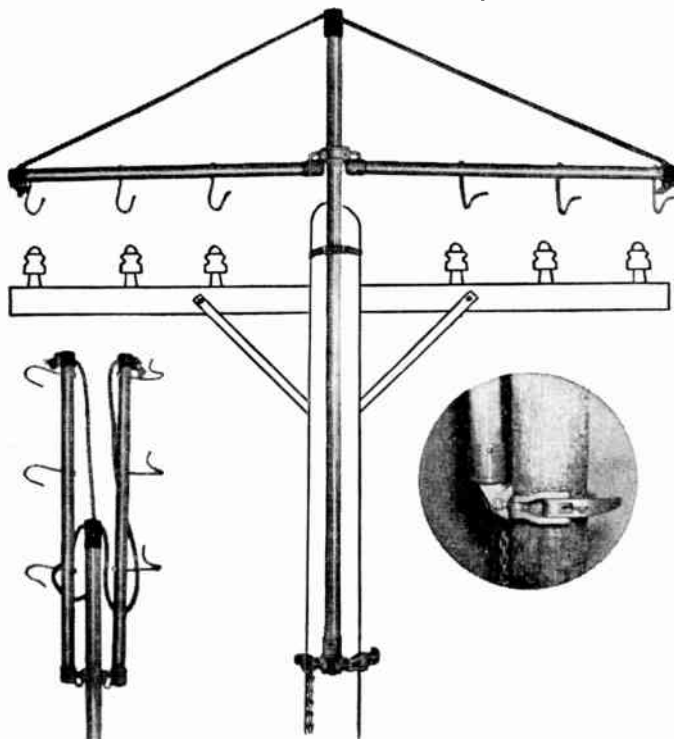
No.	Pole Diameter Inches	Pole Length Feet	Overall Length	Maximum Wire Size Inches	APPROX. WEIGHT	
					Pounds	Ounces
M4655-2	1 $\frac{1}{2}$	8	8' 7 $\frac{3}{4}$ "	1 $\frac{1}{16}$	7	9
M4655-3	1 $\frac{1}{2}$	10	10' 7 $\frac{3}{4}$ "	1 $\frac{1}{16}$	8	9
M4656	2	8	8' 8 $\frac{1}{2}$ "	1 $\frac{1}{16}$	9	10
M4656-1	2	10	10' 8 $\frac{1}{2}$ "	1 $\frac{1}{16}$	10	13
M4656-3	2	12	12' 8 $\frac{1}{2}$ "	1 $\frac{1}{16}$	12	
M4657	2 $\frac{1}{2}$	10	10' 10 $\frac{1}{4}$ "	1 $\frac{1}{2}$	17	8
M4657-1	2 $\frac{1}{2}$	12	12' 10 $\frac{1}{4}$ "	1 $\frac{1}{2}$	19	10
M4657-2	2 $\frac{1}{2}$	14	14' 10 $\frac{1}{2}$ "	1 $\frac{1}{2}$	21	11
M4658	3	10	10' 10 $\frac{1}{2}$ "	1 $\frac{1}{2}$	20	10
M4658-1	3	12	12' 10 $\frac{1}{2}$ "	1 $\frac{1}{2}$	23	6
M4658-2	3	14	14' 10 $\frac{1}{4}$ "	1 $\frac{1}{2}$	26	2

## Chance Rigid Auxiliary Arms



The Chance Rigid Auxiliary Arm can be used as either a lifting arm or side arm. Safety brackets at each end prevent the conductor from slipping off accidentally during the change over. The arm is fastened to the pole by the quick action, safety locking Chance Chain Tightener and braced by a laminated pole. Ratings are 200 pounds per conductor holder on 7 and 8-foot arms and 150 pounds per conductor holder on 10-foot arm. Use of heat treated aluminum alloy fittings has reduced weight of 7-foot arm from 35 pounds to 28 $\frac{3}{4}$  pounds. Weight reduction in other sizes is comparable.

No.	Description	Weight Pounds
M4800	7-Foot Rigid Auxiliary Arm Complete with Two Wire Holders.....	28 $\frac{3}{4}$
M4800-1	8-Foot Rigid Auxiliary Arm Complete with Three Wire Holders.....	31 $\frac{1}{8}$
M4800-2	10-Foot Rigid Auxiliary Arm Complete with Three Wire Holders.....	33 $\frac{1}{8}$



## No. M4800-35 Chance Temporary Distribution Cross Arms

This lightweight Chance Temporary Distribution Cross Arm is designed for changing four or six pin arms or insulators on voltages up to 4 kv. in urban areas where spans are short.

Folding arms permit it to be lifted by hand line through phases to position on pole.

Bottom of cross arm pole is applied with Chance Chain Tightener, top with adjustable strap arrangement.

This unit is rated for 100 pounds per hook, using six lines at once. Hooks are spaced 14 inches apart for sufficient insulation.

Lift pole, 8 feet by 2 $\frac{1}{2}$  inches.

Hinged arms, 4 feet by 2 inches.

Weight, 30 pounds.



Chance Adjustable Platforms  
With Attachments



The use of heat treated aluminum alloy fittings has made possible the addition of twin braces and a reinforcing keel piece to the Chance Adjustable Platform with little increase in weight. Other special features include attachments for converting this platform for tower use or for changing it into a pivot type platform which will rotate through 180 degrees on pole or tower. These pivot attachments—both pole and tower—eliminate the necessity for buying a separate platform. Platforms are equipped with the lightweight, safe locking Chance Chain Tightener. Rope railings 24 inches high may be ordered separately.

No.	Description	Length of Platform Feet	Working Load, End of Platform Pounds	Approx. Weight Pounds
M4901-2	Pole Type Adjustable Platform	6	500	42 <sup>1</sup> / <sub>4</sub>
M4901-3	Pole Type Adjustable Platform	8	500	49 <sup>1</sup> / <sub>4</sub>
M4901-11	Adjustable Type Tower Platform Attachment	6 or 8	...	8 <sup>1</sup> / <sub>4</sub>
M4901-12	Pivot Type Pole Attachment	6	...	28
M4901-13	Pivot Type Pole Attachment	8	...	28 <sup>1</sup> / <sub>2</sub>
M4901-16	Tower Clamps for Pivot Type Pole Attachment	6 or 8	...	13 <sup>1</sup> / <sub>2</sub>
M4901-14	Pivot Type Tower Attachment	6	...	30
M4901-15	Pivot Type Tower Attachment	8	...	30 <sup>1</sup> / <sub>2</sub>
M4901-35	Rope Railing	6	...	12 <sup>3</sup> / <sub>4</sub>
M4901-45	Rope Railing	8	...	13 <sup>1</sup> / <sub>8</sub>

Chance Universal Poles



Chance Universal Poles are designed for attaching a variety of fittings making one tool do the work of several, eliminating the need for carrying a pole for each tool. Notches on heads dovetail with those on individual fittings and connections are easily tightened by hand with the wing screw. Standard lengths are 8 feet or two 4-foot sections spliced. Longer poles may be obtained if desired.

No.	Description	Pole Diameter Inches	Pole Length	Weight Pounds
M1760	With Tie Wire Assistant, One Head	1 <sup>1</sup> / <sub>4</sub>	8'	3
M1760-1	With Cotter Key Assistant, One Head	1 <sup>1</sup> / <sub>4</sub>	8'	3
M1760-2	With Tie Wire Assistant and Splice	1 <sup>1</sup> / <sub>4</sub>	Two 4' Lengths	5
M1760-4	Tie Wire, Cotter Key Assistant, Two Heads	1 <sup>1</sup> / <sub>4</sub>	8'	3 <sup>1</sup> / <sub>16</sub>
M1760-6	Tie Wire, Cotter Key Assistant, Splice and Two Heads	1 <sup>1</sup> / <sub>4</sub>	Two 4' Lengths	5 <sup>7</sup> / <sub>8</sub>

Chance Universal Emergency Storm Tools



The Chance Universal Storm Tool is a short length of pole equipped with special insulator skirts. Pole has a universal head on one end and a universal spline fitting on the other for attaching to a standard universal pole. Its purpose is to do hot line work when rain, sleet, or heavy snow make the use of regular tools hazardous. Hoods prevent water stream from running down pole. Tool should be used for a limited time and considered an emergency tool.

No.	Description	For Working on Voltages
M4455-64	Two Insulator Skirt Tool	23 kv.
M4455-65	Three Insulator Skirt Tool	34 kv.

Chance Wire Tong Saddle and Clamp



This pole attachment for wire tongs used in hot line work is made of heat treated aluminum alloy. It is quickly attached and securely held with the Chance Safety Chain Tightener. A clevis attachment for blocks eliminates binding, for the blocks swing with the wire tong. Clamp has stainless steel liner.

No.	Size Inches	Approx. Weight Pounds
M4740-3	1 <sup>1</sup> / <sub>2</sub>	8
M4740-4	2	8 <sup>3</sup> / <sub>16</sub>
M4740-5	2 <sup>1</sup> / <sub>2</sub>	8 <sup>5</sup> / <sub>8</sub>
M4740-9	3	8 <sup>9</sup> / <sub>16</sub>

## Chance Prong and Blade Type Tie Sticks



Fixed 2 Prong with Universal Head



Fixed 3 Prong with Universal Head



Fixed Blade with Universal Head



Rotary Blade with Universal Head



Rotary Prong with Universal Head

Fixed Two and Three Prong Tie Sticks with \*Universal Heads on the opposite end are used for manipulating tie wires. They are especially desirable for ties with looped ends and may also be used for pulling disconnects, installing cumalongs, etc. The third prong is a short, stubby finger which aids in making short bends with tie wire.

Fixed Blade Tie Stick with \*Universal Head on the opposite end is primarily used for removing insulator ties which do not have looped ends. Recommended for replacing ties which have had their looped ends kinked or burned off.

Rotary Blade Tie Stick with \*Universal Head on opposite

end handles tie wires with or without looped ends speedily and easily. Swivel action permits full turn on tie wire without releasing contact. A tie wire assistant is attached to the pole for prying up tie wires which do not have looped ends.

Rotary Prong Tie Stick with \*Universal Head on opposite end is used for replacing or removing insulator ties with looped ends. Hook swivels freely to aid in maneuvering tie wire.

\*Universal head on opposite end of pole is used for attaching other line tools making this two tools in one. Available also without universal head.

No.	Description	Pole Length Feet	Weight Pounds
M1855-17	Fixed 2-Prong Tie Stick with Universal Head	8	3 <sup>3</sup> / <sub>4</sub>
M1855-20	Fixed 3-Prong Tie Stick with Universal Head	8	4
M1855-6	Fixed Blade Tie Stick with Universal Head	8	3
M1855-26	Rotary Blade Tie Stick with Universal Head	8	2 <sup>7</sup> / <sub>8</sub>
M1855-19	Rotary Prong Tie Stick with Universal Head	8	2 <sup>7</sup> / <sub>8</sub>

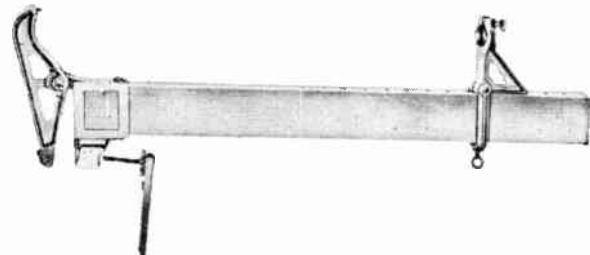


## Chance Lever Type Wire Cutters

Use of aluminum alloy fittings has made it possible to reduce the weight of the 4-foot Chance Lever Type Wire Cutter by two pounds and yet change from spruce to hardwood in the pole for greater strength and rigidity.

Operator is insulated from cutting head by fiber operating rod.

No.	Pole Length Feet	Recommendations	Weight Pounds
M1871-4	4	Cutting Maximum of 2/0 Hard Drawn Copper or ACSR Wire	6 <sup>1</sup> / <sub>4</sub>
M1871-6	6		
M1873-4	4	Cutting Maximum of 2/0 Weatherproof Stranded Copper, 4/0 Hard Drawn Copper, or 4/0 ACSR Wire	9 <sup>1</sup> / <sub>4</sub>
M1873-6	6		



## Chance Rural Dead End Strain Carriers

This strain carrier simplifies and speeds up changing dead end insulators on transmission lines up to and including 23 kv.

Handles insulators up to 10 inches in diameter.

Semi-corner fitting with clevis at the back for engaging conductor clamps on semi-corner construction may be ordered separately.

No.	Description	Take-Up Inches	SPAN BETWEEN ROCKER — ARM AND BRACKET, IN. — Minimum      Maximum		Maximum Working Load Pounds	Approx. Weight Pounds
M1843-6	Strain Carrier for 10-Inch Maximum Insulators	4	17	47	2500	16
M1843-7	Strain Carrier for 10-Inch Maximum Insulators	4	17	71	2500	20
M1843-8	Semi-Corner Fitting	..	..	..	..	13 <sup>1</sup> / <sub>6</sub>

**No. 1 Diamond Toggle Bolts**



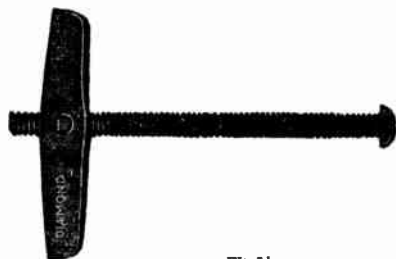
Used for making attachments to hollow brick, tile, or lath walls.

Furnished with steel toggles and steel bolts, also with brass toggles and brass bolts.

Threaded bolt riveted to toggle.

No.	Per 100	Size Inches	Shipping Wt. Lb. per 100	No.	Per 100	Size Inches	Shipping Wt. Lb. per 100
7122	\$6.60	1/8 x2	2 3/4	7154	\$13.00	5/16x4	12 1/2
7123	6.80	1/8 x3	3	7155	14.00	5/16x5	14 1/2
7124	7.00	1/8 x4	3 1/4	7156	15.00	5/16x6	16 1/2
7133	7.00	3/16x3	4 1/4	7163	14.00	3/8 x3	17 1/2
7134	7.30	3/16x4	4 3/4	7164	16.00	3/8 x4	19 1/2
7135	8.40	3/16x5	5 1/2	7165	18.00	3/8 x5	22 1/2
7136	8.90	3/16x6	6	7166	20.00	3/8 x6	24 1/4
7143	7.70	1/4 x3	7	7183	22.00	1/2 x3	33
7144	8.00	1/4 x4	9	7184	25.00	1/2 x4	40
7145	9.40	1/4 x5	10	7185	28.00	1/2 x5	44 1/2
7146	9.80	1/4 x6	10 1/4	7186	30.00	1/2 x6	52
7153	12.00	5/16x3	11	.....	.....	.....	.....

**No. 5 Diamond Toggle Bolts**



Swivel nut in the toggle head permits a stove bolt being screwed in with a finished head at the outside of the work.

Furnished with round or flat slotted toggle or brass toggle heads and brass bolts.

No.	Per 100	Size In.	Wt. Lb. per 100	No.	Per 100	Size, In.	Wt. Lb. per 100
7522	\$6.60	1/8x2	1 1/2	7546	\$9.80	1/4x6	10 1/2
7523	6.80	*1/8x3	2	7553	12.00	5/16x3	11
7524	7.00	*1/8x4	2 1/4	7554	13.00	5/16x4	12 1/2
7533	7.00	3/16x3	4 1/4	7555	14.00	5/16x5	14
7534	7.30	3/16x4	4 3/4	7556	15.00	5/16x6	16 1/2
7535	8.40	3/16x5	5 3/4	7563	14.00	3/8x3	17 1/2
7536	8.90	3/16x6	6	7564	16.00	3/8x4	19 1/2
7543	7.70	1/4x3	7	7565	18.00	3/8x5	22 1/2
7544	8.00	1/4x4	9	7566	20.00	3/8x6	24 1/4
7545	9.40	1/4x5	10	.....	.....	.....	.....

\*Mushroom head style 1/8-inch diameter only.

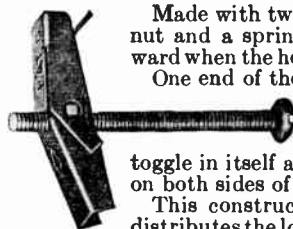
**Diamond DHD Hammer Drive Anchors**



For nailing to concrete, brick or stone. Shields are non-rusting, made of aluminum alloy; made of 1 piece of metal, a single unit which cannot become disarranged. Furnished with heavily galvanized nails.

No.	Per 100	Diam. and Lgth. of Shield In.	Diam. Drill to Use In.	Avg. Load Sustained Lb.	Working Load Lb.	Std. Pkg.	Wt. Lb. per 100
4314	\$8.00	3/16x 7/8	3/16	500	100	100	1
4320	9.00	3/16x1 1/4	3/16	650	130	100	1 1/8
4416	10.00	1/4x1	1/4	1200	240	100	1 1/2
4420	11.00	1/4x1 1/4	1/4	1300	260	100	2
4424	12.00	1/4x1 1/2	1/4	1400	280	100	2 1/8
4520	14.00	5/16x1 1/4	5/16	1450	290	100	2 3/4
4528	16.00	5/16x1 3/4	5/16	1500	300	100	3 1/2
4536	18.00	5/16x2 1/4	5/16	1750	350	100	4 1/2
4544	20.00	5/16x2 3/4	5/16	1750	350	100	5
4632	20.00	3/8x2	3/8	2000	400	100	6 1/2
4652	25.00	3/8x3 1/4	3/8	2000	400	100	8 1/4
4836	30.00	1/2x2 1/4	1/2	3000	600	50	11 1/2
4856	35.00	1/2x3 1/2	1/2	4000	800	50	15 1/2

**Diamond Steel Spring Toggle Bolts**



Made with two wings that engage a trunion nut and a spring which forces the wings outward when the head has passed through the wall. One end of the spring is extended to prevent rotation of the head while turning in the screw.

Each wing is a complete toggle in itself and forms a bridge with bearing on both sides of the hole.

This construction gives great strength and distributes the load over a maximum of wall area.

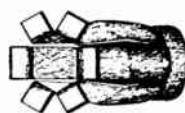
All toggle threads are National Standard Thread. Head and bolts packed 100 in a box.

TYPE R—with round head screws. TYPE F—with flat head screws and TYPE M with mushroom head screws furnished in 1/8-inch diameter only. TYPE N—reverse R or F screw and add nut. TYPE P—reverse R or F screw and add acorn nut. Cap nuts extra.

No.	Per 100	Steel Toggle Heads Only per 100	BOLT SIZE			Size Drill Req. In.	Ship Wt. Lb. per 100
			DIAMETER—Wire Gage No.	Thrds. per In.	Lgth. In.		
7022	\$6.60	\$6.30	1/8	6	32	2	3/8 13 1/4
7023	6.80	6.30	1/8	6	32	3	3/8 2
7024	7.00	6.30	1/8	6	32	4	3/8 2 1/4
7033	7.00	6.40	3/16	10	24	3	1/2 3 3/4
7034	7.30	6.40	3/16	10	24	4	1/2 4 1/4
7035	8.40	6.40	3/16	10	24	5	1/2 4 3/4
7036	8.90	6.40	3/16	10	24	6	1/2 5 1/2
7043	7.70	7.00	1/4	..	20	3	1 1/16 6
7044	8.00	7.00	1/4	..	20	4	1 1/16 7 1/4
7045	9.40	7.00	1/4	..	20	5	1 1/16 8 1/2
7046	9.80	7.00	1/4	..	20	6	1 1/16 9 1/2
7053	12.00	9.00	5/16	..	18	3	1 3/16 11
7054	13.00	9.00	5/16	..	18	4	1 3/16 13
7055	14.00	9.00	5/16	..	18	5	1 3/16 15
7056	15.00	9.00	5/16	..	18	6	1 3/16 17

For prices on brass bolts and brass toggle heads, multiply the list by 2.8.

**Diamond Crimp-Nuts**



Meets the need for a secure means of attachment which may be quickly placed in position on a partially or wholly completed sheet metal structure even though the back or interior of structure is not readily accessible.

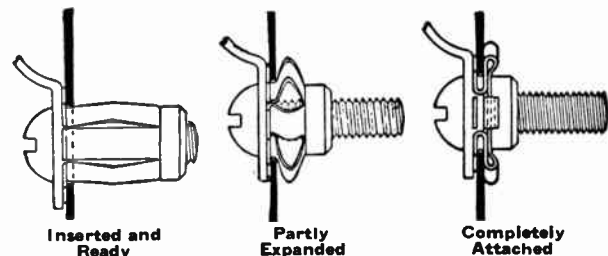
It may be used in a hollow section where space is closely confined. Usually 1/2-inch of space is sufficient.

Holding capacity equals that of a standard bolt.

No tool is required for making ordinary attachments. When many uniform attachments are to be made, use of the attaching tool is recommended.

Prices do not include screws.

Packed 100 per box.



Screw Size....	6-32	8-32	10-24	10-24	10-32	1/4"-20	5/16"-18
Per 100.....	\$7.50	7.50	7.50	10.00	7.50	8.50	9.00
Hole Diam.in.	3/16	3/8	3/8	3/8	3/8	15/32	17/32
Length.....in.	3/16	3/16	3/16	1 1/16	3/16	1 1/2	1 1/2
Wt. per 100.lb.	.7	.7	.7	1.4	.7	.9	1.0
Rapid Attaching Tool.....	each \$12.50						



## Diamond P Lag Screw Expansion Shields



Malleable iron. Prices without lag screw.

Diam. Lag Screw Inches	Long Standard O.D. & Shield					Short Standard O.D. & Shield					
	No.	Per 100	Drill Size Inches	Length No. per Pkg.	Ship. Wt. Lb. per 100	No.	Per 100	Drill Size In.	Length No. per Pkg.	Ship. Wt. Lb. per 100	
3/16	1104	\$15.00	1/2	1 1/2	100	4	1003	3/8	1	100	2
1/4	1105	18.00	5/16	1 3/4	100	5	1005	1/2	1	100	3
5/16	1106	25.00	3/8	2 1/4	50	11	1006	5/8	2	50	7
3/8	1108	38.00	3/4	3 1/2	50	17	1008	3/4	2	50	10
1/2	1110	45.00	7/8	3 1/2	25	21	1010	7/8	2	50	13
5/8	1112	65.00	1 1/8	3 1/2	25	34	1012	1 1/8	2	25	21
3/4	1114	95.00	1 3/8	5	25	75	.....	.....	.....	.....	.....
1	1116	110.00	1 1/2	5	25	90	.....	.....	.....	.....	.....
1 1/4	1120	250.00	1 7/8	8 3/4	20	270	.....	.....	.....	.....	.....

## Di-En-Key Expansion Shields Malleable Iron



For use in suspension rods for mine hangers, steam and water pipes, sprinkler systems and allied

lines. The smaller sizes are adapted to opera chairs and school furniture work. Furnished either closed back (bottom bearing) as illustrated or open back.

Prices do not include machine bolt.

	1604	1605	1606	1608	1610	1612
Closed Back No. ....	1604	1605	1606	1608	1610	1612
Open Back No. ....	1704	1705	1706	1708	1710	1712
Diam. Screw...inches	1/4	5/16	3/8	1/2	5/8	3/4
Length.....inches	1	1 3/4	2	2 1/2	3	3 3/4
O.D.....inches	7/16	9/16	1 1/16	7/8	1	1 1/4
No. per Box.....	100	100	50	50	50	25
Weight per 100 lb....	2	6	9	17	21	34
Per 100.....	\$15.00	18.00	25.00	38.00	45.00	65.00

## Keystone Single Expansion Shields For Machine Bolts and Machine Screws



Diam. of Screw or Bolt Inches	No.	Per 100	Length Inches	Outside Diam. and Size Drill to Use, Inches	No. per Pkg.	Shipping Weight, Pounds per 100
1/4	1504	\$15.00	1 5/16	1/2	100	4
5/16	1505	18.00	1 1/2	5/16	100	6
3/8	1506	25.00	1 5/8	1 1/16	50	9
1/2	1508	38.00	1 7/8	7/8	50	16
5/8	1510	45.00	2	1	25	19
3/4	1512	65.00	2 3/4	1 3/16	25	38

## Keystone Interlocking Expansion Shields Double—For Use with Machine Bolts



No. per package: 1/4 and 5/16 inch, 100; 3/8 and 1/2 inch, 50; 5/8 to 1 inch inclusive, 25; and 1 1/4 inches, 20.

Makes permanent fastenings to concrete, brick or stone. Prevents nut being drawn out of shield when heavy loads are applied. Guides mechanic in determining when to stop tightening up bolt. Prevents nut being drawn past point of maximum expansion. Locks two sides and nut into a unit of resistance against load.

Diam. Screw or Bolt In.	No.	Per 100	Shields Only	Length to Use In.	O.D. and Size Drill to Use In.	Wt. Lb. per 100
1/4	1404	\$15.00	1 1/2	1/2	5	5
5/16	1405	18.00	1 3/4	5/16	6	6
3/8	1406	25.00	2	1 1/16	10	10
1/2	1408	38.00	2 1/2	7/8	18	18
5/8	1410	45.00	2 3/4	1	27	27
3/4	1412	65.00	3 1/4	1 3/8	35	35
1	1414	95.00	4	1 1/2	85	85
1 1/4	1416	110.00	4 3/4	1 5/8	100	100
1 1/4	1420	250.00	6	2 3/8	240	240

## Style B Diamond Super-Grip Expansion Bolts



Shield expanded by long, tapered cone shaped end of bolt. Nut grips work and expands shield. Bolts hot galvanized by the Diamond process. One calking tool furnished in each box of 100 bolts. Prices include bolts.

No.	Per 100	Size In.		O.D. In.	Depth of Hole Inches
		Diam.	Legth.		
2041A	\$15.50	1/4	1 1/2	7/16	1
2042	15.65	1/4	2	7/16	1
2042A	15.80	1/4	2 1/2	7/16	1
2043	15.95	1/4	3	7/16	1
2052	23.50	5/16	2	1 1/2	1 1/4
2052A	24.00	5/16	2 1/2	1 1/2	1 1/4
2053	24.50	5/16	3	1 1/2	1 1/4
2062A	29.25	3/8	2 1/2	9/16	1 1/2
2063	30.00	3/8	3	9/16	1 1/2
2063A	30.75	3/8	3 1/2	9/16	1 1/2
2064	31.50	3/8	4	9/16	1 1/2
2065	33.00	3/8	5	9/16	1 1/2
2066	34.50	3/8	6	9/16	1 1/2
2083	44.40	1/2	3	3/4	2 1/8
2084	47.00	1/2	4	3/4	2 1/8
2085	48.20	1/2	5	3/4	2 1/8
2086	49.40	1/2	6	3/4	2 1/8
2103	76.40	5/8	3	7/8	3
2104	80.00	5/8	4	7/8	3
2105	83.80	5/8	5	7/8	3
2106	87.60	5/8	6	7/8	3
2124	114.60	3/4	4	1	3 1/8
2125	120.00	3/4	5	1	3 1/8
2126	125.40	3/4	6	1	3 1/8

## Diamond N.Y. Screw Anchors For Wood Screws



Made of non-corroding, rustproof composition metal. Packed 100 in a box.

No.	Per 100	Diam. of Screw Inches	Length Anchor In.	O.D. Anchor In.	Size Screws	Wt. Lb. per 100
6208	\$4.40	1/8	1 1/2	1/4	5-6-7	1
6210	4.40	1/8	5/8	1/4	5-6-7	1
6212	4.40	1/8	3/4	1/4	5-6-7	1
6216	4.40	1/8	1	1/4	5-6-7	1 1/2
6308	5.00	3/16	1 1/2	5/16	8-9-10-11	1 1/2
6312	5.00	3/16	3/4	5/16	8-9-10-11	2
6316	5.00	3/16	1	5/16	8-9-10-11	3
6320	5.50	3/16	1 1/4	5/16	8-9-10-11	5
6326	6.25	3/16	1 5/8	5/16	8-9-10-11	3 1/2
6412	5.60	1/4	3/4	7/16	12-13-14	3
6416	5.60	1/4	1	7/16	12-13-14	4
6424	8.00	1/4	1 1/2	7/16	12-13-14	6
6432	10.00	1/4	2	7/16	12-13-14	8 1/4
6440	12.00	1/4	2 1/2	7/16	12-13-14	10 1/2
6512	6.25	5/16	3/4	7/16	15-16-17-18	3
6516	6.25	5/16	1	7/16	15-16-17-18	3 1/2
6524	9.00	5/16	1 1/2	7/16	15-16-17-18	6 1/4
6532	9.50	5/16	2	7/16	15-16-17-18	8 1/4
6616	9.00	3/8	1	9/16	20-22-24	6 1/2
6620	9.00	3/8	1 1/4	9/16	20-22-24	8 1/2
6632	10.00	3/8	2	9/16	20-22-24	11
6832	25.00	1/2	2	3/4	26-28-30	21 3/4
6840	30.00	1/2	2 1/2	3/4	1/2-In. Lag	28
6932	30.00	5/8	2	7/8	5/8-In. Lag	25
6956	50.00	5/8	3 1/2	7/8	5/8-In. Lag	42

**Diamond Calking Anchors**

For Use with Machine Screws



Cat. No.	Per 100 Without Screws	Diameter Bolt or Screw, In.	SIZE, HOLE INCHES		Std. Pkg.	Weight Pounds per 100
			Diam.	Depth		
3020	\$3.80	No. 6-32	1/4	3/8	100	3/4
3025	4.50	No. 8-32	3/16	1/2	100	1 1/2
3030	4.95	No. 10-24	7/16	5/8	100	2
3035	6.50	No. 12-24	7/16	3/4	100	3 1/2
3040	7.20	1/4-20	1/2	7/8	100	5 1/2
3050	9.75	3/8	1	5/8	50	10 1/2
3060	12.00	3/8	3/4	1 1/4	50	16
3070	15.00	7/16	7/8	1 1/2	50	21
3080	15.00	1/2	7/8	1 1/2	50	21
3100	25.00	5/8	1 1/8	2	50	41
3120	50.00	3/4	1 1/4	2 1/4	50	64

**Diamond Calking Tools**



One tool packed in each box of anchors.

**Diamond Multi-Size Screw Anchors**



Designed to accommodate in one anchor several diameters of wood screws. Made from high grade malleable iron.

Packed 100 in a box.

No.	Per 100	Designating Sizes	For Wood Screws No.	Lgth. In.	Drill Size Inches	Wt. Lb. per 100
5212	\$5.00	Nos. 6 to 8x 3/4"	6 to 8	3 1/4	1/4	1
5224	5.60	Nos. 6 to 8x 1 1/2"	6 to 8	1 1/2	1/4	13 1/4
5312	5.60	Nos. 10 to 14x 3/4"	10 to 14	3 3/4	5/16	1 1/2
5316	5.60	Nos. 10 to 14x 1"	10 to 14	1	5/16	1 3/4
5324	8.00	Nos. 10 to 14x 1 1/2"	10 to 14	1 1/2	5/16	2 1/2
5516	6.25	Nos. 16 to 18x 1"	16 to 18	1	3/8	2 3/4
5524	9.00	Nos. 16 to 18x 1 1/2"	16 to 18	1 1/2	3/8	4
5628	10.00	Nos. 20 to 24x 1 3/4"	20 to 24	1 3/4	7/16	5 1/4

**Diamond N Drills**



No. 700 4-Point or Star Drill



No. 710 Diamond or Single Point Drill

Made of high grade octagon drill rod. Quality of steel is tested for uniformity. Heat treatment is scientifically conducted; heats for hardening and drawing the temper are determined by pyrometer and thermometer.

Diam. Drill In.	8-In. Length		12-In. Length		18-In. Length		24-In. Length	
	Per Doz.	Wt. Lb. per Doz.	Per Doz.	Wt. Lb. per Doz.	Per Doz.	Wt. Lb. per Doz.	Per Doz.	Wt. Lb. per Doz.
1/4	\$8.25	1 1/8	\$8.50	1 3/4	\$11.00	3	\$13.50	3 1/2
5/16	8.25	1 1/2	8.50	2 1/4	11.00	3 7/8	13.50	5 1/8
3/8	8.25	2 1/4	8.50	3 1/2	11.00	5	13.50	7 1/8
7/16	8.70	3 1/8	9.00	4 3/4	11.50	7	14.00	9
1/2	9.65	3 1/4	10.00	4 3/8	12.50	7 3/4	15.00	10 1/4
9/16 & 5/8	11.65	5 1/2	12.00	8 1/2	15.00	13 3/4	17.50	18 1/4
11/16 & 3/4	13.70	6 3/4	14.00	10 1/2	17.50	16 3/4	20.00	22 1/4
13/16 & 7/8	15.30	8 1/4	16.00	12 1/2	20.00	20 1/2	22.50	27 1/2
1	17.00	10	18.00	19	22.50	30	25.00	40
1 1/8	23.00	16	24.00	25	28.00	42	32.00	54
1 1/4	.....	.....	30.00	25	35.00	42 1/2	40.00	57
1 3/8	.....	.....	40.00	33	45.00	53	50.00	72
1 1/2	.....	.....	50.00	33	56.00	54	62.00	72
1 5/8	.....	.....	60.00	40	66.00	63	72.00	84
1 3/4	.....	.....	75.00	44 1/2	81.00	70	87.00	93
1 7/8	.....	.....	90.00	50	97.00	80	104.00	106
2	.....	.....	105.00	52	112.00	81	120.00	108
2 1/4	.....	.....	135.00	53	145.00	83	165.00	110
2 1/2	.....	.....	165.00	75	175.00	119	195.00	158

Can be furnished with tapered shanks to fit electric hammers. Supplied on order in lengths up to 6 feet for rock drilling.

**No. 720 Diamond Di-Forge Twist Drills**



Forged from a solid bar of Vanadium tool steel. For use with a hand or electric hammer. Rotates clockwise if used with hand hammer; rotates continuously if used with electric hammer. May be used with Diamond Styles A, B, and C.

Diam. In.	Per Dozen	Length Overall Inches	Depth Hole Inches	Wt. Lb. per Dozen
3/16	\$10.80	2 3/4	1 3/8	1 1/2
1/4	10.80	3 1/4	1 3/4	3/4
5/16	12.80	4 1/4	2 1/2	1
3/8	14.80	5	3	1 1/4
7/16	18.80	5 1/4	3 1/4	1 1/2
1/2	22.80	5 3/8	3 1/4	2
9/16	26.80	5 1/2	3 3/4	2 1/2
5/8	28.80	5 3/4	4	2 1/2

**No. 730 Diamond N Drill Points**



Made of steel.

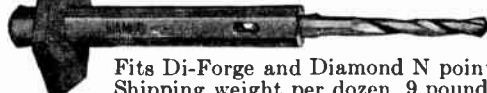
Drills are carefully tempered to insure sufficient hardness at the point to withstand the wear of cutting and the temper is drawn away toward the shank, so as to produce a softer steel where it enters the handle to prevent its breaking off at that point.

May be used with Diamond Drill Holders Styles A, B and C and Diamond Hammer Drills.

Size Inches	Per Dozen	Depth Hole		Wt. Lb. per Dozen	Size Inches	Per Dozen	Depth Hole		Wt. Lb. per Dozen
		Inches	Inches				Inches	Inches	
1/4	\$8.50	4 1/2	2	1 1/4	9/16 & 5/8	\$12.00	6 1/4	5	3 3/4
5/16	8.50	4 1/4	2	1 1/4	1 1/16 & 3/4	14.00	6 1/2	5 1/2	4 1/2
3/8	8.50	4 1/4	2	1 1/2	13/16 & 7/8	16.00	7	6	6
7/16	9.00	4 7/8	3 3/4	2	1	18.00	7 1/4	7	7 3/4
1/2	10.00	5	4	2					

**No. 745 Style A Diamond Drill Holders**

Forged from solid bar of Vanadium tool steel. Has a rubber guard.



Fits Di-Forge and Diamond N points. Shipping weight per dozen, 9 pounds.

No. 745.....per dozen \$27.00

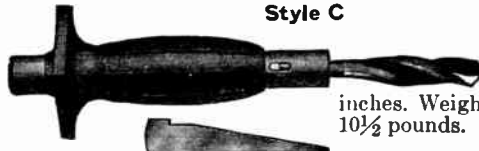
**No. 750 Style B Diamond Drill Holders**



A hand drilling tool made of steel. Either Diamond N or Di-Forge drill points may be used. Weight per dozen, 8 1/2 pounds.

No. 750, without Points.....each \$2.00

**No. 755 Diamond Rubber Grip Drill Holders Style C**



Overall length, 6 1/4 inches. Weight per dozen, 10 1/2 pounds.

No. 755.....per dozen \$48.00

## Peirce Lead Sleeve Expansion Bolts

Galvanized



Consists of a steel bolt with a wedge or cone shaped head, tapering toward shank and provided with a lead sleeve.

No.	Per 100	Bolt Size In.	Overall Length In.	Drill Hole Diam. In.	Shipping Wt. Lb. per 100
1	\$9.73	1/4	1 3/4	1/2	7.7
2	9.96	1/4	2	1/2	8.8
3	10.34	1/4	2 1/2	1/2	8.8
4	12.49	1/4	3 1/4	1/2	11.0
4A	14.15	1/4	4	1/2	12.1
4B	17.69	1/2	5	1/2	13.2
5	17.31	3/8	2 1/2	5/8	16.5
6	18.57	3/8	3	5/8	17.6
7	19.84	3/8	3 1/2	5/8	18.7
8	23.25	3/8	4 1/2	5/8	20.9
9	23.61	3/8	5	5/8	22.0
10	25.14	3/8	5 1/2	5/8	23.1
11	26.03	1/2	2 1/2	7/8	45.1
12	30.59	1/2	3 1/2	7/8	51.7
13	32.38	1/2	4	7/8	55.0
14	33.12	1/2	4 1/2	7/8	58.3
15	35.25	1/2	5	7/8	61.6
16	36.66	1/2	5 1/2	7/8	64.9
17	39.06	1/2	6 1/2	7/8	68.2
18	43.86	1/2	8	7/8	80.3

### Extra Lead Sleeves

No.	Per 100	For Bolt Diameter	Overall Length	Ship. Weight Per 100
22	\$3.27	1/4	9 1/16	3.3
23	5.29	3/8	3 3/4	6.6
24	16.19	1/2	1 1/2	24.2

## Peirce Expansion Nuts



Installed independently, and tapped to receive the bolt.

No.	Per 100	Cone Material	Mach. Screw No. or Size In.	Diam. Drill In.	Min. Depth Hole In.	Shipping Wt. Lb. per 100
6200	.....	Brass	6	1/4	3/8	6
6202	.....	Brass	8	5/16	1/2	1.0
6204	.....	Brass	10	3/8	1/2	1.9
6206	.....	Brass	12	7/16	3/4	2.6
6208	.....	Brass	1/4	1/2	3/4	3.8
6210	.....	Brass	5/16	5/8	7/8	7.7
6212	.....	Steel	3/8	3/4	1 1/4	14.3
6214	.....	Steel	1/2	7/8	1 3/8	22.0
6216	.....	Steel	5/8	1 1/8	2	45.1
6220	.....	Steel	3/4	1 3/8	2 1/8	75.9

Prices upon application.

## No. 31 Peirce Expansion Shields



Used with wood or lag screws for masonry attachments.

Size screw, Nos. 20 and 22. Shield: diameter, 1/2 inch; length 2 inches.

Shipping weight per 100, 12 pounds.

No. 31	per 100	\$18.70
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## Peirce Hammer Drills



Holes may be drilled in masonry with this drill in about one quarter of the time required by ordinary methods. The hazard of injured hands is also completely eliminated. Jammed drill points are quickly removed and most important, holes are neatly and quickly drilled. The outer end of the hammer drill is hollow for tamping lead sleeves. Chuck takes all sizes of drills.

No.	50	53
Per 100	\$2608.53	2778.28
For Tamping Bolt	1/4	3/8
Ship. Weight per 100	825	880

## Peirce Drill Points



Made of fine tool steel, carefully tempered to the proper hardness and toughness. Two inches of the point is contained in the chuck.

Special sizes up to 1-inch diameter and any length can be furnished to fit Peirce Hammer Drill Chucks.

No.	Per 100	Drill Diam. In.	Overall Drill Length In.	Bolt Diam. In.	Shipping Wt. Lb. per 100
56	\$156.85	3/8	4	3/16	22
56-A	186.70	7/16	4	3/16	22
57	156.85	1/2	4	1/4	25
58	178.60	1/2	6	1/4	36
59	384.03	1/2	12	1/4	72
60	289.16	5/8	6	3/8	42
61	578.20	5/8	12	3/8	90
62	404.13	3/4	6	7/16	52
63	809.19	3/4	14	7/16	148
64	532.66	7/8	6	1/2	63
65	1066.13	7/8	12	1/2	150

## No. 55 Peirce Hand Chucks



Chuck allows the use of Peirce Drill Points with the old method of hand-and-hammer drilling. Similar to chuck of Peirce Hammer Drill. Will fit any Peirce Drill Points.

No. 55, Ship. Wt.	285 Pounds	per 100	\$351.65
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## Peirce Tamping Tools



Used for tamping lead sleeves into masonry.

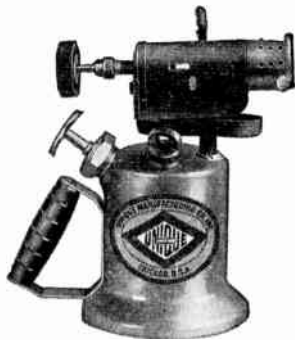
Nos. 47, 48 and 49 are straight slotted for use on hooks and similarly shaped items.

Nos. 67, 68 and 69 are straight for standard straight bolts or screws.

No.	47	48	49	67	68	69
Per 100	\$51.10	73.59	107.88	110.15	113.58	126.11
Diam. Expansion Bolt	1/4	3/8	1/2	1/4	3/8	1/2
Overall Length	6	6	8	6	6	8
Ship.wt.per 100	30	64	110	37	54	182



**Unique Gasoline and Kerosene Blow Torches**



No. 3



No. 7

For heavy duty hard service under severe weather conditions and applications requiring large volume of flame and extra heat.

Flame, 1½x12 inches, 2000°F. Flame can be regulated to small jet.

Closing the valve forces slender cleaning needle through orifice, keeping it clean and full size.

Has replaceable, threaded needle and orifice block, and removable channel plugs for cleaning, and powerful, dependable pump.

No. ....	Gasoline		Kerosene	
	3-L	7	3-K	7-K
Each .....	\$13.33	16.66	16.66	20.00
Tank Capacity.....quarts	1	2	1	2
Weight.....lb.	4½	5½	4½	5½

**No. 0 Unique Gasoline Blow Torches**

1-Pint Capacity



A compact torch for the tool kit; for use in places hard to get at. Produces an intense heat of 1900°F. plus. Burns in any position. Fine flame control. Closing fuel valve forces the steel cleaning needle through orifice, clearing it of foreign particles. The needle, threaded orifice block and all other parts are replaceable. Channels fitted with removable threaded plugs for cleaning.

Steel tank, brazed fittings, and welded construction for safety. Top filler opening. Oval tank is 2¾

inches through center; 5-inch circle. Size flame, 1x6 inches. Weight, 3 pounds. Generator wind-shield included.

No. 0..... each \$7.33

**No. 1 Unique Gasoline Blow Torches**

1-Quart Capacity



A medium, small flame torch. Produces an intense heat of 1900°F. plus. Burns in any position. Fine flame control. Closing fuel valve forces steel cleaning needle through the orifice, clearing it of foreign particles. Cleaning needle, orifice block and all parts replaceable at small cost. Channels are fitted with removable threaded plugs for cleaning.

Steel tank, powerful pump, brazed fittings, and welded bottom for safety. Filled through bottom funnel filler. Size flame, 1x6 inches.

Weight, 3¾ pounds.

No. 1..... each \$7.33

**No. 50 Unique Heavy Duty Gasoline Public Utility Furnace**



With Style A Hood

Melts 50 pounds of solder in 10 minutes. Flame, 2000°F, ½x12-inch length. Extra fine flame control which holds steady without change.

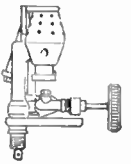
Generator is made of bronze alloy casting, fitted with replaceable orifice block and removable channel plugs.

Tank is made of heavy steel, welded throughout.

Top-Plate has ample support for large kettles and solder pots up to 8-inch size. Handle locks to support solder iron.

Hood. Style A is standard and has open top. Style B hood (for solder irons) may be substituted and accommodates irons up to 12 pounds per pair. Heating time, 4 minutes. Style A hood is furnished as standard.

Tank capacity, 1½ gallons. Dimensions, 9½x13 inches. No. 50, Weight 15 Pounds.....each \$22.33



No. 50 Generator

**No. 58 Unique Kerosene Heavy Duty Public Utility Furnaces**



Melts 50 pounds of solder in 10 minutes. The figure 8 generator burns the fuel without carbon formation, producing a clean flame of 2000°F.

Orifice is cleared of foreign particles by turning flame control valve while furnace is burning.

Tank is made of heavy steel, welded throughout.

Top-Plate has ample support for large kettles and solder pots up to 8-inch size. Handle locks to support solder iron.

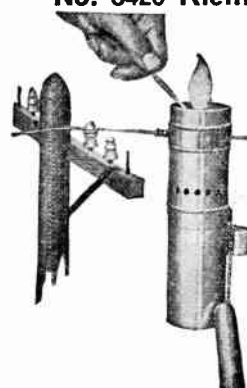
Hood. Style A hood is standard and has open top. Style B hood (for solder irons) may be substituted and accommodates irons up to 12 pounds per pair. Heating time, four minutes.

Tank capacity, 1½ gallons. Dimensions, 9½x13 inches. No. 58, Weight 15 Pounds.....each \$22.33



Figure 8 Generator and Orifice Scraper

**No. 3420 Klein's Staysalite Linemen's Torches**



This torch burns alcohol without odor or noise and stays lit in a wind.

Light and small and is lit or extinguished in a moment, as wanted. Has no adjusting parts.

The Staysalite is carried in the lineman's belt and eliminates the ground man; can be hung directly on the wire under joint to be soldered.

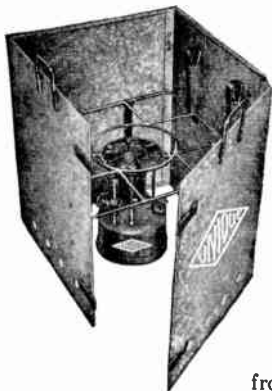
Provided with a cup for holding soldering paste. Can be used as a small heater or for soldering iron.

Weight, 1¼ pounds.

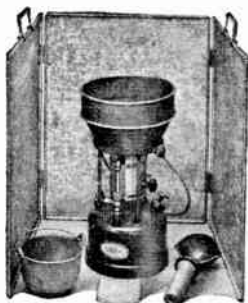
No. 3420.....each \$13.30

## Unique Safety Folding Shields

For Furnaces and Firepots



No. 50



No. 50-C

Protects workers and by-standers from hot materials and shields furnace from wind. Affords a protective spot for tools and accessories.

Galvanized iron with edges rolled around 1/4-inch rod. Rust proofed. No sharp corners. Folds flat for carrying and storing.

No. 50 is a four-panel shield with welded steel grate and supporting brackets for large pots and kettles. Grate hooks on bracket to hold shield in open position.

No. 50-C is a three-panel shield without grate

No. 50 Weight, 15 pounds..... each \$16.66  
 No. 50-C Weight, 27 pounds..... each 8.00

## Unique Air Cooled Balanced Ladles



Wood Handle (Round, 1 3/4-Inch Diameter)  
 Cut Away to Show Method of Attaching

Comfortable insulated, "close to the bowl" grip eliminates strain, and makes it easy to direct and control the flow of molten metal.

Made of pressed steel and treated so that solder cannot stick.

Wood handle can be easily and inexpensively replaced.

Bowl Diameter.....inches	2 1/2	3	3 1/2	4
Each.....	\$1.40	1.50	1.70	1.80
Capacity.....pints	1/8	1/4	3/8	1/2
Weight.....ounces	10	12	14	16

## Unique Air-Cooled Solder-Copper Handles



Shank contact with wood is minimized. This safe handle won't let go—the piano wire grip contracts and expands with the shank—a tight grip always. Simply drive the handle over the pointed shank—no special tools required.

No.....	1	2
For Copper Shanks..... inches	3/32 to 3/8	3/8 to 1/2
Wood Handle Dimensions..... inches	1 1/4 x 6	1 1/2 x 6
Each.....	\$1.00	1.20

## Soldering Coppers



Made of drawn copper bolts of the best quality and

shaped like a hammer. By this method they are as solid as metal can be made, are better heat retainers and should not be compared with such as are cast from copper ingots.

Weight, per Pair.....lbs.	3/4	1	1 1/4	1 1/2
Soldering Coppers.....each				

## Ideal Commutator and Slip Ring Resurfacers

### Commutator Resurfacers

**Extra Coarse.** Exceptionally fast cutting. For "hogging" off excessive copper or other metals.

**Coarse.** Fast cutting. For use where a fair amount of copper or other material is to be removed.

**Medium.** For general utility, high mica, small ridges and burns.

**Finish.** For use after three grades above, bringing the surface to a velvet which quickly becomes a gloss after the brushes have been lowered. Used particularly for periodic application, and for the removal of small burns and ridges, immediately after their appearance.

**Polish.** An excellent grade, which gives a burnished finish. Made of an exceedingly fine, 220-grain aggregate.

### No. 81 Slip Ring Resurfacers

Designed especially for grinding steel and cast iron slip rings. This resurfacer is a slight conductor and should be used with the current off and no load on machine.

**Coarse No. 81.** For rapid grinding and for removing large quantities of material.

**Medium No. 81.** For general utility and removing small pits and burns.

**Finish No. 81.** For final application after Coarse No. 81 or Medium No. 81 has been used.

### Pencil Type (No Handle)

For fans or signal motors, auto generators, locomotive headlight motors and other fractional horse power motors.

### Straight Handle Type

Used primarily on inaccessible types of commutators on small or enclosed motors.

There are four standard sizes, but other larger sizes can be made to order.



### Vertical Adjustable, Tramway and Railway Handle Types

These three types of resurfacers are for use on medium size motors and small generators.

**Vertical Adjustable Handle.** The knob handle is fastened permanently. The extra rod handle makes this type universal to meet practically all conditions. The knob is drilled on two sides, also on the top, so that the rod handle can be adjusted to any one of three positions.

**Tramway Handle.** This is a stout handle with a good grip, permanently mounted at a 45° angle.

**Railway Handle.** This is a stout handle with a good grip, permanently mounted in a vertical position.

### Wood Block Handle or Tool Type

For use in Ideal Precision Grinders or any type of lathe truing device. Equipped with wood block handle for clamping rigidly into the grinder.

### U Handle and Saw Handle Types

These types are for use on large motors, small rotary converters, motor-generator sets, telephone generators, etc.

**U Handle.** Preferred when the stone is to be used with the handle parallel to the brush arm.

**Saw Handle.** Desirable when the stone is to be used with the handle at right angles to the brush arm.

Double U Handle and Double Saw Handle Types are also available.

### Slip Ring Types

To secure the most efficient grinding results, specify material from which rings are made, such as iron, steel, bronze, or brass. When space permits, use a resurfacer, about 1 inch wider than the ring, bridging over the entire width. Resurfacer should be three times as long as the flat spots as bridging over them assures a perfect job.



### "2-in-1" Pocket Type

For all-around shop practice. Made up in any combination of the five grades, two grades being cemented together.

Prices and Complete Information Sent on Request

Condensed Listing of Ideal Commutator Motor Winding and Repair Shop Tools

**Brush Seaters**

For seating carbon, graphite or metal-composition brushes. Standard size: length, 4¾ inches; face, 1½x5½ ineh. Per Dozen..... \$6.00

**Portable Precision Grinders**

**No. 24-004 Perfect Model.** A high grade precision tool for use with Ideal Tool-Type Resurfacers. Adaptable to all open type commutators and rings. Furnished in any one of fifteen different lengths, ranging from 6 to 36 inches inclusive by 2-inch variations.

Shipping weight, 12-inch size, 45 pounds. No. 24-004, with 12-Inch Bed Plate, Including Brush Arm Supports.....each \$110.00

**No. 24-020 Ideal Model.** Designed especially for use in close quarters or on machines with outboard fans, large bearing pedestals, or close end frames. Furnished in the same lengths as the No. 6 Perfect Model.

Shipping weight, 12-inch size, 45 pounds. No. 24-020, with 12-Inch Bed Plate, Including Brush Arm Supports.....each \$140.00

**No. 24-033 Midget Model.** Designed especially for use on small commutators having a face width of 8 inches or less, as well as for use on medium-sized slip rings. For use with Ideal Tool-Type Resurfacers. Compact design allows working in small spaces.

Shipping weight, 20 pounds. No. 24-033, with Brush Arm Supports.....each \$72.50

**Commutator Turning Tool Heads**

An excellent tool for removing the bead or ridge of copper left on the inside of the commutator next to the riser. Net weight, 7 pounds.

No. 24-045, for Perfect and Ideal Model Precision Grinders.....each \$31.50  
No. 24-046, for Midget Model Precision Grinders.....each 27.50

**No. 25-029 Universal Power Mica Undercutters**

Cuts smoothly without vibrations. May be used in space only 2¾ inches wide.

Weight, including motor, 52 pounds. Complete with Standard 115 Volt A.C. 60 Cycle Motor.....each \$140.00

Complete, but without Motor; with Motor Shaft Connection.....each 120.00  
If desired, other voltages and cycles can be furnished at extra charge; also undercutters for d.c.

**No. 25-023 Shop Type Undercutters**

This undercutter is light enough for easy handling, and sturdy enough for continual heavy duty undercutting. Net weight of head only, 2¾ pounds.

No. 25-023, without Motor.....each \$120.00

**Direct Drive Undercutters**

Intended primarily for field use, but the rugged, sturdy design makes this undercutter suitable also for shop use.

Weight, with 8-foot cord, 5¾ pounds. No. 25-001, with 115V. Universal Motor.....each \$90.00  
No. 25-002, with 230V. (Also 250-Volt) Universal Motor.....each 98.00

**Commutator Saws and Milling Cutters**

Made of Special No. 1 High Speed Steel. Available in all types and sizes, not only for the Ideal Undercutter, but any type of undercutter. Available in outside diameters from ¼ to 1½ inches inclusive. Prices on application.

**Slotting Files**

Specially designed and constructed for commutator use. Weight per dozen, 1 pound.

No. 20-007, Large 8-Inch Type.....each \$1.06  
No. 20-009, 9½-Inch Single End Type (Specify Draw-Cut or Double-Cut).....each .89

**No. 20-006 Hand Type Commutator Mica Slotters and Scrapers**

Designed for use on small commutators, and for plants which do not have sufficient work for a power driven unit. No. 20-006.....each \$2.95

**Balancing Ways**

Indispensable for the static balancing of motor armatures, crank shafts, pulleys, fly wheels, etc.

No.....	19-006	19-007	19-008
Each.....	\$48.83	55.89	37.36
Capacity.....pounds	1000	1000	400
Approximate Shipping Weight.....pounds	13	48	108

Longer shafts can be furnished at slight extra charge.

**Growlers**

Used to quickly locate grounds and shorts.

**Type U-2.** Used as an external growler for armatures and as an internal growler for stators.

**Type S.** Contained in oblong cases; made in two sizes, with and without meters.

**Type F.** Made with a built-in feeler, and shaped to test armatures and stators.

Specifications and prices will be furnished on request.

**No. 41-001 Insulation Testers**

Indicates in a second whether or not there is a short, ground or broken wire. Suitable for testing insulation of low voltage equipment. Capacity, 500 to 2500 volts.

For 115 volts, 50-60 cycles. Weight, 15 pounds. No. 41-001..... \$55.89

**No. 16-003 Armature Winding Heads**

Winds small universal, shaded pole, two pole d.c. or repulsion induction motor armatures. Net weight of head, 2 pounds.

No. 16-003.....each \$60.00

**Coil Winder Heads**

**No. 16-002 Midget Model.** For making coils 4x1½ inches minimum up to 8½x6½ inches maximum.

Weight, 10 pounds. No. 16-002.....each \$61.77

**No. 16-001 Universal Model.** Winds coils up to 13x16½ inches. Weight, 35 pounds.

No. 16-001.....each \$75.89

**No. 15-028 Coil Winder Drives**

Gives an infinite number of driving speeds between 120 and 650 rpm. by moving control lever.

Weight, approximately 180 pounds. No. 15-028, Complete, 115V. 60 Cycles.....each \$464.71

**No. 16-004 Armature Winding Yokes**

Winds any type armature with a shaft 9 to 19 inches long. Weight, 28 pounds.

No. 16-004.....each \$85.29

**No. 16-006 Armature and Stator Holders**

Ideally suited for holding work while soldering commutator leads, inserting insulation, inserting wedges, banding armatures, rewinding, removing and inserting coils on stators or armatures, etc.

Approximate shipping weight, 40 pounds. No. 16-006.....each \$40.59

**No. 45-070 Brush Type Wire Strippers**

Cleans enamel wire rapidly. Cleanly strips cotton and enamel, silk and enamel, string asbestos and similar types of light insulation from round wire, flat or rectangular wire, or solid or stranded wire.

Net weight, approximately 50 pounds. No. 45-070 Complete, 115V., 60 Cycles.....each \$223.53

**No. 45-009 Rotary Type Wire Strippers**

This powerful, motor-driven wire stripper is needed wherever volume stripping is done. Strips wire up to ½-inch outside diameter. Net weight, 45 pounds.

No. 45-009 Complete.....each \$147.06  
No. L-2440, Extra Blades.....per set 3.95

Complete Specifications and Information on Request



## National Carbon Brush Assortments

### For Fractional Horsepower Motors



Brushes for vacuum cleaners, fans, vibrators, electric ironers, washing machines, sewing machines, food and drink mixers, heat regulators, pumps, electric tools, cash registers, and office appliances.

Container is designed for effective counter or store display.

All brushes and springs are of the finest quality and will take care of replacement

ments on fractional horsepower motors (a.c., d.c., and Universal) used on the popular makes of home, office and shop appliances and equipment.

Sizes range between  $\frac{5}{32}$  and  $\frac{5}{16}$ -inch square with 10 intermediate sizes of round and rectangular brushes including three types of brushes with shunts, springs and terminals. Springs are made of the best phosphor bronze wire.

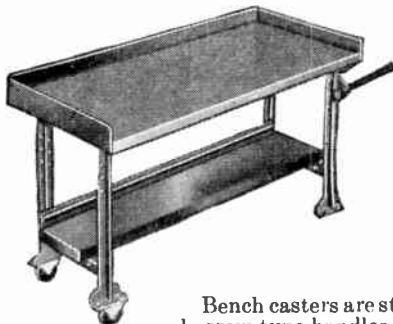
**No. 40 Assortment.** Contains 102 brushes of 17 types and sizes (3 sizes complete with shunts, springs, and terminals) and 55 springs in 3 sizes.

No. 40 Assortment Complete.....each **\$8.50**

**No. 55 Assortment.** Contains 198 brushes of 17 types and sizes (3 sizes complete with shunts, springs, and terminals) and 100 springs in 3 sizes.

No. 55 Assortment Complete.....each **\$14.50**

## No. 2560 Lyon Portable Work Benches



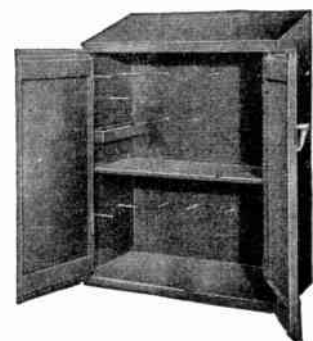
Used by maintenance men, millwrights, mechanics, and supervisors of mobile assembly and production lines. All the features of Lyon steel top work benches are contained in portable benches and all standard accessories may be used.

Bench casters are stationary type. Wheelbarrow type handles slide under bench top and out of the way when not in use. Green baked-on enamel finish. Length, 72 inches. Depth, 34 inches.

No. 2560, Weight, 218 Pounds.....each .....

## No. 3020 Lyon Tool Cabinets

Designed to hang on a wall or be used on a bench. Back and sides punched on 1-inch centers for  $2\frac{1}{2}$ -inch pegs.



Tamper proof hinges. Strong three point latching device.

Complete with shelf, socket tray and ten adjustable pegs.

Green baked enamel finish.

No..... **3020**  
 Each..... **\$14.75**  
 Width.....inches 24  
 Depth.....inches 12  
 Height.....inches 33  
 Weight.....pounds 47.8

## Lyon Shop Desks

### Standing Type



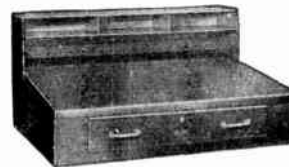
Welded construction provides a smooth, firm surface for working. Shelf is adjustable. Sloping top 43 inches high at front. Drawer, 24x28x3 $\frac{1}{2}$  inches, has roller bearing slides, brass handles, built-in lock. Two hooks on right side.

Green baked-on enamel finish.

No.....	<b>2250</b>	<b>*2254</b>
Each.....	<b>\$26.95</b>	<b>33.20</b>
Width.....in.	34 $\frac{1}{2}$	34 $\frac{1}{2}$
Depth.....in.	30	30
Ht.....in.	53	53
Wt.....lb.	130.9	128.3

\*Same as No. 2250 plus swivel casters. Front casters have foot controlled locking lever.

### No. 2252 Counter Type



Same top and drawer as No. 2250. When used on counter or bench, desk is at convenient height to work while standing or seated on a stool.

Green baked-on enamel finish.

No.....	<b>2252</b>
Each.....	<b>\$20.75</b>
Width.....inches	34 $\frac{1}{2}$
Depth.....inches	30
Height.....inches	17
Weight.....pounds	79.7

## Lyon Tool Stands



No. 3107

Used in machine shops, printing plants, assembly lines, stock rooms, repair shops, garages, toolrooms, service stations, maintenance departments, laboratories, restaurants and vocational schools.

In factories, used as work stands around production machines, mountings for small tools, parts containers for assembly lines, etc.

In restaurants, used as salad tables; in laboratories, as portable work centers; in printing plants, as ink stands; in garages, as tool and part carriers, etc.

Available in stationary and portable models.

Trays attach at each corner with four bolts, all are interchangeable and punched for attachment of drawers. Legs are formed from band steel, curled at bottom to hold glide feet or swivel type casters.

Drawers have padlock attachment, padlock not furnished and a sliding tool tray.

Green baked-on enamel finish.

For further information on  
 the complete line of  
**LYON SHOP EQUIPMENT**  
 consult your nearby Graybar office.

**No. 3160 Lyon Tool Toters**



Used in machine shops, power plants, plumbing shops, electrical shops, toolrooms, printing plants, welding shops, and maintenance departments.

Built-in drawers operate in a closed case that strengthens entire toter and assures continued drawer alignment. Padlock hasp on cross piece locks both drawers at one time, padlock not furnished. Top and bottom trays have 1½ inch flange. Steel swivel casters. Riveted construction. Width, 18 inches. Depth, 24 inches. Height, 34½

inches. Drawer size, 15x23x4½ inches. Green baked-on enamel finish. Weight, 78 pounds. No. 3160.....each **\$16.65**

**Style H Lyon Steel Stacking Boxes**



For heavy loads from 75 to 125 pounds and to withstand hard usage.

Made of 18-gage steel. Shallow V shaped runners make it ideal for gravity conveyor use. Tapered for efficient stacking. Stacking rail at each end strengthens entire box.

No.....	<b>3600</b>	<b>3601</b>	<b>3602</b>	<b>3603</b>
Each.....	<b>\$2.25</b>	<b>2.40</b>	<b>2.35</b>	<b>2.55</b>
Width.....inches	12	12	12	12
Length.....inches	18	18	21	21
Height.....inches	6	6	6	6
Finish.....	None	Green	None	Green
Weight.....pounds	12.5	12.5	13.8	13.8

**Style R Lyon Steel Stacking Boxes**



For handling and storing medium loads. Particularly rigid when stacked because inside supporting rail extends around all four sides.

Made of 16-gage steel.

Three piece construction. Reinforced corners. Drop handles.

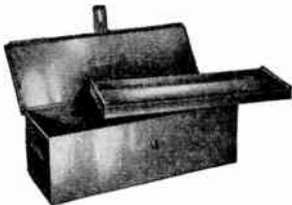
Width, 10 inches. Length, 20 inches. Height, 8 inches.

Weight, 16.4 pounds.

No. 3610, without Finish.....	each	<b>\$2.10</b>
No. 3611, Green Finish.....	each	<b>2.25</b>

**Lyon Tool Boxes and Trays**

**Tool Boxes**



Heavy duty tool box that protects tools and provides carrying case. Full-length, piano type hinge. Padlock attachment, padlock not furnished. Width, 7 inches.

Green baked-on enamel finish. Tray is furnished, when specified, at additional cost.

No.....	<b>2301</b>	<b>2303</b>
Each.....	<b>\$2.70</b>	<b>2.80</b>
Length.....inches	19	22
Height.....inches	6½	6
Weight.....pounds	12.1	13.3

**No. 2310 One-Piece Steel Tool Trays**



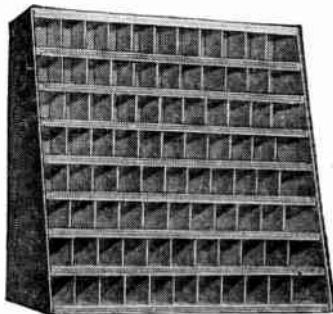
Ends overlap sides and are clamped tight under the ½-inch flange, in addition to being securely welded.

Full length handle, attached to each end with rivets, is shaped to fit the hand. Length, 17½ inches. Width, 8½ inches. Height, 4½ inches. Overall height, 8½ inches.

Green baked-on enamel finish.

No. 2310, Weight, 10 Pounds.....each **\$1.50**

**No. 4191 Lyon Sloping Front Tool Storage Units**



Provides 88 openings in 8 depths. Shelf dividers adjustable every inch with patented snap-ins. Labelholders on each shelf.

Width, 34¼ inches. Depth, 17½ inches. Height, 37½ inches.

Green enamel finish. Weight, 120.0 pounds.

No. 4191.....each **\$31.10**

**Style RB Lyon Steel Stacking Boxes**



A strong stacking box used also for transportation between operations.

Made of 16-gage steel.

May be stacked on floor and used for regular bin type storage. Hopper end permits easy removal of contents.

Front top rail rounded for use as handle. Opposite end has drop handle.

Width, 10 inches. Length, 20 inches. Height, 8 inches.

Weight, 15.4 pounds.

No. 3620, without Finish.....	each	<b>\$2.30</b>
No. 3621, Green Finish.....	each	<b>2.50</b>

**Style L Lyon Steel Nesting Pans**



For handling parts safely and economically. Pans can be nested. A stack of 50 is only 43 inches high.

Made from a single sheet of folded steel.

Four thicknesses where hem overlaps corner braces. Integral handles are double thickness. Width, 11 inches. Length, 22 inches. Height, 6 inches.

No.....	<b>3630</b>	<b>3631</b>	<b>3632</b>	<b>3633</b>
Each.....	<b>\$1.45</b>	<b>1.70</b>	<b>1.30</b>	<b>1.50</b>
Gage Steel.....	16	16	18	18
Finish.....	None	Green	None	Green
Weight.....pounds	12.5	12.5	9.6	9.6



## Lyon Steel Cabinets



No. 1000 Storage Cabinet

No. 1010 Combination Cabinet

Used in factories, printing plants, offices, hospitals, and service stations. Front corners are rounded. Type of construction eliminates bolt heads on front and sides. Cabinet has polished chrome handles and built-in locks. Three point locking device. Double doors swing open full 180 degree angle. Has four shelves adjustable every 2 inches without tools. Extra shelves may be added if required. Width, 36 inches. Depth, 21 inches. Height, 78 inches. Green baked-on enamel finish.

### Storage Cabinets

The double doors permit full access to all parts of cabinet. Shelf reinforcements available for heavy duty storage.

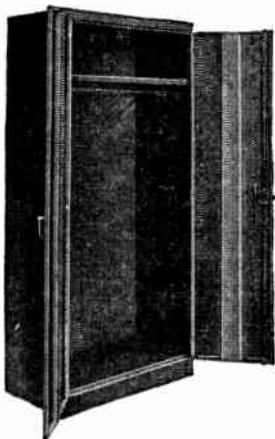
No. ....	*1000	†1001
Each .....	\$46.75	36.50
Weight.....pounds	200	190
No. 1050, Extra Shelf .....	each	\$2.15
No. 1070, Shelf Reinforcement .....	each	.98

### Combination Cabinets

Combines office supplies or package storage and wardrobe facilities in one cabinet. One full width shelf at top for hats. Balance of cabinet is divided for full length clothing storage and material storage.

No. ....	*1010	†1011
Each .....	\$48.95	40.00
Weight.....pounds	196	186
No. 1052, Extra Half Shelf .....	each	\$1.60

### Wardrobe Cabinets



Full width shelf at top for hats and packages. Coat rod below shelf holds 8 to 15 heavy coats on hangers.

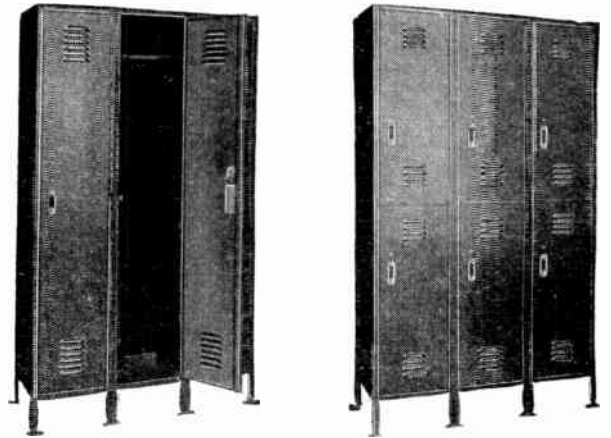
Interior completely finished, no sharp edges to mar appearance of cabinet or damage clothing.

No. ....	*1005	†1006
Each .....	\$43.70	34.20
Weight.....pounds	173	163
No. 1051, Extra Wardrobe Shelf with Coat Rod Attached .....	each	\$3.25

\*Shipped set-up.

†Shipped knocked down.

## Lyon Steel Lockers



Single Tier

Double Tier

Used in factories, offices, shops, printing plants, and hospitals. Has positive latch, full length pre-locking lock bar. Rigid frame, vertical members extend to floor to form legs. Vertical and horizontal members rabbetted and welded. Bulb edge adds strength and beauty. No bolt heads on locker fronts. Trouble-free hinges, projection welded to frame. Butt of hinge is recessed in door frame. Pin cannot be forced out. Door may be removed and replaced and still retain perfect alignment. Recessed handle, satin chrome finish. Number plate fits in handle and cannot be removed. No protruding parts to snag clothing. Used with padlock or built-in lock. Lockers 12 inches wide have one double prong and three single prong coat hooks. Lockers over 12 inches wide have one double and four single hooks. Number plate extra. Green baked-on enamel finish. Also available in brown finish.

### Single Tier

Full length clothing storage. Shelf 9 inches from top for hats, lunches, etc. Single tier doors have 3-point locking device (top, bottom and center).

Sizes shown are per locker opening, add 6 inches to height for legs.

Dimen. Width Depth Height Inches	No. of Rows	With Padlock Hasp		With Flat Key Lock	
		Set-Up	Knocked Down	Set-Up	Knocked Down
12x12x60	Sgl.	5000	5002	5001	5003
12x12x60	Dbl.	5000	5004	5001	5005
12x15x60	Sgl.	5010	5012	5011	5013
12x15x60	Dbl.	5010	5014	5011	5015
15x18x72	Sgl.	5060	5062	5061	5063
15x18x72	Dbl.	5060	5064	5061	5065
15x15x60	Sgl.	5070	5072	5071	5073
15x15x60	Dbl.	5070	5074	5071	5075
15x18x60	Sgl.	5080	5082	5081	5083
15x18x60	Dbl.	5080	5084	5081	5085

### Double Tier

Satisfactory for a great many uses, particularly for short period occupancy and where long coats are not worn. Double tier lockers have no shelves. Double tier doors have 2-point locking device (top and bottom).

Sizes shown are per locker opening, add 6 inches to height for legs.

Dimen. Width Depth Height Inches	No. of Rows	With Padlock Hasp		With Flat Key Lock	
		Set-Up	Knocked Down	Set-Up	Knocked Down
12x12x36	Sgl.	5200	5202	5201	5203
12x12x36	Dbl.	5200	5204	5201	5205
12x12x30	Sgl.	5240	5242	5241	5243
12x12x30	Dbl.	5240	5244	5241	5245
15x15x36	Sgl.	5250	5252	5251	5253
15x15x36	Dbl.	5250	5254	5251	5255

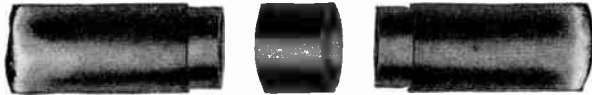
### No. 5840 Lyon Locker Racks

Open coat rack having 10 compartments with perforated doors above rack. Locking door secures coat by means of chain attachment. Built in lock, 2 keys. Width, 50 inches. Height, 76 inches. Depth, 18 inches. Green baked-on enamel finish, tan doors.

No. 5840 ..... each \$50.00



**Orangeburg Fibre Conduit**



Taper Sleeve Joint

Orangeburg Conduit has been used as a raceway for underground communications and power circuits since 1893.

Manufactured by the Fibre Conduit Company, Orangeburg, New York, where continuing research and development insures a high standard of both workmanship and product improvement.

**Permanence and Low Cost**

Orangeburg Conduit has proven its ability to give maximum, permanent, low maintenance service under conditions that expose ducts to attack from ground waters and chemical wastes—both acid and alkaline.

Installations running back over forty years are still providing clear, usable raceways.

Low in first cost, light in weight yet amply strong to resist breakage, it can be transported to the job in large truckloads.

The material is easy to cut or work. Angle couplings, bends, and other fittings make installation simple and economical. Long lengths and readily assembled Taper Sleeve Joints make for labor saving and low installed cost.

**Protection From Cable Sheath Abrasion**

Scoring or abrasion of the cable sheath weakens its resistance to corrosive elements and shortens its life. Because of the smooth bore and relatively soft nature of their materials, Orangeburg ducts do not score or abrade the lead-sheath cable.

**Protection From Pulling Tension**

Pulling tension on cable tends to set up strains in the sheath. The coefficient of friction in Orangeburg Conduit is lower than in other types of duct material. Published data by one large utility reveal the following coefficient of friction for a large actual installation recently made in which oil-filled cable was used:

Size of Cable	Size of Cut	Coefficient
300,000 C.M.	2 1/4-In. O.D.	3 1/2 Inches .25-30
650,000 C.M.	2 1/2-In. O.D.	4 Inches .25-30

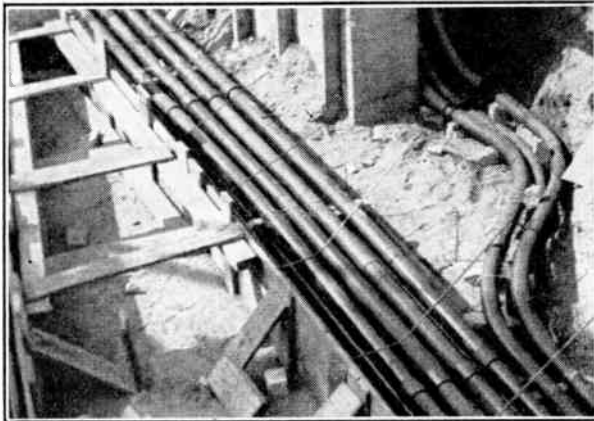
**General Properties**

Composed of 25 per cent fibre and 75 per cent coal tar pitch with wall sections homogeneous and impregnation uniform throughout.

**Specifications**

- Federal Specification: WC-581,
- A.T. & T. (Bell Laboratories): AT-7047,
- U.S. Navy: 9YE,
- I.M.S.A.: 104-1942,
- Civil Aeronautics Authority: CAA-606,
- Association of American Railroads: XVIII-A-21 1929.
- And many Public Utilities specifications.

**Orangeburg Standard Conduit (Type I)  
For Installation with Concrete Encasement**



For main distribution, high tension, and downtown locations.

Orangeburg Standard (Encased in Concrete), is the most economical where duct banks of four or more ducts are involved.

Interchangeable taperjoint couplings are furnished with each length of conduit without extra charge.

A mating 2-degree factory machined taper is provided on each length of conduit and assures a watertight joint.

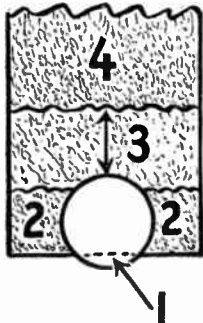
**Orangeburg NOCRETE Conduit (Type II)  
For Installation Without Concrete Encasement**

Conduit for underground without concrete encasement must have three prime characteristics: (1) mechanical strength; (2) ability to endure permanently; (3) offer lasting cable protection.

For house connections, laterals and extensions; airport, street and parkway lighting, fire alarm and signal systems; industrial and institutional grounds.

**How to Lay Orangeburg NOCRETE Conduit**

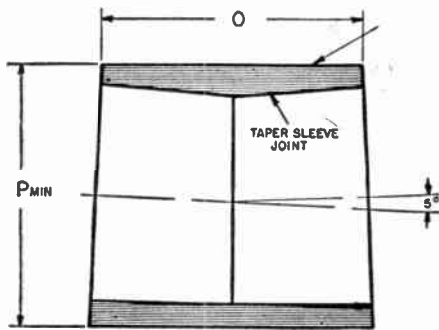
Trench and backfill. The trench bottom should be graded true and free from stones or soft spots. Backfill should be free of stones, and should be firmly tamped around the side of the conduit to develop maximum supporting strength. Tamping on top of the conduit is not recommended.



1. Best results are obtained if a cradle is made for the conduit in the undisturbed subgrade. In rocky soil, where this is not possible, a bedding of selected backfill should be put down and tamped before laying conduit.
2. Sidefill up to near the top of the conduit should be firmly tamped.
3. Selected backfill (not tamped) at least 6 inches over the top of the conduit is recommended.
4. Final backfill may now be placed. Tamping may now be employed to finish grade.



## Fittings for *Standard* and NCRETE Conduit 5° Angle Couplings



Available to permit the laying of offsets, long radius bends, etc., to get around obstructions and other services which may be encountered.

The Taper Joint is provided, and a mark on the coupling shows the direction in which the angle will point.

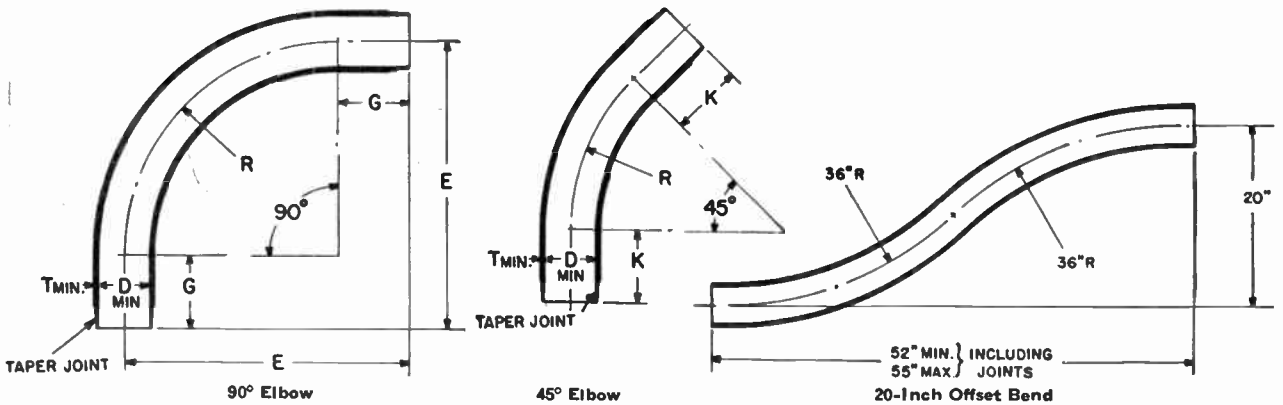
### 5° Angle Coupling *Standard* (Type I) Dimensions, Inches

Size	1	2	3	4	4.5	5	6
P MIN.	1.75	2.97	3.99	5.12	5.73	6.66	7.72
O MIN.	2.00	2.98	3.5	4.00	4.00	4.00	4.00

### 5° Angle Coupling NCRETE (Type II) Dimensions, Inches

Size	2	3	4
P MIN.	3.42	4.49	5.60
O MIN.	3.48	3.98	4.48

## Bends and Elbows



Orangeburg Fibre Conduit bends and elbows are made to the required radius and degree. Furnished with standard interchangeable Taper Sleeve Joint (coupling included). Standard bends and elbows are listed with dimensions. Split bends and bends of special radius and degree may be made to order.

### 90° Elbow *Standard* Conduit (Type I) Dimensions, Inches

Size, D MIN	1.0	2.0			3.0			4.0			4.5			5.0			6.0		
T MIN.	.20	.23			.28			.32			.32			.41			.46		
R	5.75	18	24	36	9.5	18	24	36	13	24	36	16	36	18	36	24	36	36	
E	13.75	26	32	38	17.5	26	32	38	21	32	38	24	38	26	36	32	36	36	
G	8	8	8	2	8	8	8	2	8	8	2	8	2	8	0	8	0	0	
K	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	

### 45° Elbow NCRETE Conduit (Type II) Dimensions, Inches

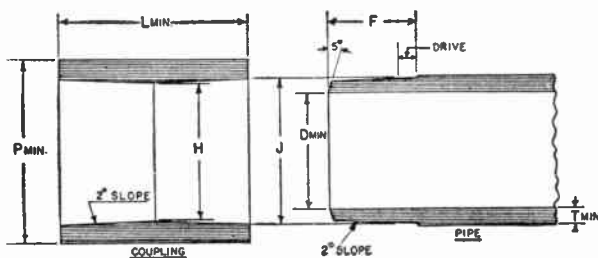
Size, D MIN	2.0	3.0			4.0				
T MIN.	.38	.43			.48				
R	9.5	18	24	36	13	24	36	16	36
E	17.5	26	32	38	21	32	38	24	38
G	8	8	8	2	8	8	2	8	2
K	8	8	8	8	8	8	8	8	8

### *Standard* Conduit (Type I) or NCRETE Conduit (Type II)

Nominal Inside Diameter, Inches

Type I Bend Sizes	1	2	3	4	4.5	5	6
Type II Bend Sizes	2	3	4				

## Taper Joint Couplings



### *Standard* Conduit (Type I) Dimensions, Inches

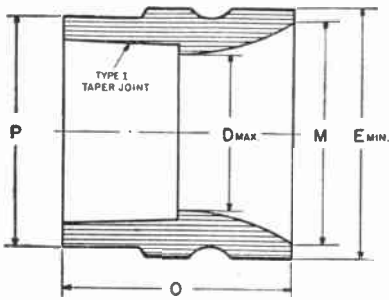
Size	1	2	3	4	4.5	5	6
D MIN.	.95	2.00	3.00	4.00	4.50	5.00	6.00
F	.94	1.43	1.69	1.94	1.94	1.94	1.94
H	1.272	2.365	3.326	4.353	4.932	5.528	6.562
J	1.342	2.470	3.448	4.493	5.072	5.668	6.702
L MIN.	2.00	3.00	3.50	4.00	4.00	4.00	4.00
P MIN.	1.75	2.97	3.99	5.12	5.73	6.66	7.72
T MIN.	.20	.23	.23	.24	.26	.36	.37
Drive	.28	.28	.28	.28	.28	.28	.28

### NCRETE Conduit (Type II) Dimensions, Inches

Size	2	3	4
D MIN.	2.00	3.00	4.00
F	1.68	1.93	2.18
H	2.678	3.705	4.764
J	2.800	3.845	4.922
L MIN.	3.50	4.00	4.50
P MIN.	3.42	4.49	5.60
T MIN.	.38	.43	.48
Drive	.25	.25	.25

Fittings for Orangeburg *Standard* and Nocrete Conduit

Bell Ends



For use at conduit terminals in manholes at sub stations, etc.

Standard Conduit (Type I)

Dimensions, Inches

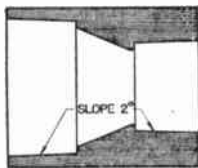
Size	1	2	3	4	4.5	5
P	1.75	3.1	4.3	5.5	6.4	6.64
D MAX	1.08	2.15	3.15	4.15	4.65	5.15
M	1.86	3.0	4.2	5.4	6.25	6.5
E MIN	2.07	3.37	4.56	5.73	6.66	6.83
O	2.0	3.0	3.5	4.0	4.5	4.5

Nocrete Conduit (Type II)

Dimensions, Inches

Size	2	3	4
P MIN	3.42	4.49	5.60
D MAX	2.15	3.15	4.15
M	3.0	4.12	5.2
O	3.5	4.0	4.5

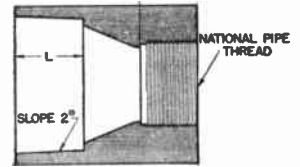
Reducers



Reducers from one size conduit to another are available in all combinations from 1 to 6 inches inclusive. The standard reducer is Taper Sleeve Joint at both ends. Sizes

and types of conduit, joints, etc. to be connected must be specified in detail.

Adapters



Adapters from metal pipe to fibre conduit are available in all combinations from 1 to 6 inches inclusive.

The standard adapter is Taper Sleeve Joint at the fibre end threaded for metal pipe size specified, at the other end. Can be supplied straight bore for threadless metal pipe. Sizes and types of connections desired must be specified.

Fibre Plugs



Fibre Bushings



Solid

Split

For temporarily closing ends of ducts during concreting, etc.

Available for all conduit sizes 2 to 5 inches inclusive.

Available for 2 to 6-inch size conduits inclusive.

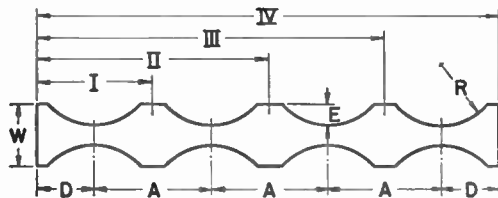
Fibre Caps

For sealing spare ducts or exposed conduit ends, etc. Taper Sleeve Joint is standard; socket joint or sleeve fit if specified.



Made for conduit sizes 1 to 6 inches inclusive.

Orangeburg Fibre Conduit Accessories  
Spacers (Bridges or Separators)



For built-up fibre conduit installations, grooved spacers are available for one, two, three or four conduit wide assemblies. These spacers are cast for conduit sizes from 2 to 4½ inches inclusive.

As the general practice is to allow a separation of 1 inch between conduits, this is the standard separation provided. However, for special applications, spacers can be supplied for 1½, 2 or 3-inch separation between ducts.

Orangeburg Conduit Spacers are handled as a service item. Although built for minimum weight with adequate strength, transportation cost may make it more economical for the large user at distant points to make his own spacers. Complete information as to mix employed will be furnished upon request.

Dimension, Inches, of Conduit Spacers

Conduit Inches	R	E	1-INCH SEPARATION			1½-INCH SEPARATION			2-INCH SEPARATION			3-INCH SEPARATION		
			A	D	W	A	D	W	A	D	W	A	D	W
2	1.31	.63	3.63	1.75	2.25	4.13	2.00	2.75	4.63	2.25	3.25	5.63	2.75	4.25
3	1.81	.88	4.63	2.25	2.75	5.14	2.50	3.25	5.63	2.75	3.75	6.63	3.25	4.75
4	2.38	1.13	5.75	2.81	3.25	6.25	3.06	3.75	6.75	3.31	4.25	7.75	3.81	5.25
4½	2.69	1.25	6.38	3.13	3.50	6.88	3.38	4.00	7.38	3.63	4.50	8.38	4.13	5.50
5	3.06	1.38	7.13	3.50	3.75	7.63	3.75	4.25	8.13	4.00	4.75	9.13	4.50	5.75

Overall Length, Inches

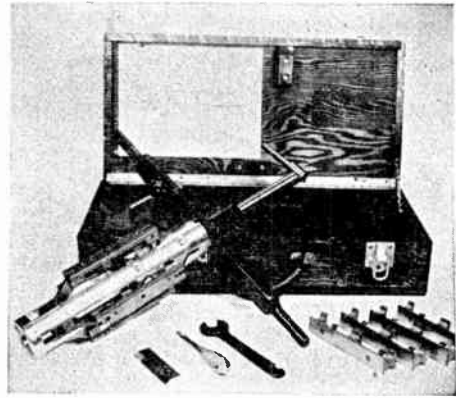
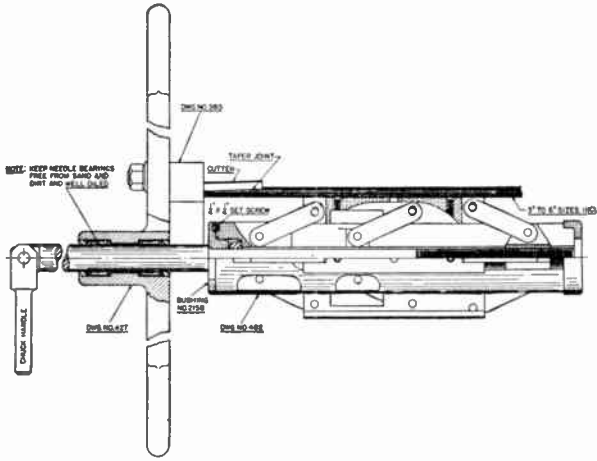
Conduit Inches	1-INCH SEPARATION				1½-INCH SEPARATION				2-INCH SEPARATION				3-INCH SEPARATION			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
2	3.50	7.13	10.75	14.38	4.00	8.13	12.25	16.38	4.50	9.13	13.75	18.38	5.50	11.13	16.75	22.38
3	4.50	9.13	13.75	18.38	5.00	10.13	15.25	20.38	5.50	11.13	16.75	22.38	6.50	13.13	19.75	26.38
4	5.63	11.38	17.13	22.88	6.13	12.38	18.63	24.88	6.63	13.38	20.13	26.88	7.63	15.38	23.13	30.88
4½	6.25	12.63	19.00	25.38	6.75	13.63	20.50	27.38	7.25	14.63	22.00	29.38	8.25	16.63	25.00	33.38
5	7.00	14.13	21.25	28.38	7.50	15.13	22.75	30.38	8.00	16.13	24.25	32.38	9.00	18.13	27.25	36.38

Dimensions I, II, III and IV indicate overall length of spacer for 1, 2, 3 or 4 conduits laterally spaced.



## Orangeburg Field Tooling Lathe

For 1 to 6-Inch **Standard** and **NOCRETE** Conduit



Orangeburg field tooling lathes are made of hardened steel alloy with needle bearings in the cutting handle.

With reasonable care, they maintain accuracy for many years.

No. 0902 is designed for 1-inch conduit only.

No. 0904 is designed for 2-inch conduit only.

No. 0905 is adjustable for 3 to 6-inch conduit only.

### Parts List

No.	Description	Quantity
380	Cutter Holder (Taper Joint).....	1
381	Short Taper Joint Cutter.....	1
379	Long Taper Joint Cutter.....	1
422	Combination Wrench.....	1
427	Cutting Handle.....	1
482	Chuck Assembly.....	1
2270-0905	Carrying Case.....	1
*420	Cutter Holder (Socket Joint).....	1
*428	Socket Joint Cutter, 3 to 6-Inch Standard	
*429	Socket Joint Cutter, 3 to 4-Inch NOCRETE	

\*Furnished only when specified.

### Shipping Weights and Data

**Economical Transportation.** Orangeburg Conduit is transported by rail or truck most economically because it combines light weight with ample strength to resist breakage. The largest truck bodies can be loaded to maximum cubic carrying capacity, reducing trips and hourly costs to an almost negligible cost per foot.

Orangeburg price schedules are based on total weight of material involved, including all bends, elbows and items classified as fittings **Standard** and **NOCRETE**; excluding items classified as accessories (spacers, etc.)

**Shorts.** The right is reserved to include 15 per cent of lengths shorter than standard. All shorts included are packed separately in any shipment to facilitate identification and easy count. Shorts are cut to even lengths six or twelve inches less than standard.

**Class A Orders:** 30,000 pounds (minimum car) or over.

**Class B Orders:** 10,000 to 29,999 pounds.\*

**Class C Orders:** 9,999 pounds or less.

**Crating.** There is an extra charge for crating Class A and B orders, if crating is desired and specified. Class C orders are usually packaged for less than carload handling.

Weights of bends and other fiber items are included in figuring minimum weights; consequently such items on an order will decrease footage in the conduit weight tables.

The weights listed below are used for pricing computations only (approximate shipping weights).

### Orangeburg Standard Conduit

Conduit Size.....inches	1	2	3	4	4½	5	6
Weight per 100 Feet.....pounds	50	115	140	200	240	300	425
Min. No. of Feet to Make 30,000 Lb.....ft.	60,000	26,100	21,430	15,000	12,500	10,000	7,059
Min. No. of Feet to Make 10,000 Lb.....ft.	20,000	8,700	7,144	5,000	4,167	3,334	2,353

### Orangeburg NOCRETE Conduit

Conduit Size.....inches	2	3	4
Weight per 100 Feet.....pounds	180	270	360
Min. No. of Feet to Make 30,000 Pounds.....feet	16,668	11,112	8,333
Min. No. of Feet to Make 10,000 Pounds.....feet	5,556	3,704	2,778

**Natco Standard Single Duct Conduit**



Adapted for high tension power lines, single cable terminals or for low tension laterals, as in telephone or signal lines.

In building up duct banks, this conduit provides two heavy insulating walls between adjacent cables, and permits breaking or staggering of all joints throughout the duct bank.

Permits the splaying or separation of individual duct lines in approaches to manholes.

Conduit is scarified lengthwise on the four outer sides, to provide anchorage for bedding mortar.

The inner edges of the duct entrances are properly bevelled and smoothed to eliminate projections and to make safe the pulling of cables.

Certain square single duct shapes are provided with through dowel holes in the corners, permitting the use of steel dowel pins for assembling, centering and aligning such duct lines.

Nominal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pc.	Actual Size of Hole In.	Approx. Out-side Dimen. In.	Short Lgths. In.	Min. Car-load Duct Ft.
3 1/4 Rd.	1	18	1 1/2	3 3/8	4 1/2 x 4 1/2	3, 4, 6, 9, 12	8700
3 1/2 Rd.	1	18	1 1/2	3 5/8	4 7/8 x 4 7/8	3, 4, 6, 9, 12	6900
4 1/4 Rd.	1	18	1 1/2	4 3/8	5 5/8 x 5 5/8	3, 4, 6, 9, 12	5700
5 1/4 Rd.	1	24	2	5 3/8	6 7/8 x 6 7/8	3, 4, 6, 9, 12	4000
3 1/4 Sq.	1	24	2	3 3/8	4 3/4 x 4 3/4	3, 4, 6, 9, 12	6100
3 1/2 Sq.	1	18	1 1/2	3 5/8	5 x 5	3, 4, 6, 9, 12	5700
4 1/4 Sq.	1	18	1 1/2	4 3/8	5 7/8 x 5 7/8	3, 4, 6, 9, 12	4800

**Natco Single Duct Bends**



**Standard Shapes**

Bore.....	3 1/4, 3 1/2 or 4 1/4	Round or Square
Angle.....	45°	90°
Radius.....inches	12, 18, 24 or 36	12, 18, 24

**Arc or Length**

Bore.....inches	3 1/4, 3 1/2 or 4 1/4 Rd.	3 1/4, 3 1/2 or 4 1/4 Sq.
Length.....inches	18	18
Radius.....inches	36, 60, 72 or 96	36, 60, 72 or 96

Bends also supplied that are scored for splitting apart.

**Natco Socket Joint Single Duct Conduit**

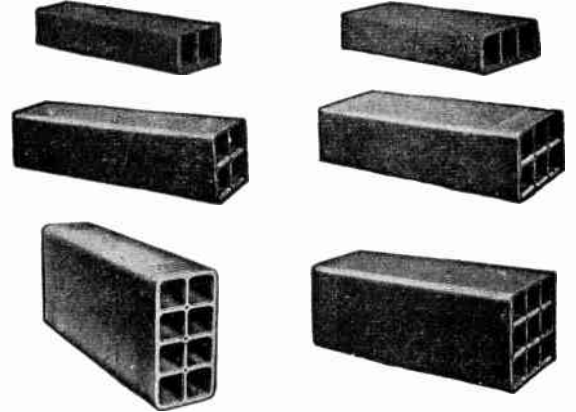


Natco Single Duct Conduit is also manufactured in a new socket joint type, which is supplied in 3 1/2, 4 and 4 1/2-inch round bore and in either 18 or 24-inch standard lengths. This new type of duct is self-centering, provides positive alignment, lays up fast and can be installed by ordinary labor. If desired, the joints may be readily troweled or sealed with cement mortar. This new type of conduit is especially adapted for single duct lateral lines, also equally suitable for duct bank construction where this type of joint is preferred.

Nominal Bore.....inches	3 1/2 Rd.	4 Rd.	4 1/2 Rd.
Length.....inches	18 and 24	24	24
Actual Size of Duct Holes.....inches	3 5/8	4 1/8	4 5/8

Also furnished in bends and mitred sections.

**Natco Standard Multiple Duct Conduit**



Particularly adapted for telephone, telegraph, railway signal, fire alarm and low tension light and power service. The large units are economical and quick to install, due to their longer lengths and multiplicity of duct holes.

At the extreme ends of each piece of conduit, a smooth surface is left to permit wrapping each joint with tape or fabric to exclude joint mortar from the ducts.

Supplied in either 3 1/4, 3 1/2 or 4 1/4-inch square bore shapes and in 2, 3, 4, 6, 8 and 9-way multiple shapes.

The 3 1/4 inch is the standard bore, while 4 1/4 inch is the over-size bore, for most telephone service and for certain low tension power and lighting systems, while the 3 1/2 inch bore is frequently specified for certain municipal installation.

Nominal Bore In.	No. Duct Holes	Std. Lgth. In.	Duct Ft. per Pc.	Actual Size of Duct Hole In.	Approx. Out-side Dimen. In.	Made in Short Lgths. In.	Min. Car-load Duct Ft.
3 1/4 Sq.	2	24	4	3 3/8	4 3/4 x 8 3/4	6, 8, 12	8200
3 1/4 Sq.	3	24	6	3 3/8	4 3/4 x 12 3/4	6, 8, 12	8100
3 1/4 Sq.	4	36	12	3 3/8	8 3/4 x 8 3/4	6, 9, 12	9600
3 1/4 Sq.	6	36	18	3 3/8	8 3/4 x 12 3/4	6, 9, 12	10000
3 1/4 Sq.	8	36	24	3 3/8	8 3/4 x 16 3/4	6, 9, 12	10000
3 1/4 Sq.	9	36	27	3 3/8	12 3/4 x 12 3/4	6, 9, 12	10000
3 1/2 Sq.	2	24	4	3 5/8	5 1/8 x 9 3/8	6, 8, 12	7000
3 1/2 Sq.	3	24	6	3 5/8	5 1/8 x 13 5/8	6, 8, 12	7200
3 1/2 Sq.	4	36	12	3 5/8	9 3/8 x 9 3/8	6, 9, 12	8200
3 1/2 Sq.	6	36	18	3 5/8	9 3/8 x 13 5/8	6, 9, 12	8600
4 1/4 Sq.	2	24	4	4 3/8	5 1/2 x 11	6, 8, 12	5600
4 1/4 Sq.	3	24	6	4 3/8	5 1/2 x 16 1/2	6, 8, 12	6000
4 1/4 Sq.	4	36	12	4 3/8	11 x 11	6, 9, 12	6600
4 1/4 Sq.	6	36	18	4 3/8	11 x 16 1/2	6, 9, 12	6800
4 1/4 Sq.	9	24	18	4 3/8	16 1/2 x 16 1/2	6, 8, 12	7300

**Natco Split Conduit**



Natco Conduit in both single and multiple duct shapes and in all standard bores is supplied, scored or knifed, for splitting apart on the job, for repairing or replacing duct lines, without the necessity of removing cables.

These split sections may be also used to enclose cable joints or splices in place of building manholes.

Bore Inches	No. of Duct Holes	Standard Length Inches	Short Lengths Inches
3 1/4, 3 1/2 or 4 1/4 Rd.	Sgl. Duct	18	6, 9, 12
3 1/4, 3 1/2 or 4 1/4 Sq.	Sgl. Duct	18	6, 9, 12
3 1/4 Sq.	2 or 3-Way	18	6, 9, 12
3 1/4 Sq.	4 or 6-Way	18 and 36	6, 9, 12
3 1/4 Sq.	8 or 9-Way	18	6, 9, 12
3 1/2 Sq.	2 or 3-Way	24	6, 9, 12
3 1/2 Sq.	4 or 6-Way	18 and 36	6, 9, 12
4 1/4 Sq.	2 or 3-Way	18	6
4 1/4 Sq.	4 or 6-Way	18	6
4 1/4 Sq.	9-Way	18	6

## Natco Mitred Conduit

For Curve Construction



Natco Conduit, both single and multiple duct, in all standard bores, is supplied in mitred shapes, for building either simple or intricate curves in lines of clay conduit, for transposing narrow duct banks into wide ones or vice versa, or for splaying duct lines to enter manholes or service points.

Natco Mitred Conduit is made in one standard cut—3 degree and 10-foot radius. The radius of curves built of these sections, is varied simply by interposing straight short pieces between the mitred sections, and the arc of such curves is governed simply by the total number of pieces used.

True and easy curves from 10 to 30 foot radius, and ranging from 3 to 90 degrees, can thus be built.

In the 2, 3 and 6-way multiple conduit, the mitred sections are supplied in either a flat or edge position.

Mitred conduit also supplied scored for splitting apart.

Approximate length, 6x6 $\frac{5}{8}$  inches. Number of pieces in 90° curve, 30.

Bore Inches	No. of Duct Holes	Position
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$	Round	Single Duct
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$	Square	Single Duct
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$	Square	2, 3, or 6-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ , or 4 $\frac{1}{4}$	Square	4-Way
3 $\frac{1}{4}$	Square	8-Way
3 $\frac{1}{4}$ or 4 $\frac{1}{4}$	Square	9-Way

## Natco Branch Conduit

For Dividing Multiple Duct Main Lines



Natco Multiple Duct Conduit is supplied in branch shapes in all standard bores.

Natco Branch Conduit is a new shape, one end of which is the same shape and size as standard conduit, while at the opposite end, certain ducts are more widely separated by means of double webs, so as to permit alignment with abutting branch lines.

Branch conduit permits the division of multiple duct main lines into two or more branch lines, each having a smaller number of ducts than the main line. Such a division is highly advantageous in splaying main duct lines into central office buildings, manholes or cable vaults, or for turning laterals or service connections. It frequently saves the necessity of manholes.

Also supplied scored for splitting apart.

Length, 24 inches.

Bore Inches	No. of Duct Holes	Type	For Branching Into
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	2-Way	1-1	2 Single Duct
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	3-Way	1-2	1 Single and 1 Two-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	3-Way	1-1-1	3 Single Duct
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	4-Way	2-2	2 Two-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	2-4	1 Two-Way and 1 Four-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	2-2-2	3 Two-Way
3 $\frac{1}{4}$ , 3 $\frac{1}{2}$ or 4 $\frac{1}{4}$	6-Way	3-3	2 Three-Way
3 $\frac{1}{4}$ Sq.	8-Way	4-4	2 Four-Way
3 $\frac{1}{4}$ Sq.	8-Way	2-6	1 Two-Way and 1 Six-Way
3 $\frac{1}{4}$ , or 4 $\frac{1}{4}$	9-Way	3-6	1 Three-Way and 1 Six-Way

## Natco Transposition Conduit

For Transposing or Twisting 2, 3 and 6-Way Conduit Lines



Natco Multiple Duct Conduit is also supplied in transposition shapes in 2, 3, 6 and 8-way multiples, with right or left-hand twist. The degree or angle of twist is 22 $\frac{1}{2}$ ° for 3 $\frac{1}{4}$ -inch bore shapes, 18° for 3 $\frac{1}{2}$ -inch bore shapes and 15° for 4 $\frac{1}{4}$ -inch bore shapes, and the standard length is 24 inches.

The number of pieces required to effect a quarter turn of 90° from a flat to an edge position, or vice versa, is four pieces in the 3 $\frac{1}{4}$ -inch bore, five pieces in 3 $\frac{1}{2}$ -inch bore or six pieces in the 4 $\frac{1}{4}$ -inch bore sizes.

These transposition shapes are of considerable advantage in changing the position of height of conduit lines, in order to avoid certain street obstructions, or to cross viaducts or bridges, or to change the position of cables on their approach to manholes or cable vaults, all of which frequently eliminates the need of manholes.

Direction of twist, right or left hand.

Bore.....inches	3 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{4}$
Twist.....	22 $\frac{1}{2}$ °	18°	15°
No. of Pieces in $\frac{1}{4}$ Turn.....	4	5	6

## Natco Pipe Connectors



Single Duct Connector



2-Way Connector



3-Way Connector



Rear View of Connector Ready to Receive Conduit

For the purpose of connecting clay conduit lines to iron pipe lines as in pole risers or to enter buildings, Natco Pipe Connectors are available in the sizes shown below.

These connectors are made of cast iron, one end is shaped to receive the end of the clay conduit line, while the opposite end of the connector is reamed to receive the iron pipe lines.

### Single Duct Connector

For 3 $\frac{1}{4}$ -inch bore conduit and 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit and 4-inch pipe.

### 2-Way Connector

For 3 $\frac{1}{4}$ -inch bore conduit and 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit and 4-inch pipe.

### 3-Way Connector

For 3 $\frac{1}{4}$ -inch bore conduit and 3-inch pipe or 4 $\frac{1}{4}$ -inch bore conduit and 4-inch pipe.



**No. 106 Natco Conduit**



Illustrating the conversion of a 4-way multiple duct line into two 2-way multiple duct lines in an edge position, one of which is flexed or curved to one side in the direction of a pole and terminated in two riser iron pipe lines, ascending the pole, while the other 2-way line is transposed or twisted 90° from an edge to a flat position in a distance of 8 feet and then continued straight on in the form of standard 2-way multiple duct conduit—in a flat position.

**Specifications**

**B**—One-piece 4-way type 2-2 branch conduit, 2 feet long (for dividing the 4-way line into two 2-way lines).

**E**—Six pieces 2-way mitred conduit—edge position—3° 10-inch radius—6¼ inches long, (for flexing or curving one of the 2-way lines to one side in the direction of the pole. The angle of flexure shown is 18° but any angle of flexure divisible by 3, may be attained by varying the number of mitred pieces).

**H**—One-piece 2-way standard conduit, 2 feet long (laid in edge position—to extend the flexed 2-way line on towards pole).

**R**—One cast iron 2-way connector for 3-inch wrought iron pipe.

**P**—Four pieces 2-way left-hand transposition conduit, 22½°, 2 feet long (for transposing the other 2-way line 90° from an edge to a flat position).

**Dowel Pins**



Pressed steel pins, 5/8x3 inches, with an integral central flange or collar, are generally used for joining or aligning individual sections of multiple duct, also certain sizes of square bore single duct conduit together.

Two pins are used at each joint or for each piece of conduit.

**Joint Tape**



An especially prepared tape is frequently used for wrapping the joints of multiple duct conduit prior to the application of the joint mortar, also occasionally used for wrapping joints of single duct conduit in trench, subway or masonry structures, prior to the pouring of the concrete encasement.

This tape has an adhesive waterproof coating on one side, and is supplied in 4 and 6-inch widths, and put up in rolls of 25 linear yards.

Tape adheres closely and firmly to the glazed surface of the conduit and aids in sealing the joints.

In ordering, specify total number of linear yards required.

**Minerallac Insulating Compound**

For Use in Cable Joints, Potheads and Terminal Bells



**High Voltage Compound**

**No. 1.** A compound having the consistency of molasses. Not affected by moisture. Especially effective in drying out tape and cloth, and between layers of such materials when wound on high-voltage electrical apparatus.

**No. 2A.** Cable joint or pothead compound. Melting point, 82°C. One of the most important characteristics of this compound is its ability to adhere to metal or porcelain. Suitable for use in warm climates.

**No. 64.** A compound suitable for use in mild climates where there is no great variation in temperature. A hard compound with a melting point of approximately 93°C.

**No. 78.** Cable joint or pothead compound. Dense and adhesive with little shrinkage. Recommended as an all-purpose insulating material. Low moisture absorption; pliable. Recommended for voltages 600 and up. Melting point, 90°C. Dielectric strength 940 volts per mil at 30°C.

**No. 80.** Pothead compound. A hard compound for use on 600 volts and over. Melting point, 130°C. Tests 990 volts per mil at 30°C.

**No. 104.** A semi-solid compound for use in cable joints on high voltage lines over 600. Melting point, 50°C. Dielectric strength averages 800 volts per mil at 30°C.

**No. 104A.** A semi-solid compound with the same general characteristics as No. 104, except that it has a lower melting point (35°C). Average viscosity, 800 seconds at 100°C. For use on high voltage potheads and cable joints where a low melting point compound is required.

Size Container	gallons	1/2	1	2	5	*400
No. 1	per gallon	\$2.80	\$2.30	\$2.25	\$2.10	\$1.80
No. 2-A	per gallon	3.30	2.80	2.75	2.60	2.30
No. 33	per gallon	3.80	3.30	3.25	3.10	2.80
No. 64	per gallon	2.60	2.10	2.05	1.90	1.60
No. 78	per gallon	2.50	2.00	1.70	1.55	.80
No. 80	per gallon	2.50	2.00	1.70	1.55	.80
No. 104	per gallon	2.50	2.00	1.70	1.55	.80
No. 104A	per gallon	2.50	2.00	1.70	1.55	.80

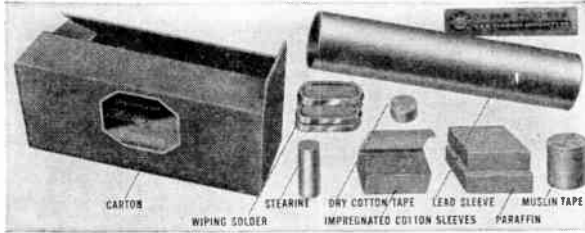
\*Closed steel drum weighing approximately 400 pounds.

**High Voltage Compound—Oil Insoluble**

**No. 33.** For use in cable joints, potheads and terminals, and other electrical apparatus where a close seal against oil filtration is specified. For protection of transformer bushings on oil-filled transformers.

Size Container	gallons	1	2	5
Per Gallon		\$3.30	3.25	3.10

## G & W Telephone Cable Splicing Kits



For 2-way straight joints for all sizes and numbers of conductors, paper-wrapped, wood pulp and silk insulated, lead covered, plain and armored cables.

Kit contains: paraffin, for boiling out the core; Stearine, flux for wiping joints; dry cotton tape, for protecting the individual conductors at the ends of the lead sheaths; muslin tape, for wrapping the spliced conductors; paper pasters, for limiting the wipes; lead sleeve, 1/8-inch thick, for housing the joint; and wiping solder, for wiping lead sleeve to cable sheaths.

No. 22 A.W.G. Conductors					No. 19 A.W.G. Conductors					
No. of Pairs of Conductors	No.	Per Kit	LEAD SLEEVE I.D. In.	Approx. SHIP. Lgth. In.	Wt. Lb.	No.	Per Kit	LEAD SLEEVE I.D. In.	Approx. SHIP. Lgth. In.	Wt. Lb.
6	622T	\$3.30	3/4	15	9	619T	\$3.30	3/4	15	9
11	1122T	3.30	3/4	15	9	1119T	3.60	3/4	15	9
16	1622T	3.30	3/4	15	9	1619T	3.60	3/4	15	9
26	2622T	3.60	1	15	9 1/2	2619T	3.90	1	15	9 1/2
51	5122T	4.20	1 1/4	15	10	5119T	5.10	1 1/2	15	11
76	7622T	4.50	1 1/2	15	11	7619T	6.30	1 3/4	17	12 1/2
101	10122T	4.80	1 1/2	15	11 1/2	10119T	7.20	2	17	13 1/2
152	15222T	5.10	2	17	14 1/2	15219T	9.00	2 1/4	20	18
202	20222T	7.50	2 1/4	17	15 1/2	20219T	11.40	2 3/4	20	20 1/2
303	30322T	10.80	2 3/4	20	20 1/2	30319T	16.50	3 1/2	20	25 1/2
404	40422T	12.30	3	20	22	40419T	20.10	4	20	28 1/2
455	45522T	12.90	3	20	22	45519T	21.00	4	20	29
606	60622T	15.60	3 1/2	20	25					
909	90922T	20.10	4	20	28 1/2					

## Ozite B Filling Compounds



Ozite B is a black asphaltic compound recommended for filling joints, terminals and junction boxes operated at normal temperatures.

This compound is manufactured under an improved process which results in a product with a low carbon content. Formulated by expert cable engineers with many years of experience, this compound combines all of the desirable characteristics that a jointing or filling compound should have.

Prices and complete information upon application.

## No. 2769 McGill Crescent Chatterton Compound

Domestic Brand



A para rubber compound for insulating 75% pure rubber. Gives complete assurance against danger of open contacts and terminals; can also be used for waterproofing. Used on all high grade electrical work. Formed in 1/4-pound sticks, 1 inch in diameter and 8 inches long.

Put up 10 sticks in a package; weight, 2 1/2 pounds.  
No. 2769..... per pound \$2.00

## No. 150 Minerallac Cable Pulling Compound

Minerallac Cable Pulling Compound is applied to the cable at the entrance of the cable feeder with a stiff brush. The properties of this compound cause it to cling to and lubricate the full length of the cable and conduit. The compound will follow through curves and bends in the conduit, eliminating damage to the cable sheath. No. 150 Cable Pulling Compound has the following features:

Chemically inert—no deterioration to either cable or conduit, including fiber conduit.

Economical—a comparatively small quantity is sufficient to pull a cable into the conduit: 5 to 7 pounds to pull a 2.83-inch diameter cable into approximately 400 feet of 3 1/2-inch tile conduit.

Not affected by temperature—cables may be pulled at temperatures as low as 10° above zero (F.).

Size Can..... pounds 12 25 60 \*600  
No. 150..... per pound \$ .14 .13 .12 .10

\*Steel drum weighing approximately 600 pounds.

## No. 100 Minerallac Pull-In Compound

Used to lubricate rubber covered wire and cable that is to be pulled through conduit.

Reduces pulling tension and injury to wires and cables.

Furnished in 2-gallon cans.

No. 100..... per can \$3.25

## O.Z. Insulating Compound



For 750 to 2500 volt terminators

Approximate shipping weight, 10 pounds per gallon.

Prices on compound in steel drums upon request.

Quantity Gallons	1/4-Gallon Can per Gallon	1/2-Gallon Can per Gallon	1-Gallon Pail per Gallon	2-Gallon Pail per Gallon	5-Gallon Pail per Gallon
1-9	\$3.75	\$2.50	\$2.05	\$2.00	\$1.85
10-49	3.22	2.15	1.75	1.70	1.55
50-149	2.62	1.75	1.25	1.20	1.05
150-249	2.47	1.65	1.20	1.15	1.00
250 and Over	2.10	1.40	1.00	.95	.80

## Cope Safety Compound Kettles

Capacity, 3 Gallons



The double flue extending through the kettle bottom and up and out to the sides, conducts the heat to every part of the compound. This insures a uniform melting, thereby preventing all danger of explosion.

The short lip spout eliminates clogging and allows free pouring. The wide kettle opening provides ease in filling and also in dipping tubes and socks.

Made of heavy steel, welded throughout. Has an extra heavy bottom which is inset 1 inch from the base. Tight fitting lid prevents loss of compound. Diameter, 10 inches; height, 12 inches.

Each..... \$16.90

## Ruberoid Rapid Asphalt Paint

(Formerly P & B Rapid Asphalt Paint)

Dries quickly to a hard, glossy coating, exceedingly tough and durable and with high insulating properties. Adapted for cables, switchboards, battery boxes, shelving, conduit joints and all insulating requirements.

Made in medium brushing consistency.  
Size Package.gal. 1/8 1/4 1 5 55  
Per Gallon..... \$2.00 1.70 1.40 1.25 1.10



**Reliable Steel Pulling Cable Grips**  
Solid Wire  
Double Weave



No.	Each	CABLE DIAM., IN.		Length Inches	Tensile Strength Pounds	Ship. Wt. Lb.
		Min.	Max.			
801	\$3.25	1/2	5/8	18	5,300	1
802	3.50	3/4	7/8	22	6,300	1
803	3.75	1	1 1/8	22	6,300	1 1/2
804	4.00	1 1/2	1 7/8	22	8,500	1 1/2
805	4.25	2	2 1/8	22	15,000	2
806	4.50	2 1/2	2 7/8	30	18,300	4
807	4.75	3	3 3/8	30	23,000	3
808	5.00	3 1/2	3 7/8	30	23,000	4
811	3.50	1/2	5/8	24	5,300	1
812	4.50	3/4	7/8	30	6,300	1 1/2
813	4.75	1	1 1/8	30	6,300	1 1/2
814	5.00	1 1/2	1 7/8	30	8,500	1 1/2
815	5.25	2	2 3/8	30	15,000	2
816	5.50	2 1/2	2 7/8	45	18,300	3
817	5.75	3	3 3/8	45	23,000	5
818	6.00	3 1/2	3 7/8	45	23,000	5 1/2

**Plain Flexible**



No.	Each	CABLE DIAM., IN.		Length Inches	Tensile Strength Pounds	Ship. Wt. Lb.
		Min.	Max.			
821	\$2.00	1/2	5/8	18	2,800	1
822	\$2.25	3/4	7/8	24	3,350	1
823	2.50	1	1 1/8	24	6,300	2
824	2.75	1 1/2	1 7/8	24	8,400	1 1/2
825	3.00	2	2 1/8	24	12,300	2 1/2
826	3.25	2 1/2	2 7/8	24	15,400	2 1/2
827	3.50	3	3 3/8	24	15,400	3
828	3.75	3 1/2	3 7/8	24	15,400	3
933	\$4.00	1	1 3/8	36	10,500	2
934	4.25	1 1/2	1 7/8	36	12,500	3
935	4.50	2	2 3/8	36	18,500	4
936	4.75	2 1/2	2 7/8	36	24,500	4 1/2
937	5.00	3	3 3/8	36	27,700	7
938	5.25	3 1/2	3 7/8	36	27,700	6

**Reinforced Flexible**



No.	Each	CABLE DIAM., IN.		Length Inches	Tensile Strength Pounds	Ship. Wt. Lb.
		Min.	Max.			
1023	\$4.60	1	1 3/8	24	10,500	2 1/2
1024	5.10	1 1/2	1 7/8	24	12,600	3
1025	5.60	2	2 3/8	24	18,500	3 1/2
1026	6.10	2 1/2	2 7/8	24	24,500	5
1027	6.60	3	3 3/8	24	33,500	5 1/2
1028	7.10	3 1/2	3 7/8	24	33,500	6
1033	\$6.10	1	1 3/8	36	10,500	2 1/2
1034	6.60	1 1/2	1 7/8	36	12,600	3
1035	7.10	2	2 3/8	36	18,500	4 1/2
1036	7.60	2 1/2	2 7/8	36	24,500	5 1/2
1037	8.10	3	3 3/8	36	33,500	6
1038	8.60	3 1/2	3 7/8	36	33,500	7
1043	\$7.60	1	1 3/8	48	10,500	3 1/2
1044	8.10	1 1/2	1 7/8	48	12,500	4
1045	8.60	2	2 3/8	48	18,500	5 1/2
1046	9.10	2 1/2	2 7/8	48	24,500	6 1/2
1047	9.60	3	3 3/8	48	33,500	7
1048	10.10	3 1/2	3 7/8	48	33,500	8

**Multiple Wire**



No.	Each	CABLE DIAM., IN.		Length Inches	Tensile Strength Pounds	Ship. Wt. Lb.
		Min.	Max.			
505	\$1.75	1 1/2	1 1/2	8 1/2	500	1
407	1.75	1 1/2	5/8	8 3/4	900	1
509	1.75	5/8	3/4	8 7/8	1,400	1
712	1.75	1 1/16	13/16	9 1/4	1,600	1
1220	1.75	13/16	1	9 3/8	2,100	1
2030	1.75	1	1 1/8	9 3/4	2,100	1

**Reliable Steel Cable Grips**

**Double Eye Luffing**



No.	Each	Min.	Max.	Length Inches	Tensile Strength Pounds	Ship. Wt., Lb.
<b>18-Inch—Single Weave</b>						
842	\$2.75	3/4	7/8	18	3,000	1
843	3.00	1	1 1/8	18	6,300	2
<b>24-Inch—Double Weave</b>						
954	\$5.25	1 1/2	1 7/8	24	12,600	2 1/2
955	5.75	2	2 3/8	24	16,800	3
956	6.25	2 1/2	2 7/8	24	24,600	5
957	6.75	3	3 3/8	24	24,600	5
958	7.25	3 1/2	3 7/8	24	24,600	5

**Single Eye Luffing**



No.	Each	Min.	Max.	Length Inches	Tensile Strength Pounds	Ship. Wt., Lb.
<b>18-Inch—Single Weave</b>						
1842	\$2.75	3/4	7/8	18	3,300	1
1843	3.00	1	1 3/8	18	6,300	2
<b>24-Inch—Double Weave</b>						
1954	\$5.25	1 1/2	1 7/8	24	12,600	3
1955	5.75	2	2 3/8	24	16,800	3
1956	6.25	2 1/2	2 7/8	24	24,600	3 1/2
1957	6.75	3	3 3/8	24	24,600	4
1958	7.25	3 1/2	3 7/8	24	24,600	4

**Double Eye Split**



No.	Each	Min.	Max.	Length Inches	Tensile Strength Pounds	Ship. Wt., Lb.
<b>18-Inch—Single Weave</b>						
*862	\$3.25	3/4	7/8	18	3,300	1
863	3.50	1	1 3/8	18	6,300	1 1/2
<b>24-Inch—Double Weave</b>						
974	\$5.60	1 1/2	1 7/8	24	12,600	3
975	6.20	2	2 3/8	24	16,800	4
976	6.80	2 1/2	2 7/8	24	24,600	4 1/2
977	7.40	3	3 3/8	24	24,600	5
978	8.00	3 1/2	3 7/8	24	24,600	5 1/2

\*No hooks, rawhide lacing furnished.

**Single Eye Split**



No.	Each	Min.	Max.	Length Inches	Tensile Strength Pounds	Ship. Wt., Lb.
<b>18-Inch—Single Weave</b>						
1862	\$3.25	3/4	7/8	18	3,300	1
1863	3.50	1	1 3/8	18	6,300	1 1/2
<b>24-Inch—Double Weave</b>						
1974	\$5.60	1 1/2	1 7/8	24	12,600	3
1975	6.20	2	2 3/8	24	16,800	4
1976	6.80	2 1/2	2 7/8	24	24,600	6
1977	7.40	3	3 3/8	24	24,600	5 1/2
1978	8.00	3 1/2	3 7/8	24	24,600	5 1/2

**Reliable Bronze Cable Grips**

Used for permanent fastenings and supports for cables. Bronze cable grips can be furnished in all standard designs and sizes specified for steel.

To obtain prices, add 20 per cent to steel prices for sizes 1/2-inch diameter to 1 7/8-inch diameter. For sizes 2 inches in diameter and larger, add 30 per cent. Example: No. 1023, steel price, \$4.60; bronze price, \$5.52.



## Perfection Flat Tape Conduit Rods



In general use by power, electric light, telephone, city fire alarm systems, street railway companies, and contractors in general.

This rod will handle laterals easily. One man can rod 300 feet, using the patent grip handle.

The factor of broken rods has been eliminated. The average time required to rod 500 feet with two men is about twenty minutes, at an average cost of about  $\frac{1}{4}$  cent a running duct foot.

**$\frac{1}{4} \times \frac{1}{16}$ -Inch Size.** Will take right angles in  $1\frac{1}{2}$ -inch conduits. With flexible cleanout leader, ball roller, and adjustable hand grip. On safety holding frame.

In 100 to 500-foot lengths.  
Per 100 Feet..... **\$6.00**

**$\frac{1}{2} \times \frac{1}{16}$ -Inch Size.** For 2 to 4-inch ducts. Flexible; will take laterals; will rod over another cable in ducts. Has ball roller and sliding rodding hand grip. On safety holding frame.

In 100 to 400-foot lengths.  
Per 100 Feet..... **\$11.25**

**$\frac{1}{2} \times \frac{1}{8}$ -Inch Size.** For 2 to 4-inch ducts. Rigid; for long runs; flexible enough to take laterals. Has ball roller which indicates clearance in duct where one or more cables are in and more cable is desired. Furnished with adjustable hand grip. On safety holding frame.

In 100 to 400-foot lengths.  
Per 100 Feet..... **\$15.75**

**$\frac{3}{4} \times \frac{1}{16}$ -Inch Size.** For 2 to 4-inch ducts. This size is more flexible than the  $\frac{1}{2} \times \frac{1}{16}$ -inch size. Has ball roller and adjustable hand grip. On safety holding frame.

In 100 to 400-foot lengths.  
Per 100 Feet..... **\$12.75**

**$\frac{3}{4} \times \frac{1}{8}$ -Inch Standard Size.** A standard duct size for long runs. For 3 to 4-inch ducts. This rod replaces the old type wooden rod.

Tensile strength, 225,000 pounds per square inch. Breaking strength, 21,000 pounds. On galvanized safety holding frame.

In 100 to 500-foot lengths.  
Net Weight per 100 feet, 33 pounds.  
Per 100 Feet..... **\$22.00**

**$1 \times \frac{1}{8}$ -Inch Special Size.** A rigid, yet sufficiently flexible rod to take laterals. On safety holding frame.

In 100 to 500-foot lengths.  
Per 100 Feet..... **\$28.00**

### Parts

- \*†Large Ball Feeding Rollers.....each **\$2.00**
- \*†Small Ball Feeding Rollers.....each **2.00**
- \*Revolving Spear Heads, Large.....each **5.00**
- Revolving Spear Heads, Small.....each **4.00**

\*Take laterals easily and slide rod through ducts rapidly.

†For 2 to 4-inch ducts.

‡For small ducts or where rodding is done over another cable in ducts.

## Cope Underground Conduit Tools

### Jar Hammers



Used in connection with all types of cutters for removal of stubborn obstructions such as heavy silt, cement, etc.

Made of 2-inch diameter steel tubing with heavy piston and hammer working inside the cylinder.

Size Stroke.....inches **8**  
Each..... **\$22.80**

### Laying Mandrels



Body is of well seasoned maple. Rear end is equipped with a leather wiping washer and the forward end with a counter-sunk steel hoop and tool steel cutting edge.

Length, 36 inches. In diameters to fit any size conduit.

Size.....inches **3 3½ 4 6**  
Each..... **\$15.00 17.20 19.00 27.60**

### Test Mandrels



Round

Square

Made to exact size for testing conduits after laying. Has tool steel cutting ends to remove concrete or other light obstructions. Length, 12 inches.

Size.....inches **3 3½ 4**  
Round.....each **\$9.50 10.50 11.50**  
Square.....each **11.50 12.50 13.50**

### Flexible Mandrels



For testing conduits having bends through which a rigid mandrel would not pass. Constructed of tool steel discs, mounted on a flexible wire rope, securely babbitted to the heavy socket eyes. Will withstand a pull of over 5000 pounds.

Size.....inches **3 3½ 4**  
Each..... **\$30.50 34.30 38.30**

### Pickups



Used to recover rods or tools lost in the conduit. Can also be used on long pulls where it is desirable to work from both ends.

Pickup has two steel shutters with beveled notches and spring action, so that it will recover and catch firmly no matter what position it may be in within the conduit.

Each..... **\$28.80**

### Rod Grapples



Used where long lines of conduit are to be rodded. Permits rodding from both ends of conduit and provides positive connection where they meet. Several hooks engage opposite ends

Each..... **\$14.50**

### Sand Scoops

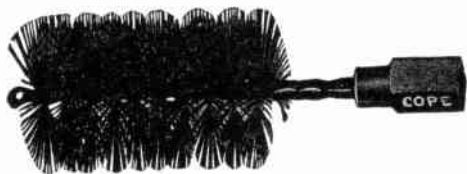


For removing loose sand and silt which may enter the conduit and prove harmful to lead sheathed cables.

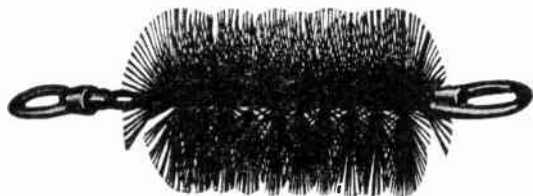
Made of light weight tubing.

Size.....inches **3x15 3½x18 4x20**  
Each..... **\$11.40 13.30 15.20**

**Cope Wire Brush Cleaners**



Single End



Double End

Brush has a flat tempered steel bristle which will remove all sand and other light obstructions.

Made for all size conduits with either a rod connection or socket eyes on both ends.

Diameter.....inches	3	3½	4	5
Single End.....each	\$4.80	\$5.30	\$5.80	\$6.60
Double End.....each	5.30	5.80	6.50	7.30

**Diamond Empire Conduit and Sewer Rods**



Straight sticks are furnished of uniform diameter 1 inch throughout.

Couplings are malleable iron. Ends are interchangeable. Axles are machined from brass rod, solid head and shouldered on coupling. Wheels are machined at hub to fit axle and shaped to conform to curve of duct. The rod is made of best selected straight grain well seasoned hickory, tapering to 1 inch at opening.

Length.....feet	3	4
With Wheels.....each	\$1.80	\$2.00
Without Wheels.....each	1.55	1.75

**Diamond Screw Duct Rods**



Couplings are made of government bronze. The hickory used in the shaft is selected stock, well seasoned. Threads are accurately cut to ¾-inch U.S.S., 10 threads per inch. Rivets are countersunk. Hickory shafts are ¾ inch in diameter.

No. 855, 3-Foot Length.....each	\$1.65
No. 856, 4-Foot Length.....each	1.80

**Cope Quick Coupling Conduit Rods**



Made from annealed malleable iron. Power-driven and securely riveted on the stick.

Stick is made of hickory.

Available in 2, 3, and 4-foot lengths with a straight shaft of 1-inch diameter. The 3 and 4-foot lengths are also made with a swell center stick, having a diameter of 1¼ inches in the center, tapering to 1-inch diameter.

Description	Each	Wt. Lb. per 100
2-Foot Rod, Straight Stick.....	105	
3-Foot Rod, Straight Stick.....	205	
4-Foot Rod, Straight Stick.....	245	
3-Foot Rod, Swell Center Stick.....	230	
4-Foot Rod, Swell Center Stick.....	275	

**Cope Rod Adapters**



Designed to make the Quick coupling rod available for use with any conduit tool equipped for screw coupling or vice versa.

Weight, 2 pounds.

Each..... \$3.00

**Cope Screw Coupling Conduit Rods**



Furnished in 3 or 4-foot lengths.

Coupling is made of cast bronze, octagon-shaped, with a ¾-inch U.S. standard thread.

Stick is made of hickory, and is available with either a ¾ or 1-inch diameter. Also furnished with swell center, 1-inch diameter stick.

Diam. In.	Description	Each	Wt. Lb. per 100
¾	3-Foot Rod, Straight Stick.....	155	
¾	4-Foot Rod, Straight Stick.....	185	
1	3-Foot Rod, Straight Stick.....	195	
1	4-Foot Rod, Straight Stick.....	235	
1	3-Foot Rod, Swell Center Stick.....	220	
1	4-Foot Rod, Swell Center Stick.....	265	

**Cope Iron Cable Dressers**



Used to produce a smooth finish on splices or sleeves when placed over any unevenness in the splice. Made of 2x¼-inch carbon steel. Handle is movable.

Available in two sizes: No. 1 for cable up to 3½ inches in diameter; No. 2 for 4½-inch cable. Weight, 1 pound.

No.....	1	2
Each.....	\$3.25	3.75

**Cope Criss Cross Cleaners**



Cleans conduit. Has a multitude of edges at right angles to the surface of the conduit to assure a thorough cleaning.

Flexible spring formation makes it self-conforming. Adjusting nuts on each end permit nominal adjustments in the outside diameter. Furnished in any diameter. Weight, 5 pounds.

Size.....inches	3	3½	4
Each.....	\$11.50	12.50	13.50

**Cope Washer Duct Cleaners**



For a final wiping and cleaning of the conduit. Consists of a flexible wire rope with tube spacers separating leather washers of graduated sizes, faced with steel. Has heavy socket eyes fastened on both ends. Size, 3 inches.

Furnished in any diameter. Weight, 8 pounds. Each..... \$22.70

**Cope Sag Gages**



Used when stringing open wire.

A sag gage is hung on the cross arm at each end of the span and the target is set at a pre-determined height on the calibrated slot in the gage.

The sag in the line is conditional upon the size of wire and length of span.

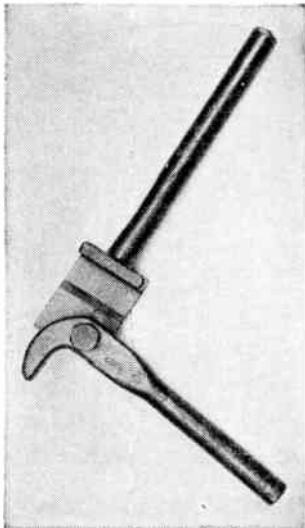
The target folds when not in use, and when open presents a face 12x2 inches, painted bright yellow.

Calibrations, 4 to 18 inches.

Weight, 1½ pounds.

Each..... \$3.80

### Cope Rod Puller



Used for rodding long conduit lines where the weight of the rod becomes a controlling factor.

Made of malleable iron.

Can be placed on the rod at any point and can be used for either pulling or pushing by reversing the tool.

It exerts a firm pressure on the stick without cutting or otherwise injuring the rod.

Weight, 2½ pounds.

Each..... \$4.70

### Cope Push-Pull Jacks



Used for additional slack in a manhole or to take up slack in overhead cable installation. Converted into a pusher by reversing the drawbar.

Made of high carbon, heat treated steel.

Leverage, 30 to 1. Safe capacity, 4000 pounds. Double action makes a secure lock every half inch. Furnished with drop-forged clevis and bronze double shackle swivel.

Weight, 12 pounds.

Each..... \$40.00

### Type C Cope Cable Benders



Designed to form and bend large cable in underground construction.

May also be used for straightening cable.

Adjustable yoke provides seven positions of handle and permits work in close quarters.

Simply pulling back on sleeve releases ratchet and permits handle to be moved in any position.

Yoke and arm are alloy steel castings with extension handle of steel tubing.

Wide bearing surface and rounded edges of shoes prevent injury or deformation of cable sheath.

Overall dimension, 36 inches.

Weight, 14 pounds.

Type C..... each \$28.40

### Cope Cable Puller

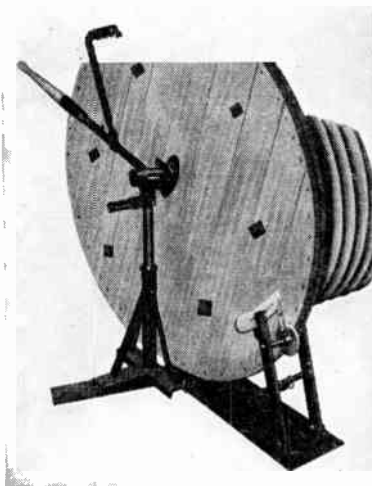


Used with the reel turner and reel brake in pulling out 2½ to 3-inch cable.

The grips or clamps are alloy steel castings designed to exert a positive grip on the cable when in the pulling position. Slackening of the winch or hoist permits it to be released and slid back on the cable for another pull. The grips will not cut or deform the cable. Weight, 30 pounds.

Each..... \$50.00

### Cope Cable Pulling Equipment



#### Safety Reel Brake

Used in the removal of cable to eliminate back-lash.

One man, while handling the turning bar can manage the re-reeling operation.

Adjustable to different sizes of reels. Rings are provided on the base plate for tying to the jack.

Weight, 90 pounds.

Each..... \$72.50

#### Reel Turner

Used to re-reel cable.

One man can safely and easily handle the turning of the reel, taking up the cable as it is pulled from the conduit.

Adjustable to any standard size reel. Weight, 23 pounds.

Each..... \$50.00

### Cope Aerial Tents



For protection of aerial cable during installation or repair.

Made of 10-ounce U. S. Army duck double hemmed at each seam

Framework is made of steel and pipe sections which fold into a compact bundle.

Open dimensions, 52x48 inches.

Length of 104 inches gives plenty of headroom and extends well below the working platform.

Tent is lashed to working platform with ropes provided on each corner of frame. A locking device securely fastens tent frame to the messenger strand.

Weight, with frame, 40 lb.

Each..... \$70.00



**Cope Cable Pulling Rigging**



Type B

Designed to provide a direct pull through the conduit. When in the manhole, the lower sheave is located opposite the conduit with the upper sheave above the street line to lead to the winch.

Constructed of 6-inch 8.2-pound channel, welded. The two sheaves with 10-inch minimum diameter have large, well finished grooves to prevent injury to the cable. Each sheave is mounted on a 1-inch steel shaft.

Length.....feet	9	10	12
Type B.....each	\$60.50	64.75	72.00

**B & L Star Brand Pulling-In Frames**



No. PU 26

The pulling-in frame is constructed to help install cable in underground ducts.

The sheave support consists of two 13-foot sections of 6-inch steel channels, fastened together at each end by two sections of 4-inch steel channels. Each 13-foot section is provided with 24 holes on 6-inch centers in order to allow the two sheaves to be adjusted to the proper position on the sheave support for any cable installation.

Two aluminum sheaves are used with each sheave support; one large sheave and one small sheave which have diameters of 20 and 5 3/4 inches respectively. The diameter and groove of large sheave are of sufficient size to allow a cable to be pulled over it without harming the cable sheath, when this procedure is necessary to obtain sufficient cable in the manhole for splicing. An important feature is that each sheave is provided with Graphite Bronze self-lubricating bushing which makes the use of lubricant unnecessary.

Shipping weight, 260 pounds.  
No. PU26, Complete.....

**Cope Ground Tents**



Gives full protection to men working in a manhole under adverse weather conditions.

Made of 10-ounce U.S. Army duck.

Framework is made of 1/2-inch heavy pipe, welded, and has hot dipped galvanized finish.

Open dimensions, 82 1/2 inches square and 77 inches high.

15 1/2 inches wide, extends around the tent on the ground. Legs of tent fold up in two sections inside the framework to form a compact package approximately 38x38x9 inches.

Weight: frame, 45 pounds; cover, 25 pounds.

Frames and Covers, Complete.....each \$72.50

Frames and covers may be purchased individually.

**Cope Aerial Cable Feeders and Straighteners**



For pulling in aerial cable.

The wide mouth aluminum bells and flexible steel tubing prevent danger to cable or sheath. Holding clamps which securely grip messenger wire can also be used for dead-ending and splicing work. Interior surfaces are smoothly finished to accommodate up to 3-inch cables.

Complete with 6-Foot Tube, 2 Pairs Malleable Iron Clamps.....each	\$38.25
Extra Lengths of Tubing.....per foot	1.50
Holding and Splicing Clamps.....per pair	9.00

**Cope Pull-In-Guide or Cable Feeders**



Used to lead the cable from the street reel into the mouth of the conduit without injury.

Constructed with heavy brass bell, completely finished, securely fixed to a length of heavy steel tubing. The conduit end has a steel sleeve which will accommodate various size brass nozzles to fit the several sizes of conduit.

Guides, Length.....feet	9	12	16	20			
Each.....	\$86.00	95.00	106.25	118.75			
Nozzles, For Conduit in.	2	2 1/2	3	3 1/2	4	4 1/2	5
Each.....	\$18.25	18.25	18.25	18.25	21.00	23.75	23.75

**Cope Cable Drawing-In Protectors**



A heavy brass bell carefully machined and finished. To be used in the mouth of the conduit to protect the lead sheath of the cable from injury while being drawn into the conduit.

<b>Round</b>							
Diameter.....inches	2	2 1/2	3	3 1/2	4	4 1/2	
Each.....	\$7.75	8.50	9.50	11.00	12.50	14.25	

<b>Square</b>								
Size.....inches							3	4
Each.....							\$9.50	12.50

**No. 860 Diamond Manhole Cover Hooks**



This is a useful tool for the subway construction force. It is designed to easily raise a heavy manhole cover by prying the wedged point end of the hook under the groove provided in the cover for the purpose.

The hook is made of an excellent quality of electric tool steel suitably hardened at and adjacent to the hook to prevent its bending, and at the same time sufficiently tough to prevent breaking off.

No. 860.....each \$1.50

## Cope Pneumatic Fish Lines



For rodding long run conduit ranging in size from 3 to 5 inches.

### Reel Unit

The reel is equipped with crank and gear for re-reeling. Contains 1000 feet of  $\frac{3}{8}$ -inch stranded steel cable having a tensile strength of 920 pounds. Only one reel unit is required for use in any size conduit.

### Conduit Seal

Faced with rubber which is expanded to grip the interior surface of the conduit to prevent the loss of air and to support the reel during operation. Expansion range, 1 inch. Two sizes: No. 3, 3 to 4-inch; No. 4, 4 to 5-inch conduit.

### Projectile

Consists of a pair of rubber cups fastened together. When compressed air is introduced, the projectile progresses 100 feet per minute with a pressure of less than 10 pounds. Since rubber cups must have a snug fit, each projectile will fit only one size conduit. Furnished with one projectile for any one size ranging from 3 to 5 inches.

Furnished with carrying case.

Weight, 100 pounds.

Complete.....each **\$205.00**  
 Additional Seals.....each **72.50**  
 Additional Projectiles.....each **20.00**

Up to 2000 feet of reel cable can be furnished at additional cost.

## No. 220 Simplex Manhole Sheaves



For pulling cable or carrying the winch line at right angles. Used on end of a truck or over edge of manhole in connection with a snatch block in the manhole, eliminating use of manhole skids.

Will handle cable up to 3 inches in diameter, or any size winch line.

Furnished with a  $\frac{1}{4}$ -inch chain, 24 inches long, with special hook for anchoring.

No.....**220**  
 Each.....**\$106.00**  
 Large Sheave Diameter.....inches **7 $\frac{3}{4}$**   
 Large Sheave Width.....inches **3**  
 Small Sheave Diameter.....inches **4 $\frac{3}{4}$**   
 Small Sheave Width.....inches **3**  
 Weight.....pounds **100**

## No. PU 27 B & L Star Brand Cable Sheaves and Shackles



The cable sheave and shackle may be used in place of the pulling-in frame when it is possible or advisable to locate the rear of the truck directly over the manhole. The device is attached to the manhole pulling iron and the winch line goes over a roller or sheave at the rear of the truck then down and under the cable sheave and shackle and thus into the duct. The sheave is made of special aluminum alloy for light weight, 20 inches in diameter, with a groove large enough to take a  $2\frac{5}{8}$ -inch cable. The hook is drop-forged.

Complete, Approximate Weight, 65 Pounds..... **\$180.00**  
 Frame, Complete, less Sheave, Approx. Wt., 37 lb. ea. **35.00**  
 20-Inch Diam. Aluminum Sheave, Approx. Wt., 28  
 Lb.....each **145.00**

## Cope Manhole Guard Rails

Made of  $\frac{3}{4}$ -inch standard black steel pipe with seamless steel tubing sleeves. Made with a completely welded construction.

Unless otherwise ordered, all rails are painted with two coats of Signal Red Enamel.

### Type 264



This guard closely follows the design of the American Telephone and Telegraph Company's standard. The bow-shaped wing brace holds the rail absolutely rigid against collapse when in place, leaving the open side entirely free for work. The chains allow this rail to be padlocked to pole, etc. Can be supplied with or without "men working" panels.

Open 32x32x42 inches high, folded 32x2x42 inches.

Weight, 49 pounds.

Type 264.....each **\$30.75**

### Type 110



This is somewhat lighter construction than the Type 264 while still holding to the same material.

It is equipped with flag holder and steel hook for holding it rigid while open.

Open 32x32x42 inches high, closed 32x3x42 inches.

Weight 40 pounds.

Type 110.....each **\$23.75**

**Peirce Underground Cable Racks**

Hot Galvanized



Rack section is made in three lengths which can be combined into almost any desired length. Section is made from 1½x¾x¾-inch open hearth steel channel, amply strong to support the heaviest cable. Should be fastened to manhole wall with ½x4-inch Peirce Expansion Bolts.

Hook is cut from open hearth steel T section and has a smooth, well rounded top surface 1½ inches wide which will not injure the sheaths of cable. Steel size, 1½x1½x¾ inches. Easily attached and with the weight of the cable on it, holds securely to the channel back.

**Racks**

No. ....	*2124	*2125	*2126
Per 100 .....	\$55.12	98.25	115.81
No. of Holes .....	8	14	18
Hook Hole Spacing .....	1½	1½	1½
Overall Length .....	15	24	30
Bolt Hole Spacing .....	13½	22½	28½
Ship. Wt. per 100 .....	155	265	315

**Hooks**

No. ....	*2131	*2132	*2133
Per 100 .....	\$52.51	75.39	92.97
Extension from Face of Rack inches	4	7½	10
Ship. Wt. per 100 .....	61	110	135

†A.T. & T. Co. Std. \*Western Union Std.

**Hubbard Underground Cable Racks**

Hot Galvanized



Furnished to accommodate from one to four hooks. Combinations may be used for a greater number of hooks if desired.

Hook furnished in three lengths made from certified malleable iron, hot galvanized. Hook is placed in position by raising the outer end slightly above horizontal so that the supporting lug will engage the opening in the rack. It is then moved to alignment and allowed to drop into place where it is held against side movement by web braces which engage the back on both sides.

**Locktype Racks**

No. ....	2281	2282	2283	2284
Per 100 .....	\$153.04	208.59	251.98	294.47
No. of Holes .....	1	2	3	4
Hook Hole Spacing .....	7	7	7	7
Length Overall .....	14¾	21¾	28¾	35¾
Bolt Hole Spacing .....	13	20	27	34
Ship. Wt. per 100 .....	280	385	535	645

**Locktype Hooks**

No. ....	2254	2258	2262
Per 100 .....	\$139.25	177.33	226.68
Extension .....	4¼	8¼	12¼
Width .....	2	2	2
Ship. Wt. per 100 .....	183	260	341

**Cable Rack Insulators**



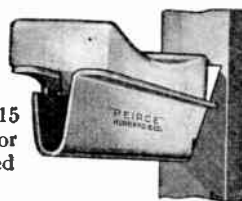
No. ....	For Peirce Racks		For *Hubbard Racks	
	2120	2122	2123	2123
Per 100 .....	\$31.45	31.44	75.63	
Radius for Cable .....	1½	1½	2¼	
Length Along Hook .....	3	3	3½	
Width .....	2¾	3	3	
Ship. Wt. per 100 .....	105	129	160	

\*For Locktype hooks.

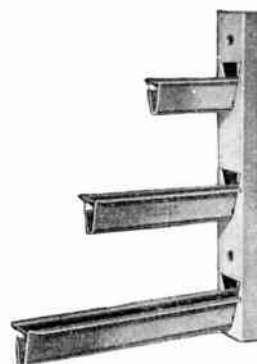
**Peirce V-Type Cable Racks**

Hot Galvanized

Insulator No. 2215



No. 2215 Insulator Installed



Hooks are held rigidly in a horizontal position.

No. 2291 hook accommodates one insulator, No. 2292 takes two insulators, No. 2293 takes three insulators, and No. 2294 takes four insulators.

The same number of either size insulator listed will fit on any hook. When more than one insulator is used, they are generally spaced an inch or more apart to give mechanical and electrical clearance.

A stop is furnished on each hook to prevent the insulators from sliding off the end.

No.	Per 100	No. of Slots	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb. per 100
			Slot Spacing	Overall Length	Flat Steel or Channel Size	
2471	\$79.67	2	8	8	4x1½x¾	360
2472	169.73	2	8	16	4x1½x¾	685
2473	225.27	3	8	24	4x1½x¾	1010
2474	271.71	4	8	32	4x1½x¾	1335
2475	316.47	5	8	40	4x1½x¾	1660
2476	385.04	6	8	48	4x1½x¾	1985

**Hooks**

No.	Per 100	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb. per 100
		Extension From Face of Rack	Overall Length	Steel Size Gage	
2291	\$64.76	5¼	6⅞	12	115
2292	78.66	10¼	12	12	265
2293	100.03	16⅞	18	12	385
2294	128.76	22⅞	24	12	505

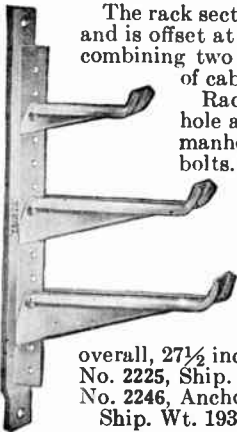
**Insulators—White Glaze**

No.	Per 100	DIMENSIONS, INCHES			Approx. Ship. Wt. Lb. per 100
		Radius for Cable	Overall Length	Overall Width	
2114	\$29.73	1¾	4½	2⅞	170
2115	47.44	2⅞	4½	2⅞	160



## No. 2225 Peirce Heavy Cable Racks

Hot Galvanized



The rack section is  $2\frac{1}{4} \times 2\frac{1}{4} \times \frac{1}{4}$ -inch steel T section and is offset at the lower end for overlapping when combining two racks together. Any desired length of cable rack can be made in this manner.

Rack is provided with  $\frac{1}{16}$ -inch mounting hole at top and bottom and is fastened to manhole walls with  $\frac{1}{2} \times 4$ -inch expansion bolts. Anchor bolt No. 2246 is also used for this purpose. It consists of hook head which is cemented in masonry, opposite end being threaded and equipped with nut for attachment.

Number of holes, 14. Hook hole spacing,  $1\frac{1}{2}$  inches; bolt hole spacing,  $25\frac{1}{2}$  inches. Length

overall,  $27\frac{1}{2}$  inches.

No. 2225, Ship. Wt. 800 Pounds . . . per 100 \$223.63

No. 2246, Anchor Bolt,  $\frac{5}{8} \times 6$  Inches, Ship. Wt. 193 Pounds . . . per 100 26.93

## Peirce Underground Heavy Cable Rack Hooks

Hot Galvanized

Made of one-piece  $\frac{3}{16}$ -inch steel pressed to channel shape. Edges are rounded, and there is a smooth surface for cable to rest upon. Width,  $2\frac{1}{2}$  inches.

Used with or without an insulator.

No.	2231	2232	2233
Per 100	\$122.17	156.19	222.24
Extension . . . . . inches	6	$10\frac{1}{2}$	15
Shipping Weight per 100 . . . pounds	180	308	489

## Peirce White Glaze Insulators

Insulator fits snugly on cable hooks. Weight of cable holds it in place. Width,  $3\frac{3}{4}$  inches.

No.	2117	2118	2121
Per 100	\$70.87	78.66	86.28
Radius for Cable . . . . . inches	$\frac{3}{4}$	$1\frac{1}{2}$	$2\frac{5}{8}$
Length Along Hook . . . . . inches	$2\frac{1}{4}$	3	$3\frac{3}{4}$
Shipping Weight per 100 . . . pounds	90	115	125

## Hubbard Cable Duct Shields

Zinc and Hot Galvanized Steel



No. 9142

This shield is used to protect cable sheaths at the entrance of ducts.

.050-Inch Sheet Zinc

No.	Per 100	Diameter Inches	Length Inches	Shipping Weight Pound per 100
9141	\$37.18	3	6	63
9122	47.16	3	8	68
9123	59.44	3	10	84
9125	38.81	$3\frac{1}{4}$	6	53
9126	50.59	$3\frac{1}{4}$	8	71
9127	63.37	$3\frac{1}{4}$	10	78
9129	41.23	$3\frac{1}{2}$	6	55
9130	53.88	$3\frac{1}{2}$	8	75
9131	67.29	$3\frac{1}{2}$	10	94
9133	45.25	4	6	62
9134	59.80	4	8	82
9144	74.11	4	10	103
9137	50.95	$4\frac{1}{2}$	6	68
9138	67.02	$4\frac{1}{2}$	8	91
9139	83.33	$4\frac{1}{2}$	10	115

### No. 20-Gage Sheet Steel

*9140	\$47.67	3	6	67
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### No. 12-Gage Sheet Steel

9142	\$74.87	$2\frac{5}{8}$	9	187
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\*A. T. & T. Co. Std.

## Hubbard Manhole Ladders

Hot Galvanized

Made to the specifications of the largest telephone and central station companies.

Rung spacing, 12 inches. Width inside, 12 inches. Rungs are  $\frac{5}{8}$  inch round.



No.	Per 100	Overall Feet	No. of Rungs	Ship. Wt. Lb. Per 100
†9110	\$953.54	6	5	2500
†9111	1063.71	$6\frac{1}{2}$	6	2700
†9112	1309.63	8	7	3300
†9113	1532.51	10	9	4200
†9114	1825.63	11	10	4600
†9115	1963.27	12	11	5000
†9116	2166.53	13	12	5400
†9117	2289.88	14	13	5900

†A.T. & T. Co. Std.

## No. 9145 Hubbard Plain Dowel Pins

For Clay Conduit



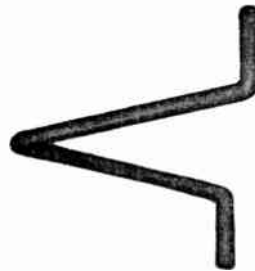
Used in the ends of multiple duct clay conduit for preserving alignment of adjacent sections. Made of  $\frac{3}{16}$ -inch diameter steel with a shoulder in the center. Overall length,  $3\frac{3}{4}$  inches. Collar diameter,  $\frac{9}{16}$  inch.

No. 9145, Ship. Wt. 9 Pounds . . . . . per 100 \$3.39

## Hubbard Pulling-In Irons

For Manholes

Hot Galvanized



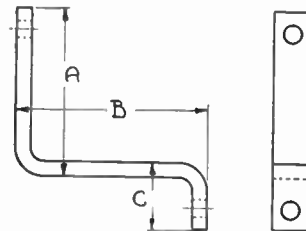
This iron is set into the concrete or brick walls of street vaults opposite duct entrances to provide a convenient and strong attachment for block and tackle when installing or removing cables.

No.	†9119	*†9120
Per 100	\$168.66	175.12
Diameter Steel . . . . . in.	$\frac{1}{8}$	$\frac{7}{8}$
Extension from Wall . . . . . in.	9	12
Ship. Wt. per 100 . . . . . lb.	550	660

†A.T. & T. Co. Std. \*Western Union Std.

## Hubbard Cable Rack Extensions

Hot Galvanized















Used for mounting racks away from the wall because of obstructions, limited space or to escape water seepage. If used away from wall, racks can be mounted on approximately  $4\frac{1}{2}$  inches less wall space than is needed for the rack. If extension is turned around and mounted, it will occupy 10 to 13 inches more wall space than the length of rack.

Mounting is generally accomplished by means of two No. 13,  $\frac{1}{2} \times 4$ -inch Peirce Expansion Bolts. Furnished 1 and  $1\frac{1}{4}$  inches wide in  $\frac{1}{2}$ -inch stock. Mounting holes are for  $\frac{1}{2}$ -inch bolts. Order two for each rack mounting.









No.	2101	2102
Per 100	\$39.96	75.50
Steel Size . . . . . inches	$\frac{1}{2} \times 1$	$\frac{1}{2} \times 1\frac{1}{4}$
Dimension A . . . . . inches	$4\frac{1}{4}$	$5\frac{3}{4}$
Dimension B . . . . . inches	$3\frac{3}{8}$	$6\frac{9}{16}$
Dimension C . . . . . inches	$2\frac{1}{4}$	$2\frac{3}{8}$
Diameter Holes . . . . . inches	$\frac{3}{16}$	$\frac{3}{16}$
Ship. Weight per 100 . . . . . pounds	176	270

Electrical Wiring Symbols

General Outlets

Symbol	Description
	Outlet.
	Blanked Outlet.
	Drop Cord.
	Electrical Outlet—for Use Only When Circle Used Alone Might Be Confused with Columns, plumbing symbols, Etc.
	Fan Outlet.
	Junction Box.
	Lamp Holder.
	Lamp Holder with Pull Switch.
	Pull Switch.
	Outlet for Vapor Discharge Lamp.
	Exit Light Outlet.
	Clock Outlet (Specify Voltage).

Convenience Outlets

	Duplex Convenience Outlet.
	Convenience Outlet Other Than Duplex. 1=Single, 3=Triplex, Etc.
	Weatherproof Convenience Outlet.
	Range Outlet.
	Switch and Convenience Outlet.
	Radio and Convenience Outlet.
	Special Purpose Outlet (Desc. in Spec.)
	Floor Outlet.

Switch Outlets

S	Single Pole Switch.
S <sub>2</sub>	Double Pole Switch.
S <sub>3</sub>	Three Way Switch.
S <sub>4</sub>	Four Way Switch.
S <sub>D</sub>	Automatic Door Switch.
S <sub>E</sub>	Electrolier Switch.
S <sub>K</sub>	Key Operated Switch.
S <sub>P</sub>	Switch and Pilot Lamp.
S <sub>CB</sub>	Circuit Breaker.
S <sub>WCB</sub>	Weatherproof Circuit Breaker.
S <sub>MC</sub>	Momentary Contact Switch.
S <sub>RC</sub>	Remote Control Switch.
S <sub>WP</sub>	Weatherproof Switch.
S <sub>F</sub>	Fused Switch.
S <sub>WF</sub>	Weatherproof Fused Switch.

Special Outlets

















Any Standard Symbol As Given Above with the Addition of a Lower Case Subscript Letter May Be Used to Designate Some Special Variation of Standard Equipment of Particular Interest In a Specific Set of Architectural Plans.

When Used They Must Be Listed In the Key of Symbols On Each Drawing and If Necessary Further Described In the Specifications.

























These symbols have been prepared by a technical sub-committee of ASA, Committee Z32, Standardization of Graphical Symbols and Abbreviations for use on Drawings, and have been submitted for approval as an American Standard to replace the symbols shown in ASA C10-1924.

The electrical symbols for architectural plans as finally approved by the ASA as an American Standard will be announced by that body in due course of time.

Panels, Circuits and Miscellaneous

Symbol	Description
	Lighting Panel.
	Power Panel.
	Branch Circuit—Concealed in Ceiling or Wall.
	Branch Circuit—Concealed in Floor.
	Branch Circuit Exposed.
	Home Run to Panel Board. Indicate Number of Circuits by Number of Arrows. Note: Any Circuit without Further Designation Indicates a Two-Wire Circuit. For a Greater Number of Wires Indicate As Follows:  (3 Wires),  (4 Wires), Etc.
	Feeders. Note: Use Heavy Lines and Designate by Number Corresponding to Listing in Feeder Schedule.
	Underfloor Duct & Junction Box—Triple System. Note: For Double or Single Systems Eliminate One or Two Lines. This Symbol Is Equally Adaptable to Auxiliary System Layouts.
	Generator.
	Motor.
	Instrument.
	Power (Or Draw to Scale) Transformer.
	Controller.
	Isolating Switch.

Auxiliary Systems

	Push Button.
	Buzzer.
	Bell.
	Annunciator.
	Outside Telephone.
	Interconnecting Telephone.
	Telephone Switchboard.
	Bell-Ringing Transformer.
	Electric Door Opener.
	Fire Alarm Bell.
	Fire Alarm Station.
	City Fire Alarm Station.
	Fire Alarm Central Station.
	Automatic Fire Alarm Device.
	Watchman's Station.
	Watchman's Central Station.
	Horn.
	Nurse's Signal Plug.
	Maid's Signal Plug.
	Radio Outlet.
	Signal Central Station.
	Interconnection Box.
	Battery.
	Auxiliary System Circuits.

Note: Any Line without Further Designation Indicates a 2-Wire Circuit. For a Greater Number of Wires Designate with Numerals in Manner Similar to - - - 12-No. 18W-3/4"-C., or Designated by Number Corresponding to Listing in Schedule.

Special Auxiliary Outlets.  
Sub-Script Letters Refer to Notes on Plans or Detailed Description in Specifications.

 abc

## Definitions of Electrical Terms

**Air Gap.** Air space in a magnetic circuit through which the magnetic flux must pass. It should be as short as possible as the reluctance of air is very high.

**Ampere.** The unit of current flow of electricity. It means the same with reference to electricity, as does the number of gallons per minute, when referring to the flow of water through a pipe. A 60-watt, 110-volt tungsten lamp takes 0.545 ampere to make it give the proper light.

**Ampere-Hour.** This expression is used to describe the capacity of a storage battery and corresponds to the number of gallons a tank will hold when talking about water. Ampere-hours are obtained by multiplying the number of amperes flowing by the length of time in hours which they flow. Example: How many ampere-hours are required to light four 60-watt, 110-volt tungsten lamps for 3 hours. As stated above one lamp takes 0.545 ampere, so four lamps takes 4 times 0.545 or 2.18 amperes; 2.18 times 3 equals 6.54 ampere-hours.

**Ampere-Turns.** Turns of wire in a coil times the ampere current flowing. It is used as a measure of magnetizing force, which varies directly as the number of ampere-turns.

**Apparent Load or Apparent Power.** Current in amperes times electromotive force in volts gives apparent load in watts. Used for alternating current circuits because the current flow is not in phase with the electromotive force, hence, amperes times volts does not give the real energy load.

**Automatic Battery-Charging Switch.** An automatic switch for opening the circuit between the battery and the generator when for any reason the generator voltage drops below battery voltage. This switch also closes automatically when the generator voltage is at the proper value for charging the battery or lighting the lamps.

**Candlepower.** The unit for measuring strength of a source of light. The usual practical standard is a carefully standardized incandescent lamp, comparison being made by means of a photometer. Ordinary tallow candle gives about 1 c.p.; flat wick oil lamp, 6 c.p.; 60-watt tungsten bulb, 40 c.p.

**Foot-Candle.** Same as candle-foot. The illumination produced at 1 foot from a light of 1 candlepower; illumination varies as the strength of the light source and inversely as the square of the distance from that light source.

**Circular-Mil.** The area of a circle 0.001 in diameter. The circular mils area of a wire varies as the square of the diameter: For No. 36 B & S wire, the diameter is 0.0005 in. and the area 25 circular-mils. For No. 14 wire, the diameter is 0.06408 in. or 64.08 mils and the area is 64.08<sup>2</sup> or 4107 cir. mils.

**Coil Wound Motor.** One in which the armature winding is made up in formed coils then placed on the core and the coil leads connected in proper order.

**Commutating Pole.** A small pole piece on motor generator, usually placed midway between the main pole pieces and provided with a winding to neutralize the magnetic effect of the armature current so as to avoid distortion of the magnetic field with change of load.

**Compensating Winding.** A winding placed on the field poles either to increase voltage as load increases, thus making up for loss of potential in armature and transmission lines, or on one tip of the poles to offset the magnetic effect of armature current and prevent distortion of the magnetic field. The term is also used for alternating-current machines where the compensating current is rectified from alternating, as distinguished from compound winding for direct-current machines.

Continued

## Definitions of Electrical Terms

**Compound-Wound.** Applied to direct-current machines having a series field coil to vary the field magnetism as the load varies, in addition to a shunt field coil for main excitation. The compound coil may be proportioned to add just enough voltage to make up for drop in potential through the armature, (flat compounded), or it may increase the voltage as load increases so as to make up for line drop, (over compounded).

**Condenser.** An electrical device for storing a charge of electricity and returning it to the line. It is used to balance the inductance of a circuit, since its action is opposite in phase to that of inductive apparatus, i.e., it throws the current ahead of the e.m.f. in phase. It is made of alternate plates of tinfoil and insulating material, the size of plates and thickness of insulation determining the capacity for holding electric charge. Capacity is measured, practically, in microfarads or millionths of a farad.

**Dielectric.** A non-conducting or insulating material. The dielectric value of a material is measured by comparing it with that of a like thickness of air taken as unity. Glass is 3 to 8; porcelain, 4.4; treated paper, 2 to 4; paraffin and various forms of rubber, 2.2 to 2.5; mica, 6; water, 80.

**Electro-Magnet.** A core of iron or steel, solid or laminated, surrounded by a coil of wire through which electric current is passed. The coil, carrying current, produces a magnetic field and the core becomes a magnet. Without the core, the coil is known as a solenoid.

**Electrolyte.** The liquid used in a storage battery. It consists of a small portion of sulphuric acid mixed with pure distilled water.

**Exciting Current.** Current used for energizing the field coils of a motor or generator to create magnetic flux in the pole pieces.

**Hysteresis.** The quality of iron which causes lagging of the induced magnetism behind the magnetizing force. When the magnetic field is reversed, this causes a loss varying with the number of reversals per second, with the 1.6 power of the maximum value of magnetic density in the iron and with the volume of iron in the magnetic field.

**Induction Motor.** One in which rotor current is set up by transformer action from alternating currents supplied to the stator windings. The rotor currents are induced by those in the stator, hence the name—induction motor.

**Inductance.** The coefficient of self-induction of a circuit. The effect is to cause current to lag behind electromotive force in phase. It depends on the size and shape of the circuit, cross-section and shape of conductor, magnetic properties of the conductor and the surrounding medium and on the frequency of the current reversal and resistance of the conductor. It is, therefore, difficult to compute except for simple wire circuits suspended in air. The unit for measurement is the henry, or the millihenry (1/1000 of a henry).

**Line Loss.** Energy used up in overcoming the resistance of the transmission line to flow of electric current. Its result is drop in voltage, which varies with resistance of the line and as the square of the current flowing. Also known as I<sup>2</sup>R loss.

**Magnetic Density.** Magnetic lines per unit of area of cross-section of the magnetic circuit, also known as magnetic induction. One magnetic line per square of the centimeter is known as a *gauss* and the magnetic density, B, in gaussés is equal to the magnetizing force, H, times the permeability of the material at the point considered. Permeability of air is 1.

Continued



Definitions of Electrical Terms

Equivalent Values in Different Units

Concluded

**Magnetic Flux.** Total of magnetic lines in a circuit. One line is known as a maxwell and the magnetic flux is equal to the average magnetic density times the area of cross-section of the magnetic circuit. Except for leakage, the magnetic flux will be the same at all parts of a magnetic circuit but the magnetic density will vary with the area of cross-section of different parts. The symbol is F.

**Magnetizing Force.** The force per unit of length of solenoid. It depends on the number of turns and the current flowing. The symbol is H.

**Magnetomotive Force.** The total magnetizing force developed by a solenoid, or required to set up a given density through a magnetic circuit or part of a circuit. The magnetomotive force for each part of a circuit will depend on the material in that part of the circuit and the length of the magnetic path through it. The unit in the C.G.S. system is the gilbert but it is customary to express magnetomotive force in ampere-turns either per inch of length of the magnetic path or total for the circuit.

**Mil.** 1/1000 of an inch.

**Ohm.** The unit of electrical resistance about equivalent to the resistance of 400 feet of common iron telegraph wire.

**Phase.** The relative time of change in values of current or electromotive force. Values which change exactly together are in phase. Difference in phase is expressed in degrees, a complete cycle or double reversal being taken as 360 degrees. A 180-degree phase difference is complete opposition in phase.

**Permeability.** The ratio of magnetic induction or density in a magnetic circuit to the magnetizing force. It is the opposite of reluctivity and is denoted by symbol  $\mu$ .

**Phase Advancer.** A synchronous motor used as a condenser to advance the phase of the lagging current in a circuit and bring it more nearly in phase with the electromotive force.

**Photometer.** An apparatus for measuring the intensity of a source of light by comparison with a known standard source. Various methods of comparison are employed to compare the illumination from two sources.

**Potential.** Voltage, or difference in electric pressure between two parts of a circuit or between a circuit and an outside point.

**Power Factor.** The relation of real to apparent power in an alternating-current circuit. It depends on the difference in phase between current and electromotive force and is equal to the cosine of the angle of phase lag or lead of the current.

**Primary Cell.** A battery cell which generates electromotive force by direct chemical action of the electrolyte on a metal, the metal usually being destroyed in the process.

**Real Power or Actual Power** in an alternating current circuit is that which is measured only with a wattmeter.

**Regulation.** Steadiness of maintaining the value of electromotive force or current. Controlled by generator or transformer action or by a special regulator. Good regulation should hold voltage variation within 3 per cent of normal.

**Repulsion Motor.** An a.c. motor which operates by repulsion of armature conductors by the stator field. It has low starting torque on full load, tendency to spark and rather low efficiency.

**Reluctance.** Magnetic resistance or opposition to the passage of magnetic lines of force. Unit reluctance, the oersted, is that of a cubic centimeter of air. It is the ratio of magnetomotive force to magnetic flux. It is practically the same for all non-magnetic materials but, for iron and steel, it increases with the increase of magnetic density although not in direct proportion.

**Resistivity.** The specific resistance of a substance; the resistance in ohms of a centimeter cube of the material to flow of current between opposite faces.

1 H.P. = { 746 watts  
.746 K.W.  
33,000 ft.-lbs. per minute  
550 ft.-lbs. per second  
2,545 heat-units per hour  
42.4 heat units per minute  
.707 heat-units per second  
.175 lb. carbon oxidized per hour  
2.64 lbs. water evaporated per hour from and at 212° F.

1 H.P. Hour = { 746 K.W. hours  
1,980,000 ft.-lbs.  
2,545 heat-units  
273,740 k.g.m.  
.175 lb. carbon oxidized with perfect efficiency  
2.64 lbs. water evaporated from and at 212° F.  
17.0 lbs. water raised from 62° to 212° F.

1 Kilo-watt = { 1,000 watts  
1.34 H.P.  
2,654,200 ft.-lbs. per hour  
44,240 ft.-lbs. per minute  
737.3 ft.-lbs. per second  
3,412 heat-units per hour  
56.9 heat-units per minute  
.948 heat-units per second  
2275 lb. carbon oxidized per hour  
3.53 lbs. water evaporated per hour from and at 212° F.

1 Watt per Sq. In. = { 8.9 heat-units per sq. ft. per minute  
6,371 ft.-lbs. per sq. ft. per minute  
.193 H.P. per sq. ft.  
7.233 ft.-lbs.

1 Kilo-gram Meter = { .00000365 H.P. hour  
.00000272 K.W. hour  
.0093 heat-units

1 Lb. Water Evaporated from and at 212° F. = { .283 K.W. hour  
.379 H.P. hour  
965.7 heat-units  
103,900 k.g.m.  
1,019,000 joules  
751,300 ft.-lbs.  
.0664 lb. of carbon oxidized

1 Heat-Unit = { 1,055 watt seconds  
778 ft.-lbs.  
107.6 kilogram meters  
.000293 K.W. hour  
.000393 H.P. hour  
.0000688 lb. carbon oxidized  
.001036 lb. water evaporated from and at 212° F.

1 Heat-Unit per Sq. Ft. per Min. = { .122 watt per sq. in.  
.0176 K.W. per sq. ft.  
.0236 H.P. per sq. ft.

Wiring Formula

Ohm's law is practically the basis for the various formulae in general use for determining the proper size of wire to use to carry various currents. It is essential to know the amount of current expressed in amperes, the distance, and to decide upon the loss to allow in transmission; the best rule is as follows:

The cross section (CM) of the necessary wire is found by multiplying twice the distance one way (2D) by the amount of current expressed in amperes (C) and this by the resistance of one mil-foot (10.7) and dividing by the loss in transmission expressed in volts (v).

$$\text{or, CM} = \frac{2D \times C \times 10.7}{v} \text{ or, CM} = \frac{D \times C \times 21.4}{v}$$

## Equivalent Values in Different Units

Continued

1 Watt =	{	1 joule per second
		.00134 Hp.
		3,412 heat-units per hour
		.7373 ft.-lb. per second
1 Kw. Hour =	{	1,000 watt hours
		1.34 Hp. hours
		2,654,200 ft.-lb.
		3,600,000 joules
1 Ft.-Lb. =	{	3,412 heat-units
		367,000 kilogram meters
		.235 lb. carbon oxidized with perfect efficiency
		3.53 lbs. water evaporated from and at 212°F.
1 Joule =	{	22.75 lbs. of water raised from 62° to 212°F.
		1 watt second
		.00000278 Kw. hour
		.102 k.g.m.
1 lb. Carbon Oxidized with Perfect Efficiency =	{	.0009477 heat-units
		.7373 ft.-lb.
		1.356 joules
		.1383 k.g.m.
1 Ft.-Lb. =	{	.00000377 Kw. hours
		.001285 heat-units
		.0000005 Hp. hour
		14,544 heat-units
1 lb. Carbon Oxidized with Perfect Efficiency =	{	1.11 lb. anthracite coal oxidized
		2.5 lbs. dry wood oxidized
		21 cu. ft. illuminating gas
		4.26 Kw. hours
1 Watt =	{	5.71 Hp. hours
		11,315,000 ft. lb.
		15 lbs. of water evaporated from and at 212°F.

## Equivalent of Electrical Units

1 Hp. =	{	33,000 foot-pounds per minute
		746 watts
		42.746 BTU. (British Thermal Unit) per minute
1 Kw. =	{	2,564.76 BTU. per hour
		44,235 foot-pounds per minute
		1.34 Hp.
1 BTU =	{	0.955 BTU. per second
		57.3 BTU. per minute
		3,438 BTU. per hour
1 Watt =	{	772 foot-pounds
		17,452 watt minutes
		0.2909 watt hours.
1 Watt =	{	44.236 foot-pounds per minute
		2,654.16 foot-pounds per hour

Latent heat of evaporation of water = 966 BTU.

Latent heat of melting of water = 142 BTU.

To evaporate 1 lb. water from and at 212° = 16.859 Kw. minutes

To evaporate 1 lb. water from and at 212° = 0.281 Kw. hours

Weight per cu. ft. of water = 62.42 lb.

Weight per gallon of water = 8.33 lb.

## Tables

### Units of Measure

The electrical units are derived from the following mechanical units of the metric system:

**METER.**—A unit of length equal, approximately, to one ten-millionth part of a quadrant of a meridian of the earth taken through Paris; or, approximately, to 39.37 inches.

**GRAMME.**—Unit of weight. Weight of a cubic centimeter of water at a temperature of 4 degrees centigrade.

**SECOND.**—Unit of time. The time of one swing of a pendulum making 86,400 swings in a solar day.

### Electrical Units

**VOLT.**—Such an electromotive force as would cause a current of one ampere to flow against a resistance of one ohm. Such an electromotive force as would charge a condenser of the capacity of one farad with a quantity of electricity equal to one coulomb.

**OHM.**—The practical unit of electric resistance. Such a resistance as would limit the flow of electricity under an electromotive force of one volt, to a current of one ampere, or one-coulomb-per-second.

**MEG OHM.**—1,000,000 ohms.

**AMPERE.**—The practical unit of electric current. A rate of flow of electricity transmitting one coulomb per second. The current of electricity which would pass through a circuit whose resistance is one ohm, under an electromotive force of one volt.

**COULOMB.**—The practical unit of electric quantity. Such a quantity of electricity as would pass in one second through a circuit conveying one ampere. The quantity of electricity contained in a condenser of one farad capacity, when subjected to the E. M. F. of one volt.

**FARAD.**—The practical unit of electric capacity. Such a capacity of a conductor or condenser that one coulomb of electricity is required to produce therein a difference of potential of one volt.

**MICROFARAD (MFD).**—One-millionth of a farad.

**WATT.**—A unit of electric power. A volt-ampere. The power developed when 44.25 foot-pounds of work are done in a minute, or 0.7375 foot-pound of work is done in a second.

**JOULE.**—A volt-coulomb or unit of electric energy or work. The amount of electric work required to raise the potential of one coulomb of electricity one volt. Ten million ergs.

### Ohm's Law

Ohm's law is a method of expressing relationship existing between the electromotive force, current and resistance, and is practically the basis of most electrical computations. It is expressed in various forms, as follows:

$$\text{Current Flow} = \frac{\text{Electromotive Force}}{\text{Resistance}} \text{ or, } I = \frac{E}{R}$$

Electromotive force equals the current flow multiplied by resistance.

Electromotive Force = Current Flow  $\times$  Resistance, or  $E = I \times R$ .

Resistance equals the electromotive force divided by the current flow.

$$\text{Resistance} = \frac{\text{Electromotive Force}}{\text{Current Flow}} \text{ or, } R = \frac{E}{I}$$

$$I = \text{Amperes. } E = \text{Volts. } R = \text{Ohms.}$$

Electromotive force varies directly as the current and resistance.

Resistance varies directly with the electromotive force and inversely as the current.

Current varies directly with the electromotive force and inversely as the resistance.

### Mil

The "mil," whose expressed value is  $\frac{\text{One}}{\text{One-Thousandth}}$  (.001) of an inch, is the practical basis for determining the diameters and thereby the area of all wires used as electric conductors. The diameters being given, the area is obtained by the well-known rule, "the area of a circle, in circular units, is equal to the square of its diameter;" hence the square of the diameter of a wire expressed in mils equals the area of its cross section.

$D^2 = A$ , which area is expressed in Circular Mils or CM.; hence  $D^2 = \text{CM.}$

### Electrical Formula for Determining Amperes, Horsepower, Kilowatts and Kilovolt-Amperes

Desired Data	Alternating Current	
	Single Phase	Two-Phase Four-Wire
Kilowatts	$I \times E \times P.F.$	$I \times E \times 2 \times P.F.$
Kva.	$\frac{1000}{I \times E}$	$\frac{1000}{I \times E \times 2}$
Horsepower Output	$\frac{1000}{I \times E \times \% \text{Eff.} \times P.F.} \times 746$	$\frac{1000}{I \times E \times 2 \times \% \text{Eff.} \times P.F.} \times 746$
Amperes when Hp. is Known	$\frac{Hp. \times 746}{E \times \% \text{Eff.} \times P.F.}$	$\frac{Hp. \times 746}{2 \times E \times \% \text{Eff.} \times P.F.}$
Amperes when Kilowatts is Known	$\frac{Kw. \times 1000}{E \times P.F.}$	$\frac{Kw. \times 1000}{2 \times E \times P.F.}$
Amperes when Kva. is Known	$\frac{Kva. \times 1000}{E}$	$\frac{Kva. \times 1000}{2 \times E}$
Desired Data	A.C. Three-Phase	D.C.
Kilowatts	$I \times E \times 1.73 \times P.F.$	$I \times E$
Kva.	$\frac{1000}{I \times E \times 1.73}$	$\frac{1000}{I \times E}$
Horsepower Output	$\frac{1000}{I \times E \times 1.73 \times \% \text{Eff.} \times P.F.} \times 746$	$\frac{1000}{I \times E \times \% \text{Eff.}} \times 746$
Amperes when Hp. is Known	$\frac{Hp. \times 746}{1.73 \times E \times \% \text{Eff.} \times P.F.}$	$\frac{Hp. \times 746}{E \times \% \text{Eff.}}$
Amperes when Kilowatts is Known	$\frac{Kw. \times 1000}{1.73 \times E \times P.F.}$	$\frac{Kw. \times 1000}{E}$
Amperes when Kva. is Known	$\frac{Kva. \times 1000}{1.73 \times E}$	.....

\*In three-wire, two-phase circuits the current in the common conductor is 1.41 times that in either other conductor.  
 NOTE.—E=Volts; I=Amperes; %Eff.=Per Cent Efficiency; P.F.=Power Factor.

### Transmission Losses

The following table shows the approximate average 1,000-cycle transmission loss for several types of open wire lines and lead-covered cables. Wet weather and also the approximate maximum length of non-loaded circuit corresponding to about 30 db. loss.

Kind of Circuit	Diameter Inches	Approximate Average 1,000 Cycles Loss Db. per mile	Approx. Miles at 8130 Transmission Cycles (B Carrier) at Voice Frequency	Approx. Max. Length Miles for Commercial
6 B&S Copper	.162	.0373	.....	804
8 BWG Copper	.165	.035	.076	855
8 B&S Copper	.1285	.052	.092	575
9 B&S Copper	.114	.062	.100	485
10 B&S Copper	.1019	.079	.115	380
12 B&S & 14 NBS Copper	.080	.113	.....	260
12 NBS Copper	.104	.075	.....	400
10 BWG Iron	.....	.27	.....	110
12 BWG Iron	.....	.30	.....	100
14 BWG Iron	.....	.41	.....	72
8 B&S 50% Copper Clad	.....	.115	.....	261
10 B&S 50% Copper Clad	.....	.17	.....	177
12 B&S 50% Copper Clad	.....	.24	.....	123
8 B&S 30% Copper Clad	.....	.19	.....	156
10 B&S 30% Copper Clad	.....	.29	.....	105
12 B&S 30% Copper Clad	.....	.40	.....	75

### Lead Covered Cable

10 Gage	.102	.301	.529	99
13 Gage	.072	.490	.854	61
16 Gage Type NH	.051	.75	1.38	40
19 Gage Type CNB	.036	1.26	2.38	24
22 Gage Type BPA, CSA	.025	1.79	.....	17
24 Gage Type DSM	.02	2.14	.....	14
26 Gage Type BST	.016	2.67	.....	11

### Number of Conductors in Conduit or Tubing

1 to 9 Conductors—Rubber-Covered Types RF-32, R, RH, RW, and RU Thermoplastic, Types TF, T, and TW

N.E.C. Table 4

Size Conductor A.W.G.	MINIMUM SIZE OF CONDUIT, INCHES								
	No. OF CONDUCTORS								
	1	2	3	4	5	6	7	8	9
18	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4
16	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4
14	1/2	1/2	1/2	1/2	1/2	3/4	1	1	1
12	1/2	1/2	1/2	1/2	3/4	3/4	1	1	1 1/4
10	1/2	3/4	3/4	3/4	3/4	1	1	1 1/4	1 1/4
8	1/2	3/4	3/4	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2
6	1/2	1	1	1 1/4	1 1/4	1 1/2	2	2	2
4	1/2	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2	2 1/2
3	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2
2	3/4	1 1/4	1 1/4	2	2	2	2 1/2	2 1/2	2 1/2
1	3/4	1 1/2	1 1/2	2	2 1/2	2 1/2	2 1/2	3	3
0	1	1 1/2	2	2	2 1/2	2 1/2	3	3	3
00	1	2	2	2 1/2	2 1/2	3	3	3	3 1/2
000	1	2	2	2 1/2	3	3	3	3 1/2	3 1/2
0000	1 1/4	2	2 1/2	3	3	3	3 1/2	3 1/2	4
C.M.									
250000	1 1/4	2 1/2	2 1/2	3	3	3 1/2	4	4	4 1/2
300000	1 1/4	2 1/2	2 1/2	3	3 1/2	4	4	4 1/2	4 1/2
350000	1 1/4	3	3	3 1/2	3 1/2	4	4 1/2	4 1/2	5
400000	1 1/2	3	3	3 1/2	4	4	4 1/2	5	5
500000	1 1/2	3	3	3 1/2	4	4 1/2	5	5	6
600000	2	3 1/2	3 1/2	4	4 1/2	5	6	6	6
700000	2	3 1/2	3 1/2	4 1/2	5	5	6	6	.....
750000	2	3 1/2	3 1/2	4 1/2	5	6	6	6	.....
800000	2	3 1/2	4	4 1/2	5	6	6	.....	.....
900000	2	4	4	5	6	6	6	.....	.....
1000000	2	4	4	5	6	6	.....	.....	.....
1250000	2 1/2	4 1/2	4 1/2	6	6	.....	.....	.....	.....
1500000	3	5	5	6	.....	.....	.....	.....	.....
1750000	3	5	6	6	.....	.....	.....	.....	.....
2000000	3	6	6	.....	.....	.....	.....	.....	.....

\*Where a service run of conduit or electrical metallic tubing does not exceed 50 feet in length and does not contain more than the equivalent of two quarter-bends from end to end; two No. 4 insulated and one No. 4 bare conductors may be installed in 1-inch conduit or tubing.

The above applies only to complete conduit systems, and does not apply to short sections of conduit used for the protection of exposed wiring from mechanical injury.

### Dimensions of Rubber-Covered and Thermoplastic Covered Conductors

N.E.C. Table 13

Size A.W.G.	TYPES RF-32, R, RH, RW			TYPES TF, T, TW, RU			TYPES RF-32, R, RH, RW			TYPES TF, T, TW, RU		
	Approx. Diam.	Area Sq. In.	Approx. Sq. In.	Approx. Diam.	Area Sq. In.	Approx. Sq. In.	Approx. Diam.	Area Sq. In.	Approx. Diam.	Area Sq. In.	Approx. Sq. In.	
18	.146	.0167	.106	.0088	MCM.							
16	.158	.0196	.118	.0109	250	.368	.5917	.788	.4877			
*14	.171	.0230	.131	.0135	300	.933	.6837	.843	.5581			
†14	†.204	†.0327	.....	.....	350	.985	.7620	.895	.6291			
*12	.188	.0278	.148	.0172	400	1.032	.8365	.942	.6969			
†12	†.221	†.0384	.....	.....	500	1.119	.9834	1.029	.8316			
10	.242	.0460	.168	.0224	600	1.233	1.1940	1.143	1.0261			
8	.311	.0760	.228	.0408	700	1.304	1.3355	1.214	1.1575			
6	.397	.1238	.323	.0819	750	1.339	1.4082	1.249	1.2252			
4	.452	.1605	.372	.1087	800	1.372	1.4784	1.282	1.2908			
3	.481	.1817	.401	.1263	900	1.435	1.6173	1.345	1.4208			
2	.513	.2067	.433	.1473	1000	1.494	1.7531	1.404	1.5482			
1	.588	.2715	.508	.2027	1250	1.676	2.2062	1.577	1.9532			
0	.629	.3107	.549	.2367	1500	1.801	2.5475	1.702	2.2748			
00	.675	.3578	.595	.2781	1750	1.916	2.8895	1.817	2.5930			
000	.727	.4151	.647	.3288	2000	2.021	3.2079	1.922	2.9013			
0000	.785	.4840	.705	.3904	.....	.....	.....	.....	.....			

\*With 3/64-inch insulation.

†With 3/64 inch insulation.

†Dimensions for Type RW; also to be used for new work in computing the size of conduit or tubing for combinations of conductors not shown in Table 4.

§Type RU conductors recognized in sizes No. 14 to No. 6. No. 18 to No. 8, solid; No. 6 and larger stranded.



## Number of Conductors in Conduit or Tubing

Lead-Covered—Types RL, and RHL—600 Volts

N.E.C. Table 5

Size Conductor A.W.G.	MINIMUM SIZE OF CONDUIT, INCHES														
	Single Conductor			2-Conductor Cable			3-Conductor Cable								
	No. of Conductors	1	2	3	4	No. of Conductors	1	2	3	4	No. of Conductors	1	2	3	4
14	1/2	3/4	3/4	1	1	3/4	1	1	1 1/4	3/4	1 1/4	1 1/2	1 1/2		
12	1/2	3/4	3/4	1	1	3/4	1	1 1/4	1 1/4	1	1 1/4	1 1/2	2	2	
10	1/2	3/4	1	1	1	3/4	1 1/4	1 1/4	1 1/2	1	1 1/2	2	2	2	
8	1/2	1	1 1/4	1 1/2	1	3/4	1 1/4	1 1/2	2	1	2	2	2 1/2		
6	3/4	1 1/4	1 1/2	1 1/2	1 1/4	1 1/2	2	2 1/2	2 1/2	1 1/4	2 1/2	3	3	3	
4	3/4	1 1/4	1 1/2	1 1/2	1 1/4	2	2 1/2	2 1/2	3	1 1/2	3	3	3 1/2		
3	3/4	1 1/4	1 1/2	2	1 1/4	2	2 1/2	3	3 1/2	2	4	4 1/2	5		
2	1	1 1/4	1 1/2	2	1 1/2	2 1/2	3	3 1/2	4	2 1/2	4	4 1/2	5	6	
1	1	1 1/2	2	2	1 1/2	2 1/2	3	3 1/2	4	2 1/2	4 1/2	5	6		
0	1	2	2	2 1/2	2	2 1/2	3	3 1/2	4	2 1/2	4 1/2	5	6		
00	1	2	2	2 1/2	2	3	3 1/2	4	4 1/2	2 1/2	4 1/2	5	6		
000	1 1/4	2	2 1/2	2 1/2	2	3	3 1/2	4	4 1/2	2 1/2	4 1/2	5	6		
0000	1 1/4	2 1/2	2 1/2	3	2 1/2	3	3 1/2	4 1/2	5	3	5	6	6		
C.M.															
250000	1 1/4	2 1/2	3	3				3	6	6					
300000	1 1/2	3	3	3 1/2				3 1/2	6	6					
350000	1 1/2	3	3	3 1/2				3 1/2	6	6					
400000	1 1/2	3	3	3 1/2				3 1/2	6	6					
500000	1 1/2	3	3	3 1/2	4			4	6						
600000	2	3 1/2	4	4 1/2											
700000	2	4	4	5											
750000	2	4	4	5											
800000	2	4	4 1/2	5											
900000	2 1/2	4	4 1/2	5											
1000000	2 1/2	4 1/2	4 1/2	6											
1250000	3	5	5	6											
1500000	3	5	6	6											
1750000	3	6	6												
2000000	3 1/2	6	6												

The above sizes apply to straight runs or with nominal offsets equivalent to not more than two quarter-bends.

## More Than 9 Conductors—Rubber-Covered Types RF-32, R, RH, RW, and RU—600 Volts Thermoplastic, Types TF, T, and TW

N.E.C. Table 9

More than 9 conductors are permitted in a single conduit for conductors between a motor and its controller; stage pocket and border circuits; sign flashers; elevator control conductors; and signal and control circuits.

Size A.W.G.	No. of Conductors						
	MINIMUM SIZE OF CONDUIT, INCHES						
	3/4	1	1 1/4	1 1/2	2	2 1/2	3
18	12	20	35	49	80	115	176
16	10	17	30	41	68	97	150
14	..	10	18	25	40	59	90
12	..	..	15	21	35	50	77
10	..	..	13	17	29	41	64
8	..	..	..	10	17	25	38
6	..	..	..	..	..	15	23

## Bends

Bends of rigid conduit shall be so made that the conduit will not be injured and that the internal diameter of the conduit will not be effectively reduced. The radius of the curve of the inner edge of any field bend shall not be less than shown in the following table:

### Radius of Conduit Bends

Size of Conduit Inches	Conductors With Lead Sheath Inches		Conductors Without Lead Sheath Inches	
	Without Lead Sheath	With Lead Sheath	Without Lead Sheath	With Lead Sheath
1/2	3.7	6.2	3	18.4
3/4	4.9	8.3	3 1/2	21.3
1	6.3	10.5	4	24.1
1 1/4	8.3	13.8	4 1/2	27.0
1 1/2	9.6	16.1	5	30.3
2	12.4	20.6	6	36.4
2 1/2	14.8	24.6	..	..

## Dimensions of Conduit or Tubing

N.E.C. Table 19

Size Inches	Internal Diameter Inches	Area Square Inches	Size Inches	Internal Diameter Inches	Area Square Inches
1/2	.622	.30	3	3.068	7.38
3/4	.824	.53	3 1/2	3.548	9.90
1	1.049	.86	4	4.026	12.72
1 1/4	1.380	1.50	4 1/2	4.506	15.95
1 1/2	1.610	2.04	5	5.047	20.00
2	2.067	3.36	6	6.065	28.89
2 1/2	2.469	4.79	..	..	..

## Properties of Copper Conductors

N.E.C. Table 18

Size A.W.G.	CONCENTRIC LAY STRANDED CONDUCTORS		BARE CONDUCTORS		D.C. RESISTANCE OHMS PER 1000 FEET AT 25° C., 77° F.	
	Area Circular Mils	No. of Wires	Diam. Inches	*Area Square Inches	Bare Conductor	Tinned Conductor
18	1624	Solid	.0403	.0403	.0013	6.51000
16	2583	Solid	.0508	.0508	.0020	4.09400
14	4107	Solid	.0641	.0641	.0032	2.57500
12	6530	Solid	.0808	.0808	.0051	1.61900
10	10380	Solid	.1019	.1019	.0081	1.01800
8	16510	Solid	.1285	.1285	.0130	.64100
6	26250	7	.0612	.1840	.0270	.41000
4	41740	7	.0772	.2320	.0420	.25900
3	52640	7	.0867	.2600	.0530	.20500
2	66370	7	.0974	.2920	.0670	.16200
1	83690	19	.0664	.3320	.0870	.12900
0	105500	19	.0745	.3730	.1090	.10200
00	133100	19	.0827	.4180	.1370	.08110
000	167800	19	.0940	.4700	.1730	.06420
0000	211600	19	.1055	.5280	.2190	.05090
MCM.						
250000	250000	37	.0822	.5750	.2600	.04310
300000	300000	37	.0900	.6300	.3120	.03600
350000	350000	37	.0973	.6810	.3640	.03080
400000	400000	37	.1040	.7280	.4160	.02700
500000	500000	37	.1162	.8140	.5200	.02160
600000	600000	61	.0992	.8930	.6260	.01800
700000	700000	61	.1071	.9640	.7300	.01540
750000	750000	61	.1109	.9980	.7820	.01440
800000	800000	61	.1145	1.0310	.8350	.01350
900000	900000	61	.1215	1.0930	.9380	.01200
1000000	1000000	61	.1280	1.1520	1.0420	.01080
1250000	1250000	91	.1172	1.2890	1.3050	.00864
1500000	1500000	91	.1284	1.4120	1.5660	.00719
1750000	1750000	127	.1174	1.5260	1.8290	.00617
2000000	2000000	127	.1255	1.6310	2.0890	.00539

\*Area given is that of a circle having a diameter equal to the overall diameter of a stranded conductor.

The resistance values given in the last two columns are applicable only to direct current.

## Combination of Conductors

N.E.C. Table 11

For groups or combinations of conductors not included in the preceding tables, it is recommended that the conduit or tubing be of such size that the sum of the cross-sectional areas of the individual conductors will not be more than the percentage of the interior cross-sectional area of the conduit or tubing than as shown in the following table:

### Per Cent Area of Conduit or Tubing

Description	No. of Conductors				
	1	2	3	4	Over 4
Conductors (Not Lead-Covered)...	53	31	43	40	40
Lead-Covered Conductors.....	55	30	40	38	35
*For Rewiring Existing Raceways..	60	40	50	50	50

\*For increased load where it is impracticable to increase the size of the raceway due to structural conditions.

Insulated Cable

How to Select Conductor Size

Sizes Required to Maintain 2 Per Cent Maximum Voltage Drop

Single Phase A.C. Circuit (In Conduit)

Current in Amperes	CONDUCTOR SIZE REQUIRED, A.W.G. OR 1000 CIR MILS																	
	110 Volts									220 Volts								
	25	50	75	100	150	200	300	400	500	25	50	75	100	150	200	300	400	500
1	..	..	..	..	..	..	14	12	10	..	..	..	..	..	..	..	..	14
1.5	..	..	..	..	14	14	12	10	10	..	..	..	..	..	..	14	14	12
2	..	..	..	..	14	12	10	10	8	..	..	..	..	..	..	14	12	12
3	..	..	14	14	12	10	8	8	6	..	..	..	..	14	14	12	10	10
4	..	..	14	12	10	10	8	6	6	..	..	..	..	14	12	10	10	8
5	..	14	12	12	10	8	6	6	4	..	..	..	14	12	12	10	8	8
6	..	14	12	10	8	8	6	4	4	..	..	11	14	12	10	8	8	6
7	..	14	12	10	8	8	6	4	2	..	..	14	14	12	10	8	8	6
8	..	12	10	10	8	6	4	2	2	..	..	14	12	10	10	8	6	6
9	..	12	10	8	8	6	4	2	2	..	14	14	12	10	8	8	6	4
10	14	12	10	8	6	6	4	2	2	..	14	12	12	10	8	6	6	4
12	14	10	8	8	6	4	2	1	1	..	14	12	10	8	8	6	4	4
14	14	10	8	8	6	4	2	0	0	..	14	12	10	8	8	6	4	2
16	12	10	8	6	4	4	2	0	00	..	12	10	10	8	6	4	4	2
18	12	8	8	6	4	2	1	00	00	14	12	10	8	8	6	4	2	2
20	12	8	6	6	4	2	1	00	000	14	12	10	8	6	6	4	2	2
25	10	8	6	4	2	2	0	000	0000	14	10	8	8	6	4	2	2	1
30	10	6	4	4	2	1	00	..	..	12	10	8	6	4	4	2	1	0
35	10	6	4	2	2	0	000	..	..	12	10	8	6	4	2	2	0	00
40	a8	6	4	2	1	00	0000	..	..	12	8	6	6	4	2	1	00	0000
45	8	4	4	2	0	00	..	..	..	10	8	6	4	4	2	0	00	0000
50	8	4	2	2	0	000	..	..	..	10	8	6	4	2	2	0	00	0000
60	6	4	2	1	00	0000	..	..	..	10	6	4	4	2	1	00	0000	..
70	6	2	2	0	000	..	..	..	..	10	6	4	2	2	0	000	..	..
80	6	2	1	00	0000	..	..	..	..	8	6	4	2	1	00	0000	..	..
90	4	2	0	00	..	..	..	..	..	8	4	4	2	0	00	..	..	..
100	4	2	0	000	..	..	..	..	..	8	4	2	2	0	000	..	..	..
120	4	1	00	0000	..	..	..	..	..	6	4	2	1	00	0000	..	..	..

3-Phase A.C. Circuit (In Conduit)

Current in Amperes	CONDUCTOR SIZE REQUIRED, A.W.G. OR 1000 CIR MILS																	
	220 Volts									440 Volts								
	25	50	75	100	150	200	300	400	500	25	50	75	100	150	200	300	400	500
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1.5	..	..	..	..	..	..	..	14	14	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	14	14	12	..	..	..	..	..	..	..	..
3	..	..	..	..	..	14	12	12	10	..	..	..	..	..	..	..	14	14
4	..	..	..	..	14	14	12	10	10	..	..	..	..	..	..	14	14	12
5	..	..	..	..	14	12	10	10	8	..	..	..	..	..	..	14	12	12
6	..	..	..	14	12	12	10	8	8	..	..	..	..	..	14	12	12	10
7	..	..	14	14	12	10	8	8	6	..	..	..	..	14	14	12	10	10
8	..	..	14	14	12	10	8	6	6	..	..	..	..	14	14	12	10	10
9	..	..	14	12	10	10	8	6	6	..	..	..	..	14	12	10	10	8
10	..	..	14	12	10	10	8	6	6	..	..	..	..	14	12	10	10	8
12	..	14	12	12	10	8	6	6	4	..	..	..	14	12	12	10	8	8
14	..	14	12	10	8	8	6	4	4	..	..	14	14	12	10	8	8	6
16	..	14	12	10	8	8	6	4	2	..	..	14	14	12	10	8	8	6
18	..	12	10	10	8	6	4	4	2	..	..	14	12	10	10	8	6	6
20	..	12	10	10	8	6	4	2	2	..	..	14	12	10	10	8	6	6
25	14	12	10	8	6	6	4	2	1	..	14	12	12	10	8	6	6	4
30	14	10	8	8	6	4	2	2	0	..	14	12	10	8	8	6	6	4
25	12	10	8	6	4	4	2	1	0	..	12	10	10	8	6	4	4	4
40	12	10	8	6	4	2	2	0	00	..	12	10	10	8	6	4	2	2
45	12	8	6	6	4	2	1	0	000	14	12	10	8	6	6	4	2	2
50	12	8	6	4	4	2	0	00	000	14	12	10	8	6	6	4	2	1
60	10	8	6	4	2	2	0	000	..	14	10	8	8	6	4	2	2	0
70	10	6	4	4	2	1	00	0000	..	12	10	8	6	4	4	2	1	0
80	10	6	4	2	2	0	000	..	..	12	10	8	6	4	2	2	0	00
90	8	6	4	2	1	0	0000	..	..	12	8	6	6	4	2	1	0	000
100	8	6	4	2	0	00	..	..	..	12	8	6	6	4	2	0	00	000
120	8	4	2	2	0	0000	..	..	..	10	8	6	4	2	2	0	000	0000

## Allowable Current-Carrying Capacities of Conductors in Amperes Based on Room Temperature of 30°C., 86°F.

Size A.G.W.	N. E. C. Table 1 Not More Than Three Conductors in Raceway or Cable							N. E. C. Table 2 Single Conductor in Free Air						
	Rubber Type R Type RW Type RU (14-6) Thermo- plastic Type T (14-4/0) Type TW (14-4/0)	Rubber Type RH	Paper Thermo- plastic Asbestos Type TA Var-Cam Type V Asbestos Type AVB	Asbestos Var-Cam Type AVA Type AVL	Impreg- nated Asbestos Type AI (14-8) Type AIA	Asbestos Type AA (14-8)	Asbestos Type AA	Rubber Type R Type RW Type RU (14-6) Thermo- plastic Type T Type TW	Rubber Type RH	Thermo- plastic Asbestos Type TA Var-Cam Type V Asbestos Type AVB	Asbestos Var-Cam Type AVA Type AVL	Impreg- nated Asbestos Type AI (14-8) Type AIA	Asbestos Type AA (14-8)	Asbestos Type AA
14	15	15	25	30	30	30	20	20	30	40	40	40	45	30
12	20	20	30	35	40	40	25	25	40	50	50	50	55	40
10	30	30	40	45	50	55	40	40	55	65	70	75	75	55
8	40	45	50	60	65	70	55	65	70	85	90	100	100	70
6	55	65	70	80	85	95	80	95	100	120	125	135	135	100
4	70	85	90	105	115	120	105	125	135	160	170	180	180	130
3	80	100	105	120	130	145	120	145	155	180	195	210	210	150
2	95	115	120	135	145	165	140	170	180	210	225	240	240	175
1	110	130	140	160	170	190	165	195	210	245	265	280	280	205
0	125	150	155	190	200	225	195	230	245	285	305	325	325	235
00	145	175	185	215	230	250	225	265	285	330	355	370	370	275
000	165	200	210	245	265	285	260	310	330	385	410	430	430	320
0000	195	230	235	275	310	340	300	360	385	445	475	510	510	370
MCM.														
250	215	255	270	315	335	...	340	405	425	495	530	...	...	410
300	240	285	300	345	380	...	375	445	480	555	590	...	...	460
350	260	310	325	390	420	...	420	505	530	610	655	...	...	510
400	280	335	360	420	450	...	455	545	575	665	710	...	...	555
500	320	380	405	470	500	...	515	620	660	765	815	...	...	630
600	355	420	455	525	545	...	575	690	740	855	910	...	...	710
700	385	460	490	560	600	...	630	755	815	940	1005	...	...	780
750	400	475	500	580	620	...	655	785	845	980	1045	...	...	810
800	410	490	515	600	640	...	680	815	880	1020	1085	...	...	845
900	435	520	555	...	...	...	730	870	940	...	...	...	...	905
1000	455	545	585	680	730	...	780	935	1000	1165	1240	...	...	965
1250	495	590	645	...	...	...	890	1065	1130	...	...	...	...	...
1500	520	625	700	785	...	...	980	1175	1260	1450	...	...	...	1215
1750	545	650	735	...	...	...	1070	1280	1370	...	...	...	...	...
2000	560	665	775	840	...	...	1155	1385	1470	1715	...	...	...	1405

### Correction Factor For Room Temperatures Over 30°C., 86°F.

°C. °F.	.82	.88	.90	.94	.95	...	.82	.88	.90	.94	.95	...	...	...
40 104	.82	.88	.90	.94	.95	...	.82	.88	.90	.94	.95	...	...	...
45 113	.71	.82	.85	.90	.92	...	.71	.82	.85	.90	.92	...	...	...
50 122	.58	.75	.80	.87	.89	...	.58	.75	.80	.87	.89	...	...	...
55 131	.41	.67	.74	.83	.86	...	.41	.67	.74	.83	.86	...	...	...
60 140	...	.58	.67	.79	.83	.91	...	.58	.67	.79	.83	.91	...	...
70 158	...	.35	.52	.71	.76	.87	...	.35	.52	.71	.76	.87	...	...
75 167	...	...	.43	.66	.72	.86	...	...	.43	.66	.72	.86	...	...
80 176	...	...	.30	.61	.69	.84	...	...	.30	.61	.69	.84	...	...
90 194	...	...	...	.50	.61	.80	...	...	...	.50	.61	.80	...	...
100 212	...	...	...	...	.51	.77	...	...	...	...	.51	.77	...	...
120 248	...	...	...	...	...	.69	...	...	...	...	...	.69	...	...
140 284	...	...	...	...	...	.59	...	...	...	...	...	.59	...	...

**Aluminum Conductors.** For aluminum conductors, the allowable current-carrying capacities shall be taken as 84 per cent of those given in the table for the respective sizes of copper conductor with the same kind of insulation.

**Bare Conductors.** If bare conductors are used with insulated conductors, their allowable current-carrying capacity shall be limited to that permitted for the insulated conductor with which they are used.

**Application of Table.** For open wiring on insulators and for concealed knob-and-tube work, the allowable current-carrying capacities of Table 2 shall be used. For all other recognized wiring methods, the allowable current-carrying capacities of Table 1 shall be used.

**More Than Three Conductors in a Raceway.** Table 1 gives the allowable current-carrying capacity for not more than three conductors in a raceway or cable. If the number of conductors in a raceway or cable is from 4 to 6, the allowable current-carrying capacity of each conductor shall be reduced to 80 per cent of the values in Table 1. If the number of conductors in a raceway or cable is from 7 to 9, the allowable current-carrying capacity of each conductor shall be reduced 70 per cent of the values in Table 1.

**Neutral Conductor.** A neutral conductor which carries only the unbalanced current from other conductors, as in the case of normally balanced circuits of three or more conductors, shall not be counted in determining current-carrying capacities as provided for in the preceding paragraph. (In a 3-wire circuit consisting of two phase wires and the neutral of a 4-

wire, 3-phase system, a common conductor carries approximately the same current as the other conductors and is not therefore considered as a neutral conductor.)

**Ultimate Insulation Temperature.** In no case shall conductors be associated together in such a way with respect to the kind of circuit, the wiring method employed, or the number of conductors, that the limiting temperature of the conductors will be exceeded.

**Use of Conductors with Higher Operating Temperatures.** If the room temperature is within 10°C. of the maximum allowable operating temperature of the insulation, it is desirable to use an insulation with a higher maximum allowable operating temperature; although insulation can be used in a room temperature approaching its maximum allowable operating temperature limit if the current is reduced in accordance with the table of correction factors for different room temperatures.

**Voltage Drop.** The allowable current-carrying capacities in Tables 1 and 2 are based on temperature alone and do not take voltage drop into consideration.

**Overcurrent Protection.** If the standard ratings and settings of overcurrent devices do not correspond with the ratings and settings allowed for conductors, the next higher standard rating and setting may be used, but not exceeding 150 per cent of the allowable carrying capacity of the conductor.

**Deterioration of Insulation.** It should be noted that even the best grades of rubber insulation will deteriorate in time, so eventually will need to be replaced.



**National Electrical Code Types of Insulation, Temperature Rating and Use of Various Wires and Cables for Use in Buildings**

Trade Name	Type Letter	Max. Oper. Temp.	Insulation	Outer Cover	Special Provisions and Use
Rubber-Covered Fixture Wire	RF-64	60°C. 140°F.	Code Rubber	Cotton	Fixture wiring limited to 300 volts.
Solid or Strand			Code Rubber	Cotton	{ Fixture wiring and as permitted in Section 3103-NEC. Fixture wiring limited to 300 volts.
Rubber-Covered Fixture Wire	RF-32	60°C. 140°F.	Code Rubber	Cotton	
Flexible Strand	FF-64	60°C. 140°F.	Code Rubber	Cotton	Fixture wiring.
Thermoplastic Covered Fixture Wire Solid or Stranded	TF	60°C. 140°F.	Thermoplastic	None	{ Fixture wiring and as permitted in Section 3103-NEC.
Thermoplastic Covered Fixture Wire Flexible Stranding	TFF	60°C. 140°F.	Thermoplastic	None	Fixture wiring.
Cotton Covered Heat Resistant Fixture Wire	CF	90°C. 194°F.	Impregnated Cotton	None	Fixture wiring limited to 300 volts.
Asbestos Covered Heat Resistant Fixture Wire	AF	125°C. 257°F.	Impregnated Asbestos	None	Fixture wiring limited to 300 volts.
Code Rubber	R	60°C.	Code Rubber	{ Moisture Resistant Flame Retardant Fibrous Covering Moisture Resistant Flame Retardant Fibrous Covering }	General use.
Heat Resistant	RH	75°C. 167°F.	{ Heat Resistant Rubber }		General use.
Asbestos	AA	200°C. 392°F.	Asbestos	With Asbestos Braid	{ Dry locations only. Open wiring. Not for general use. In raceways only for leads to or within apparatus limited to 300 volts.
Asbestos	AI	125°C. 257°F.	{ Impregnated Asbestos }	{ Without Asbestos Braid }	{ Dry locations only. Not for general use. In raceways only for leads to or within apparatus limited to 300 volts.
Asbestos	AIA	125°C. 257°F.	{ Impregnated Asbestos }	With Asbestos Braid	{ Dry locations only. Open wiring. Not for general use. In raceways only for leads to or within apparatus.
Paper	...	85°C. 185°F.	Paper	Lead Sheath	For underground service conductors or by special permission.
Slow Burning	SB	90°C. 194°F.	{ 3 Braids of Impreg- nated Fire Resist- ant Cotton Thread }	{ Outer Cover Finished Smooth and Hard }	{ Dry locations only. Open wiring, in raceways where temperature will exceed those permitted for rubber-covered or VC covered conductors.
Slow Burning Weatherproof	SBW	90°C. 194°F.	2 Layers Impregnated Cotton Thread	Outer Fire Retardant Coating	Dry locations only. Open wiring only.
Weatherproof	WP	80°C. 176°F.	{ At Least 3 Impregnat- ed Cotton Braids or Equivalent }	.....	{ Open wiring by special permission or when other insulations not suitable for existing conditions.
Moisture Resistant Rubber	RW	60°C. 140°F.	Moisture Resistant Rubber	{ Moisture Resistant Flame Retardant Fibrous Covering Moisture Resistant Flame Retardant Fibrous Covering }	General use in wet locations.
Latex Rubber	RU	60°C. 140°F.	90 Per Cent Unmilled Grainless Rubber		General use.
Thermoplastic	T	60°C. 140°F.	Flame Retardant Thermoplastic	None	General use.
Moisture Resistant Thermoplastic	TW	60°C. 140°F.	{ Flame Retardant Moisture Resisting Thermoplastic }	None	General use in wet locations.
Thermoplastic Asbestos	TA	90°C. 194°F.	Thermoplastic and Asbestos	{ Flame Retardant Cotton Braid Fibrous Covering on Lead Sheath }	Switchboard wiring only.
Varnished Cambric	V	85°C. 185°F.	Varnished Cambric		Dry locations only smaller than No. 6 by special permission.
Asbestos Varnished Cambric	AVA	110°C. 230°F.	{ Impregnated Asbes- tos & Varnished Cambric }	Asbestos Braid	Dry locations only.
Asbestos Varnished Cambric	AVB	90°C. 194°F.	{ Impregnated Asbes- tos & Varnished Cambric }	{ Flame Retardant Cotton Braid }	Dry locations only.
Asbestos Varnished Cambric	AVL	110°C. 230°F.	{ Impregnated Asbes- tos & Varnished Cambric }	Lead Sheath	Wet locations.
Asbestos	A	200°C. 392°F.	Asbestos	{ Without Asbestos Braid }	{ Dry locations only. Not for general use. In raceways only for leads to or within apparatus limited to 300 volts.

## Full-Load Currents of Motors

### Direct Current Motors

Hp.	N.E.C. Table 21			Hp.	N.E.C. Table 21		
	115V.	230V.	550V.		115V.	230V.	550V.
1/2	4.6	2.3	...	25	184.0	92.0	38.0
3/4	6.6	3.3	1.4	30	220.0	110.0	46.0
1	8.6	4.3	1.8	40	292.0	146.0	61.0
1 1/2	12.6	6.3	2.6	50	360.0	180.0	75.0
2	16.4	8.2	3.4	60	430.0	215.0	90.0
3	24.0	12.0	5.0	75	536.0	268.0	111.0
5	40.0	20.0	8.3	100	.....	355.0	148.0
7 1/2	58.0	29.0	12.0	125	.....	443.0	148.0
10	76.0	38.0	16.0	150	.....	534.0	220.0
15	112.0	56.0	23.0	200	.....	712.0	295.0
20	148.0	74.0	31.0	.....	.....	.....	.....

These values for full-load current are average for all speeds.

### \*Single Phase, A.C. Motors

Hp.	N.E.C. Table 22			Hp.	N.E.C. Table 22		
	115V.	230V.	440V.		115V.	230V.	440V.
1/6	3.2	1.6	...	2	24.0	12.0	....
1/4	4.6	2.3	...	3	34.0	17.0	....
1/2	7.4	3.7	...	5	56.0	28.0	....
3/4	10.2	5.1	...	7 1/2	80.0	40.0	21.0
1	13.0	6.5	...	10	100.0	50.0	26.0
1 1/2	18.4	9.2	...	.....	.....	.....	.....

For full-load currents of 208 and 200-volt motors, increase corresponding 230-volt motor full-load current by 10 and 15 per cent, respectively.

### \*Two-Phase, A.C. Motors—4 Wire

Hp.	Induction Type				Synchronous Type				
	Squirrel-Cage and Wound Rotor				Unity Power Factor				
	110V.	220V.	440V.	550V. 2300V.	220V.	440V.	550V.	2300V.	
1/2	4.0	2.0	1.0	.8	.....	.....	.....	.....	
3/4	4.8	2.4	1.2	1.0	.....	.....	.....	.....	
1	6.4	3.2	1.6	1.3	.....	.....	.....	.....	
1 1/2	8.8	4.4	2.2	1.8	.....	.....	.....	.....	
2	11.2	5.6	2.8	2.2	.....	.....	.....	.....	
3	.....	8.0	4.0	3.2	.....	.....	.....	.....	
5	.....	13.0	7.0	6.0	.....	.....	.....	.....	
7 1/2	.....	19.0	9.0	8.0	.....	.....	.....	.....	
10	.....	24.0	12.0	10.0	.....	.....	.....	.....	
15	.....	34.0	17.0	14.0	.....	.....	.....	.....	
20	.....	45.0	23.0	18.0	.....	.....	.....	.....	
25	.....	55.0	28.0	22.0	6.0	47.0	24.0	19.0	4.7
30	.....	67.0	34.0	27.0	7.5	56.0	29.0	23.0	5.7
40	.....	88.0	44.0	35.0	9.0	75.0	37.0	31.0	7.0
50	.....	108.0	54.0	43.0	11.0	94.0	47.0	38.0	9.0
60	.....	129.0	65.0	52.0	13.0	111.0	56.0	44.0	11.0
75	.....	158.0	79.0	63.0	16.0	140.0	70.0	57.0	13.0
100	.....	212.0	106.0	85.0	21.0	182.0	93.0	74.0	17.0
125	.....	268.0	134.0	108.0	26.0	228.0	114.0	93.0	22.0
150	.....	311.0	155.0	124.0	31.0	.....	137.0	110.0	26.0
200	.....	415.0	208.0	166.0	41.0	.....	182.0	145.0	35.0

### \*Three-Phase, A.C. Motors

Hp.	N.E.C. Table 24			Hp.	N.E.C. Table 24				
	110V.	220V.	440V.		110V.	220V.	440V.		
1/2	4.0	2.0	1.0	.8	.....	.....	.....		
3/4	5.6	2.8	1.4	1.1	.....	.....	.....		
1	7.0	3.5	1.8	1.4	.....	.....	.....		
1 1/2	10.0	5.0	2.5	2.0	.....	.....	.....		
2	13.0	6.5	3.3	2.6	.....	.....	.....		
3	.....	9.0	4.5	4.0	.....	.....	.....		
5	.....	15.0	7.5	6.0	.....	.....	.....		
7 1/2	.....	22.0	11.0	9.0	.....	.....	.....		
10	.....	27.0	14.0	11.0	.....	.....	.....		
15	.....	40.0	20.0	16.0	.....	.....	.....		
20	.....	52.0	26.0	21.0	.....	.....	.....		
25	.....	64.0	32.0	26.0	7.0	54.0	27.0	22.0	5.4
30	.....	78.0	39.0	31.0	8.5	65.0	33.0	26.0	6.5
40	.....	104.0	52.0	41.0	10.5	86.0	43.0	35.0	8.0
50	.....	125.0	63.0	50.0	13.0	108.0	54.0	44.0	10.0
60	.....	150.0	75.0	60.0	16.0	128.0	64.0	51.0	12.0
75	.....	185.0	93.0	74.0	19.0	161.0	81.0	65.0	15.0
100	.....	246.0	123.0	98.0	25.0	211.0	106.0	85.0	20.0
125	.....	310.0	155.0	124.0	31.0	264.0	132.0	106.0	25.0
150	.....	360.0	180.0	144.0	37.0	.....	158.0	127.0	30.0
200	.....	480.0	240.0	192.0	49.0	.....	210.0	168.0	40.0

For full-load currents of 208 and 200-volt motors, increase the corresponding 220-volt motor full-load current by 6 and 10 per cent respectively.

\*Currents are for motors running at speeds usual for belted motors and motors with normal torque characteristics. Motors built for especially low speeds or high torques may require more running current, in which case the nameplate current rating should be used.

†For 90 and 80 per cent power factor, the above figures should be multiplied by 1.1 and 1.25 respectively.

Current in common conductor of 2-Phase, 3-wire system will be 1.41 times value given.

## Motor Characteristics

### Direct-Current Motors

Direct-current motors are divided into three classes, designated according to the method of connecting the armature and field windings as shunt-series and compound-wound.

Alternating-current motors are divided into two general classes, induction and synchronous, while induction motors are of two types, designated according to the type of rotor winding as the squirrel-cage type and as the wound-rotor or slip-ring, type.

### Shunt-Wound D.C. Motors

This type of motor runs at practically constant speed, regardless of the load. It is the type most generally used in commercial practice and is usually recommended where starting conditions are not unusually severe.

Speed of shunt-wound motors may be regulated in two ways, first, by inserting resistance in series with the armature, thus decreasing the speed; and second, by inserting resistance in the field circuit, thereby increasing the speed. In the former case, the speed will vary with each change in load; in the latter, the speed is practically constant for any setting of the controller. The latter is most generally used for adjustable-speed service, as in the case of machine tools.

### Series-Wound D.C. Motors

This type of motor speed varies automatically with the load, increasing as the load decreases. Use of series motors is generally limited to cases where a heavy power demand is necessary to bring the machine up to speed, as in the case of certain elevator and hoist installations, for streetcars, etc. Series-wound motors should never be used where the motor can be started without load, since they will race to a dangerous degree.

### Compound-Wound D.C. Motors

A combination of the shunt-wound and series-wound types combines the characteristics of both. Characteristics may be varied by varying the combination of the two windings.

Generally used where severe starting conditions are met and constant speed is required at the same time.

### Squirrel-Cage Induction Motors

The most simple and reliable of all electric motors. Essentially a constant speed machine, which is adaptable for uses under all but the most severe starting conditions. Requires little attention as there are no commutator or slip rings, yet operates with good efficiency.

### Wound-Rotor (Slip-Ring) Induction Motors

Used for constant-speed service requiring a heavier starting torque than is obtainable with the squirrel-cage type. Because of its lower starting current, this type is frequently used instead of the squirrel-cage type in the larger sizes.

Wound-rotor motors are also used for varying-speed service. Speed varies with this load, so that they should not be used where constant speed at each adjustment is required, as for machine tools.

### Single-Phase Induction Motors

This motor is used, mostly in small sizes, where polyphase current is not available. Characteristics are not as good as the polyphase motor and for sizes larger than 10 hp., the line disturbance is likely to be objectionable. Are commonly used for light starting and for running loads up to 1/2 hp. Capacitor and repulsion types provide greater torque and are built in sizes up to 10 hp.

### Synchronous Motors

Run at a constant speed fixed by frequency of the system.

Require direct current for excitation and have low starting torque. For large motor-generator sets, frequency changers, air compressors, and similar apparatus which permits starting under a light load, for which they are generally used.

Are used with considerable advantage, particularly on large power systems, because of their inherent ability to improve the power factor of the system.

Wiring for D.C. Motor Services

Comparison of Wire Gauges

Carrying Capacity Copper Wire

Size B. & S.	Diameter Inches	Pounds Bare Copper per 1000 Feet	Carrying Capacity Rubber Insulation Amperes
14	.064	12.4	15
12	.081	19.7	20
10	.102	31.4	24
8	.128	49.9	33
6	.162	79.4	46
4	.204	126	65
3	.229	159	76
2	.258	201	90
1	.289	253	107
0	.325	319	127
00	.365	402	150
000	.410	507	177
0000	.460	640	210

OWING to the different systems of gauge numbers used in connection with the various materials that we handle, we deem it of prime importance to give a table showing the values (or thicknesses) of the gauges most commonly referred to. While material can usually be made according to any gauge system, custom has dictated usages, a few of which are mentioned below.

Band and hoop iron or steel and tank steel plates are rolled to Birmingham Wire Gauge.

Sheet steel is rolled to U. S. Standard Gauge.

Steel wire (except telephone and telegraph) is drawn to Washburn & Moen Gauge, but is used by most wire makers under their own name.

Steel or iron telephone and telegraph wire is generally drawn to Birmingham Wire Gauge.

Copper wire is drawn to Brown & Sharpe's Gauge.

Sheet copper, brass, bronze and German silver are rolled to Brown & Sharpe's Gauge.

Sheet zinc is rolled according to a "zinc gauge," and is used by sheet zinc manufacturers under their own names.

Transmission of Horse Powers with 1 Volt Loss

Horse Power at 110V.	Horse Power at 220V.	Horse Power at 500V.	Load of Motor Amps.	Distance in Feet Different Horse Powers Can Be Transmitted With 1 Volt Loss					
				1	2	3	4	5	6
1/2	1	1	192	308	490	778	1232	1920	
1/2	1	2	96	154	245	389	616	960	
1/2	2	3	83	135	213	348	535	834	
1/2	2	4	48	77	122	194	308	480	
1/2	3	5	43	68	108	173	273	426	
1	4	6	32	51	81	127	205	320	
1	4	7	25	40	65	104	164	258	
1	5	8	21	34	54	86	137	213	
1	5	9	20	33	53	84	132	206	
1	6	10	12	15	24	40	61	100	
1	6	11	16	15	18	29	47	76	
1	7	12	18	15	20	27	43	68	
1	7	13	21	10	23	37	58	91	
1	8	14	25	10	20	30	50	76	
1	8	15	28	20	27	43	68	106	
1	9	16	33	15	23	37	58	91	
1	9	17	37	15	23	37	58	91	
1	10	18	42	15	23	37	58	91	
1	10	19	49	15	23	37	58	91	
1	11	20	56	15	23	37	58	91	
1	11	21	66	15	23	37	58	91	
1	12	22	75	15	23	37	58	91	
1	12	23	82	15	23	37	58	91	
1	13	24	94	15	23	37	58	91	
1	13	25	107	15	23	37	58	91	
1	14	26	121	15	23	37	58	91	
1	14	27	136	15	23	37	58	91	
1	15	28	152	15	23	37	58	91	
1	15	29	169	15	23	37	58	91	
1	16	30	187	15	23	37	58	91	
1	16	31	206	15	23	37	58	91	
1	17	32	226	15	23	37	58	91	
1	17	33	247	15	23	37	58	91	
1	18	34	269	15	23	37	58	91	
1	18	35	292	15	23	37	58	91	
1	19	36	316	15	23	37	58	91	
1	19	37	341	15	23	37	58	91	
1	20	38	367	15	23	37	58	91	
1	20	39	394	15	23	37	58	91	
1	21	40	422	15	23	37	58	91	
1	21	41	451	15	23	37	58	91	
1	22	42	481	15	23	37	58	91	
1	22	43	512	15	23	37	58	91	
1	23	44	544	15	23	37	58	91	
1	23	45	577	15	23	37	58	91	
1	24	46	611	15	23	37	58	91	
1	24	47	646	15	23	37	58	91	
1	25	48	682	15	23	37	58	91	
1	25	49	719	15	23	37	58	91	
1	26	50	757	15	23	37	58	91	
1	26	51	796	15	23	37	58	91	
1	27	52	836	15	23	37	58	91	
1	27	53	877	15	23	37	58	91	
1	28	54	919	15	23	37	58	91	
1	28	55	962	15	23	37	58	91	
1	29	56	1006	15	23	37	58	91	
1	29	57	1051	15	23	37	58	91	
1	30	58	1097	15	23	37	58	91	
1	30	59	1144	15	23	37	58	91	
1	31	60	1192	15	23	37	58	91	
1	31	61	1241	15	23	37	58	91	
1	32	62	1291	15	23	37	58	91	
1	32	63	1342	15	23	37	58	91	
1	33	64	1394	15	23	37	58	91	
1	33	65	1447	15	23	37	58	91	
1	34	66	1501	15	23	37	58	91	
1	34	67	1556	15	23	37	58	91	
1	35	68	1612	15	23	37	58	91	
1	35	69	1669	15	23	37	58	91	
1	36	70	1727	15	23	37	58	91	
1	36	71	1786	15	23	37	58	91	
1	37	72	1846	15	23	37	58	91	
1	37	73	1907	15	23	37	58	91	
1	38	74	1969	15	23	37	58	91	
1	38	75	2032	15	23	37	58	91	
1	39	76	2096	15	23	37	58	91	
1	39	77	2161	15	23	37	58	91	
1	40	78	2227	15	23	37	58	91	
1	40	79	2294	15	23	37	58	91	
1	41	80	2362	15	23	37	58	91	
1	41	81	2431	15	23	37	58	91	
1	42	82	2501	15	23	37	58	91	
1	42	83	2572	15	23	37	58	91	
1	43	84	2644	15	23	37	58	91	
1	43	85	2717	15	23	37	58	91	
1	44	86	2791	15	23	37	58	91	
1	44	87	2866	15	23	37	58	91	
1	45	88	2942	15	23	37	58	91	
1	45	89	3019	15	23	37	58	91	
1	46	90	3097	15	23	37	58	91	
1	46	91	3176	15	23	37	58	91	
1	47	92	3256	15	23	37	58	91	
1	47	93	3337	15	23	37	58	91	
1	48	94	3419	15	23	37	58	91	
1	48	95	3502	15	23	37	58	91	
1	49	96	3586	15	23	37	58	91	
1	49	97	3671	15	23	37	58	91	
1	50	98	3757	15	23	37	58	91	
1	50	99	3844	15	23	37	58	91	
1	51	100	3932	15	23	37	58	91	
1	51	101	4021	15	23	37	58	91	
1	52	102	4111	15	23	37	58	91	
1	52	103	4202	15	23	37	58	91	
1	53	104	4294	15	23	37	58	91	
1	53	105	4387	15	23	37	58	91	
1	54	106	4481	15	23	37	58	91	
1	54	107	4576	15	23	37	58	91	
1	55	108	4672	15	23	37	58	91	
1	55	109	4769	15	23	37	58	91	
1	56	110	4867	15	23	37	58	91	
1	56	111	4966	15	23	37	58	91	
1	57	112	5066	15	23	37	58	91	
1	57	113	5167	15	23	37	58	91	
1	58	114	5269	15	23	37	58	91	
1	58	115	5372	15	23	37	58	91	
1	59	116	5476	15	23	37	58	91	
1	59	117	5581	15	23	37	58	91	
1	60	118	5687	15	23	37	58	91	
1	60	119	5794	15	23	37	58	91	
1	61	120	5902	15	23	37	58	91	
1	61	121	6011	15	23	37	58	91	
1	62	122	6121	15	23	37	58	91	
1	62	123	6232	15	23	37	58	91	
1	63	124	6344	15	23	37	58	91	
1	63	125	6457	15	23	37	58	91	
1	64	126	6571	15	23	37	58	91	
1	64	127	6686	15	23	37	58	91	
1	65	128	6802	15	23	37	58	91	
1	65	129	6919	15	23	37	58	91	
1	66	130	7037	15	23	37	58	91	
1	66	131	7156	15	23	37	58	91	
1	67	132	7276	15	23	37	58	91	
1	67	133	7397	15	23	37	58	91	
1	68	134	7519	15	23	37	58	91	
1	68	135	7642	15	23	37	58	91	
1	69	136	7766	15	23	37	58	91	
1	69	137	7891	15	23	37	58	91	
1	70	138	8017	15	23	37	58	91	
1	70	139	8144	15	23	37	58	91	
1	71	140	8272	15	23	37	58	91	
1	71	141	8401	15	23	37	58	91	
1	72	142	8531	15	23	37	58	91	
1	72	143	8662	15	23	37	58	91	
1	73	144	8794	15	23	37	58	91	
1	73	145	8927	15	23	37	58	91	
1	74	146	9061	15	23	37	58	91	
1	74	147	9196	15	23	37	58	91	
1	75	148	9332	15	23	37	58	91	
1	75	149	9469	15	23	37	58	91	
1	76	150	9607	15	23	37	58	91	
1	76	151	9746	15	23	37	58	91	
1	77	152	9886	15	23	37	58	91	
1	77	153	10027	15	23	37	58	91	
1	78	154	10169	15	23	37	58	91	
1	78	155	10312	15	23	37	58	91	
1	79	156	10456	15	23	37	58	91	
1	79	157	10601	15	23	37	58	91	
1	80	158							



## Physical Properties of Various Metals

Name of Substance	Physical Condition or Composition of Substance	Resistance in Ohms per Cir. Mil. Foot at 68°F.
Copper	Annealed	10.4
Platinum	Pure	57.4
German Silver	18% Copper-Nickel-Zinc	200
German Silver	30% Copper-Nickel-Zinc	290
Ia Ia Soft	Copper-Nickel	283
Advance	Copper-Nickel	294
Constantin	Copper-Nickel	300
Ideal	Copper-Nickel	300
Krupp	Nickel-Steel	511
Superior	Nickel-Steel	517
Climax	Nickel-Steel	525
Phenix	Nickel-Steel	520
Excello	Nickel-Chromium	550
Nichrome	Nickel-Chromium	600
Calido	Nickel-Chromium	600
Nichrome II	Nickel-Chromium	655
Calorite	Nickel-Chromium	720
Carbon	Retort	4325
Graphite	Acheson	4875
Carb. Filament	Treated	6950

Name of Substance	Temperature Coefficient of Resistivity for 1°F.	Specific Gravity	Approx. Working Temp. in Deg. F.	Approx. Melting Point in Deg. F.
Copper	0.00393	8.89	500	1980
Platinum	0.00204	21.5	2700	3190
German Silver	0.000172	8.5	500	1880
German Silver	0.000111	8.5	2120	2120
Ia Ia Soft	0.0000278	8.4	700	2250
Advance	Nil	8.9	700	2300
Constantin	0.0000278	8.6	700	2200
Ideal	0.00001	8.85	700	2200
Krupp	0.00039	8.10	1100	2200
Superior	0.00045	8.4	1000	2400
Climax	0.0004	8.14	1000	2300
Phenix	0.0003	8.09	1000	2100
Excello	0.00009	8.9	2000	3000
Nichrome	0.00024	8.15	2200	2800
Calido	0.00019	8.15	2000	2800
Nichrome II	0.00009	8.02	2000	2860
Calorite	Not Constant	1.8	1600	2370
Carbon	Not Constant	2.2	6000	6700
Graphite	Not Constant	2.2	6000	6700
Carb. Filament	Not Constant	2.2	3500	6700

## Properties of Steel Wire

### Weight, Length and Strength

No. Roeb-ling Gauge	Diam. Inches	Area Square Inches	Breaking Strength 100,000 Lbs. per Sq. Inch	WEIGHT IN LBS.		Feet in 2000 Pounds
				Per 1000 Ft.	Per Mile	
6-0	.460	.166190	16619	558.4	2948	3582
5-0	.430	.145220	14522	487.9	2576	4099
4-0	.393	.121304	12130	407.6	2152	1907
3-0	.362	.102922	10292	345.8	1826	5783
2-0	.331	.086049	8605	289.1	1527	6917
0	.307	.074023	7402	248.7	1313	8041
1	.283	.062902	6290	211.4	1116	9463
2	.263	.054325	5433	182.5	964	10957
3	.244	.046760	4676	157.1	830	12730
4	.225	.039761	3976	133.6	705	14970
5	.207	.033654	3365	113.1	597	17687
6	.192	.028953	2895	97.3	514	20559
7	.177	.024606	2461	82.7	437	24191
8	.162	.020612	2061	69.3	366	28878
9	.148	.017203	1720	57.8	305	34600
10	.135	.014314	1431	48.1	254	41584
11	.120	.011310	1131	38.0	201	52631
12	.105	.008659	866	29.1	154	68752
13	.092	.006648	665	22.3	118	89525
14	.080	.005027	503	16.9	89.2	118413
15	.072	.004072	407	13.7	72.2	146198
16	.063	.003117	312	10.5	55.3	191022
17	.054	.002290	229	7.70	40.6	259909
18	.047	.001735	174	5.83	30.8	343112
19	.041	.001320	132	4.44	23.4	450856
20	.035	.000962	96	3.23	17.1	618620
21	.032	.000804	80	2.70	14.3	740193
22	.028	.000616	62	2.07	10.9	966651
23	.025	.000491	49	1.65	8.71	124113
24	.023	.000415	42	1.40	7.37	151613
25	.020	.000314	31	1.06	5.58	191022
26	.018	.000254	25	.855	4.51	24191
27	.017	.000227	23	.763	4.03	30180
28	.016	.0002011	20	.676	3.57	37170
29	.015	.0001767	18	.594	3.14	45160
30	.014	.0001539	15	.517	2.73	54150
31	.0135	.0001431	14	.481	2.54	63140
32	.013	.0001327	13	.446	2.36	73130
33	.011	.0000950	9.5	.319	1.69	83120
34	.010	.0000785	7.9	.264	1.39	93110
35	.0095	.0000709	7.1	.238	1.26	103100
36	.0090	.0000636	6.4	.214	1.13	113100

## Wire Gage Standards

Wire Gage No.	DECIMAL PARTS OF AN INCH					
	American or Brown & Sharpe Gage	Birmingham or Stubs' Wire Gage	Washburn & Moen Steel Wire Gage	American S. & W. Co's Music Wire Gage	Imperial Wire Gage	U.S. Standard for Plate Gage
0000000	.651354	...	.4900	...	.500	500
000000	.580049	...	.4615	.004	.464	46875
00000	.516549	.500	.4305	.005	.432	4375
0000	.460	.454	.3938	.006	.400	40625
000	.40964	.425	.3625	.007	.372	375
00	.3648	.380	.3310	.008	.348	34375
0	.32486	.340	.3065	.009	.324	3125
1	.2893	.300	.2830	.010	.300	227
2	.25763	.284	.2625	.011	.276	219
3	.22942	.259	.2437	.012	.252	212
4	.20431	.238	.2253	.013	.232	207
5	.18194	.220	.2070	.014	.212	204
6	.16202	.203	.1920	.016	.192	201
7	.14428	.180	.1770	.018	.176	199
8	.12849	.165	.1620	.020	.160	197
9	.11443	.148	.1483	.022	.144	194
10	.10189	.134	.1350	.024	.128	191
11	.090742	.120	.1205	.026	.116	188
12	.080808	.109	.1055	.029	.104	185
13	.071961	.095	.0915	.031	.092	182
14	.064084	.083	.0800	.033	.080	180
15	.057068	.072	.0720	.035	.072	178
16	.05082	.065	.0625	.037	.064	175
17	.045257	.058	.0540	.039	.056	172
18	.040303	.049	.0475	.041	.048	168
19	.03589	.042	.0410	.043	.040	164
20	.031961	.035	.03+8	.045	.036	161
21	.028462	.032	.0317	.047	.032	157
22	.025347	.028	.0286	.049	.028	155
23	.022571	.025	.0258	.051	.024	153
24	.0201	.022	.0230	.055	.022	151
25	.0179	.020	.0204	.059	.020	148
26	.01594	.018	.0181	.063	.018	146
27	.014195	.016	.0173	.067	.0164	143
28	.012641	.014	.0162	.071	.0149	139
29	.011257	.013	.0150	.075	.0136	134
30	.010025	.012	.0140	.080	.0124	127
31	.008928	.010	.0132	.085	.0116	120
32	.00795	.009	.0128	.090	.0108	115
33	.00708	.008	.0118	.095	.0100	112
34	.006304	.007	.0104	...	.0092	110
35	.005614	.005	.0095	...	.0084	108
36	.005	.004	.0090	...	.0076	106
37	.004453	...	.0085	...	.0068	103
38	.003965	...	.080	...	.0060	101

This table was calculated on a basis of 483.84 pounds per cubic foot for steel wire. Iron wire is a trifle lighter.

The breaking strengths are calculated for 100,000 pounds per square inch throughout, simply for convenience, so that the breaking strength of wires of any strength per square inch may be quickly determined by multiplying the values given in the tables by the ratio between the strength per square inch and 100,000. Thus, a No. 15 wire, with a strength per square inch of 150,000 pounds, has a breaking strength of

$$407 \times \frac{150,000}{100,000} = 610.5 \text{ pounds.}$$

## Bus Bar Copper Data

Thick-ness In.	Width In.	Wt. per Lin. Ft. Pounds	CARRYING CAPACITY		Thick-ness In.	Width In.	Wt. per Lin. Ft. Pounds	CARRYING CAPACITY	
			@1000 Amps.	@800 Amps.				@1000 Amps.	@800 Amps.
1/16	1/2	121	31	25	1/4	1	.964	250	200
1/16	3/4	181	47	38	1/4	1 1/4	1.21	313	250
1/16	1	241	63	50	1/4	1 1/2	1.45	375	300
1/8	1 1/2	241	63	50	1/4	1 3/4	1.69	438	350
1/8	3/4	362	94	75	1/4	2	1.93	500	400
1/8	1	.482	125	100	1/4	2 1/2	2.41	625	500
1/8	1 1/4	.603	156	125	1/4	3	2.89	750	600
1/8	1 1/2	.723	188	150	3/8	1	1.45	375	300
1/8	1 3/4	.844	219	175	3/8	1 1/4	1.81	469	375
1/8	2	.964	250	200	3/8	1 1/2	2.17	563	450
1/8	2 1/2	1.21	313	250	3/8	1 3/4	2.53	657	525
1/8	3	1.45	375	300	3/8	2	2.89	750	600
1/4	1 1/2	.482	125	100	3/8	2 1/2	3.62	938	750
1/4	3/4	.723	188	150	3/8	3	4.34	1125	900

# Decimal Equivalents

$\frac{1}{64}$		.015625	$\frac{33}{64}$		.515625
$\frac{3}{64}$	$\frac{1}{32}$	.03125	$\frac{35}{64}$	$\frac{17}{32}$	.53125
		.046875			.546875
	$\frac{1}{16}$	.0625		$\frac{9}{16}$	.5625
$\frac{5}{64}$		.078125	$\frac{37}{64}$		.578125
	$\frac{3}{32}$	.09375		$\frac{19}{32}$	.59375
$\frac{7}{64}$		.109375	$\frac{39}{64}$		.609375
	$\frac{1}{8}$	.125		$\frac{5}{8}$	.625
$\frac{9}{64}$		.140625	$\frac{41}{64}$		.640625
	$\frac{5}{32}$	.15625		$\frac{21}{32}$	.65625
$\frac{11}{64}$		.171875	$\frac{43}{64}$		.671875
	$\frac{3}{16}$	.1875		$\frac{11}{16}$	.6875
$\frac{13}{64}$		.203125	$\frac{45}{64}$		.703125
	$\frac{7}{32}$	.21875		$\frac{23}{32}$	.71875
$\frac{15}{64}$		.234375	$\frac{47}{64}$		.734375
	$\frac{1}{4}$	.25		$\frac{3}{4}$	.75
$\frac{17}{64}$		.265625	$\frac{49}{64}$		.765625
	$\frac{9}{32}$	.28125		$\frac{25}{32}$	.78125
$\frac{19}{64}$		.296875	$\frac{51}{64}$		.796875
	$\frac{5}{16}$	.3125		$\frac{13}{16}$	.8125
$\frac{21}{64}$		.328125	$\frac{53}{64}$		.828125
	$\frac{11}{32}$	.34375		$\frac{27}{32}$	.84375
$\frac{23}{64}$		.359375	$\frac{55}{64}$		.859375
	$\frac{3}{8}$	.375		$\frac{7}{8}$	.875
$\frac{25}{64}$		.390625	$\frac{57}{64}$		.890625
	$\frac{13}{32}$	.40625		$\frac{29}{32}$	.90625
$\frac{27}{64}$		.421875	$\frac{59}{64}$		.921875
	$\frac{7}{16}$	.4375		$\frac{15}{16}$	.9375
$\frac{29}{64}$		.453125	$\frac{61}{64}$		.953125
	$\frac{15}{32}$	.46875		$\frac{31}{32}$	.96875
$\frac{31}{64}$		.484375	$\frac{63}{64}$		.984375
	$\frac{1}{2}$	.5		$1$	1.



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