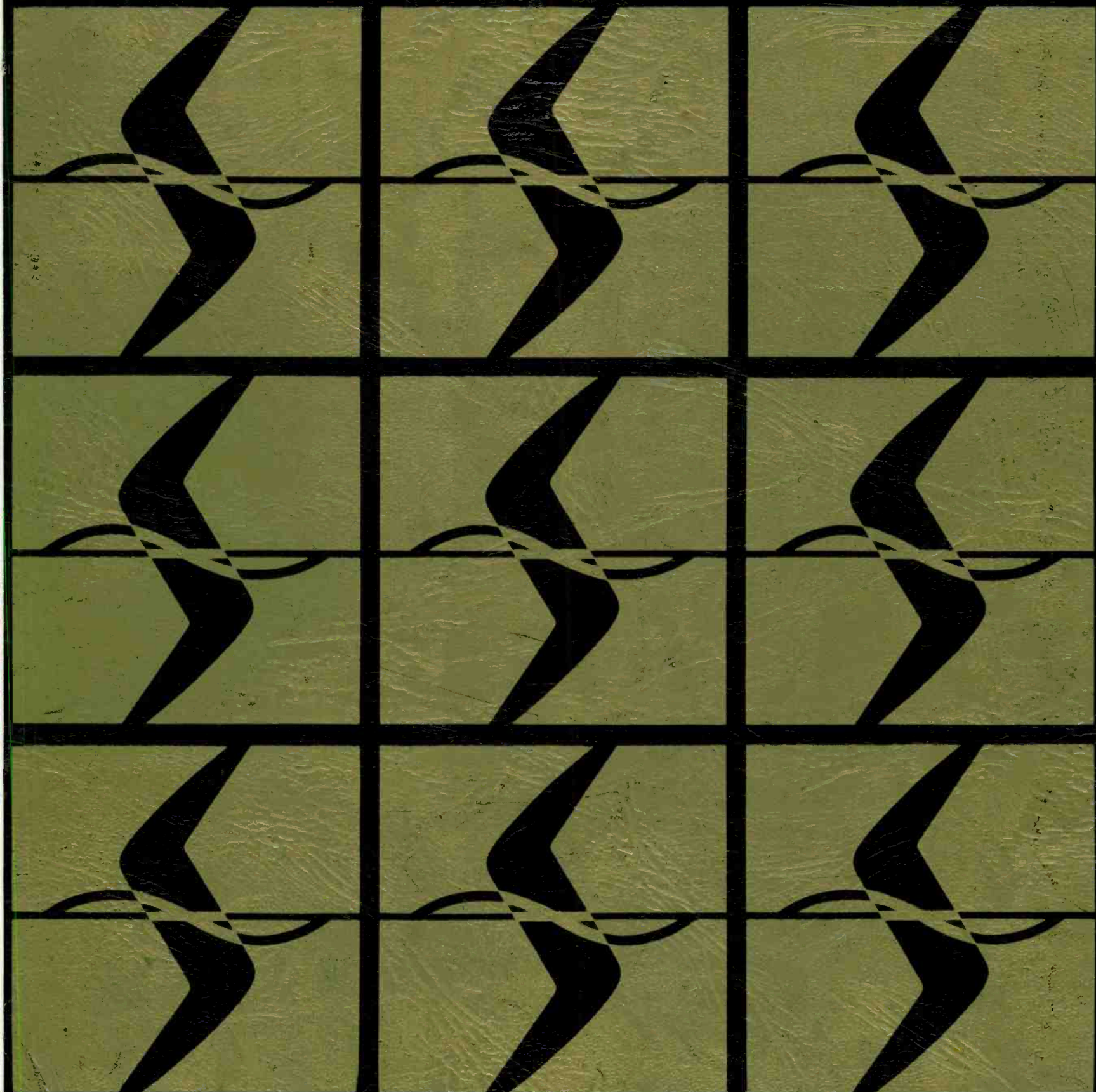


SHURE

PROFESSIONAL PRODUCTS

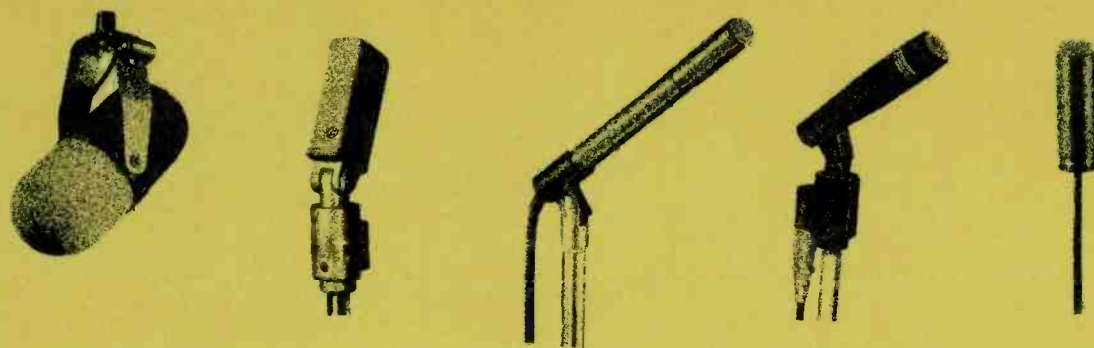




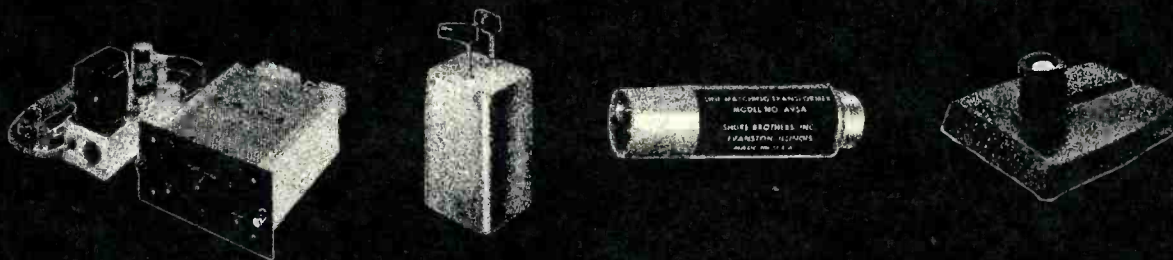
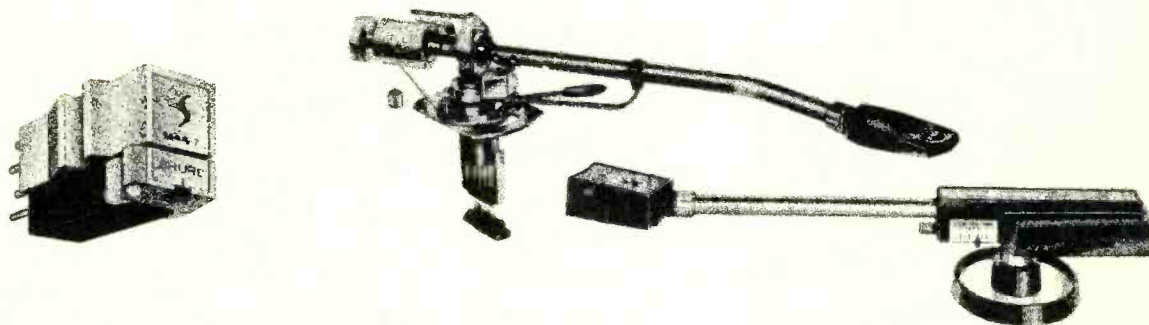
technical data for

SHURE

PROFESSIONAL PRODUCTS



MICROPHONES



For Your Information on other Shure Products

For further information contact: R. W. Carr, Manager
Professional Products Division
Shure Brothers, Incorporated
222 Hartrey Avenue, Evanston, Illinois
Phone: DA 8-9000





June, 1971

TROUBLE-FREE - TIME-SAVING

"INSTANT-USAGE" MICROPHONES!

Announcing ...

A new series of four Shure microphones that can be removed from their boxes and plugged directly into the input of most low impedance amplifiers and mixers without having to do anything to the microphones!

These "instant-usage" microphones come equipped with professional three-pin audio connectors prewired onto both the microphone and amplifier ends of the cables. These connectors are designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series, or equivalent connectors. These new microphones are perfectly suited for use with:

- . VA302 and VA304 Vocal Master Systems
- . M68FC Microphone Mixers
- . M67 Professional Microphone Mixers
- . The New M688 Stereo Mixers

The New Models and Their Prices are as follows:

	<u>Model No.</u>	<u>Impedance</u>	<u>List Price</u>	<u>Net Price</u>	<u>60%</u>	<u>60-10%</u>
Unidyne IV	548SD-CN	Dual*	\$125.00	\$75.00	\$50.00	\$45.00
Unisphere I	565SD-CN	Dual*	118.00	70.80	47.20	42.48
Unidyne III	545SD-CN	Dual*	107.00	64.20	42.80	38.52
Unisphere B	588SB-CN	Low Only	70.00	42.00	28.00	25.20

* Shipped with impedance set in "Low" position.

The Model C50CN 20-foot Replacement Cable is available for use with all of the above microphones. This replacement cable makes a handy 20-foot microphone extension cable since it comes prewired with male and female professional three-pin audio connectors already attached and ready for "instant usage."
List Price: \$27.00 60% Net: \$10.80

These New "Instant-Usage" Microphones are going to be Top Sellers because:

1. They eliminate the need to obtain and attach the connector to the amplifier end of the cable.
2. The cable is 20 feet long.
3. All models will be shipped in the low impedance position.

(Please see next page.)



4. These basic models are the fastest-selling Shure microphones.
5. These models "plug in" directly to the Shure Vocal Master Console (VA302-C) and Mixers (M67, M68FC, and M688).

As you know, many commercial sound people prefer to carry their microphones wired for low impedance, but on occasion find the need to match a high impedance input. To facilitate ease of installation (without the necessity of intermediate steps to solder and assemble connectors), the use of one of the new "CN" microphones and an A95FP Line Matching Transformer will provide a quick, easy method of matching a high impedance input. All the user has to do is simply remove the components from the box, plug them in, and turn on the system.

This new series provides unparalleled convenience for you and your customers ... and will help you maximize your sales and profits since no time is spent preparing the microphones for use. These models are in stock. Order YOURS now!



R. W. Ponto
Sales Manager

RWP:IR

P.S. Special Introductory Offer: All orders for Models 548SD-CN, 565SD-CN, 545SD-CN, and 588SB-CN, regardless of quantity, received through August 20, 1971, will receive the maximum discount of 60-10%.

MICROPHONES

SHURE

COMMUNICATIONS: MOBILE; BASE STATION
DISPATCHING
PAGING
AMATEUR & CB



MORE SHURE MOBILE AND FIXED STATION MICROPHONES ARE
USED IN PROFESSIONAL INSTALLATIONS THAN ALL OTHER
MAKES COMBINED

1968

CONTROLLED MAGNETIC "404" SERIES ... THE STANDARD OF THE INDUSTRY

Without a doubt, the strongest and most practical close-talking microphone for ANY mobile application. It is the most widely used mobile microphone among police, taxicab and fleet truck operators. Exclusive ARMO-DUR™ case is comfortable to hold in hot or cold weather ... is immune to oil, grease, fumes, sun, salt, spray, rust and corrosion ... outstanding in its ability to withstand mechanical shocks and vibration. The rugged war-time proved, Shure-patented Controlled Magnetic cartridge has specially tailored response for high speech intelligibility. Lightweight ... easy to use ... fits snugly in the palm of the hand. "Million-cycle" leaf-type switch controls the microphone circuit and an external relay or switching circuit. Fully shielded against electric and magnetic fields. Only 3¹/₁₆" high, 2⁵/₁₆" wide, 1¹⁵/₁₆" deep. Includes built-in "lifetime" hang-up button and mounting bracket. Semi-directional.

Model 405T (only) has a built-in transistorized amplifier for improvement-replacement of most carbon microphones. Does not require batteries or extra power supplies. Provides greater clarity, and freedom from aging (common to carbon microphones).



SPECIFICATIONS

Model	Frequency Response	Output Level	Impedance	Cable Type	Switch Mic. Circ.	Relay Circ.	List Price
404B	400-4,000 Hz	-52.0 db (0 db = 1 milliwatt per 10 microbars); .21 millivolts/microbar	150-250 Ohms	5½ ft. coiled cord, copper, 4 conductor (2 shielded)	Open*	Open	\$33.00
404C	400-4,000 Hz	-54.0 db (0 db = 1 volt per 100 microbars); 2.0 millivolts/microbar	High (Recommended Load, 100,000 ohms or more)	5½ ft. coiled cord, copper, 3 conductor (1 shielded)	Closed**	Open	\$33.00
405T***	400-4,000 Hz	-1 db loaded with 500 ohms (0 db = 1 volt per 100 microbars)	100-500 ohms (Carbon Circuit)	5 ft. extended 4 conductor stranded —coiled cord	—	Open	\$48.50

*Provision for simple change to normally closed. **Provision for simple change to normally open. ***Transistorized for direct replacement of carbon microphones.

A DOZEN GOOD REASONS WHY THE 404 SERIES IS YOUR BEST BUY IN MOBILE COMMUNICATIONS MICROPHONES

- 1. World Famous "Controlled Magnetic Cartridge"**—Field-proved throughout the world under extreme conditions of military and commercial use.
- 2. Corrosion Proof "Armo-Dur" Housing**—Immune to severe weather conditions. Unaffected by corrosive materials normally encountered or used: oils, grease, fumes, salt spray, etc.
- 3. High Impact "Armo-Dur" Housing**—Has high elasticity limits. Resists extreme mechanical shocks and retains original shape.
- 4. Constant Impact Strength**—Withstands mechanical shocks under varying conditions of temperature — with uniform impact resistance. (Varies only 25% in impact strength through a range running from -40° to 165° fahrenheit — as compared to a variance of 95% for standard die-cast housings.)
- 5. Eliminates Shock Hazard**—Special "Armo-Dur" housing is an insulator — eliminates electrical shock hazard.
- 6. Reduces Operator Fatigue**—Under actual operating conditions, the complete microphone (including plug and cable) weighs only 8

oz., 42.9% less than similar die-cast microphones. The net weight of the microphone, plug, and cable is 12 oz., 33.3% less than similar die-cast microphones.

- 7. No Vibration Fatigue**—"Armo-Dur" eliminates shattering, breaking or cracking of housing often caused by continuous vibrations.
- 8. Color Permanence**—Color runs throughout the "Armo-Dur" housing. It is unaffected by handling, sun and corrosive fumes or materials which are normally encountered or used.
- 9. Low Thermal Conductivity**—Feels normal to the hand in extreme heat or cold.
- 10. "Life-Time" Hang-Up Button**—Unique shock mounting prevents button "pull out".
- 11. Fully Shielded**—A high permeability shield and the vacuum metalizing on "Armo-Dur" case provide effective shielding against electro-static and magnetic fields.
- 12. No Sacrifice of Quality For Price**—Rigid laboratory and field tests on every component insures long-life trouble-free service.

HERE'S PROOF OF ITS RUGGEDNESS

... dragged behind swiftly moving autos:

It is estimated that the Model 404 Microphone withstood over 35,000 separate shock-impacts during a 3.3 mile test drive at a speed ranging from 20 to 30 miles per hour. This is far greater punishment than would ever be required of a microphone in a lifetime of abnormally severe handling.

COMMUNICATIONS MICROPHONES

MODEL 414 SERIES RANGER II SMALL IN SIZE, FOR GREATER HANDABILITY

About half the size and weight of conventional mobile communications microphones, yet they perform as well as or better than the "big boys." More comfortable to hold—especially for smaller hands or when wearing heavy gloves. Only 8 oz., 2 $\frac{7}{8}$ " high, 2 $\frac{1}{16}$ " wide, 1 $\frac{3}{4}$ " deep. Ideal for miniaturized or portable communications systems. Saves space on crowded dashboards. Controlled Magnetic cartridge with specially tailored response for maximum intelligibility. Rugged, impact-resistant Armo-Dur case (see Page 2), DPST "million-cycle" switch controls microphone and relay switch circuits. Neoprene jacketed coil cord with Flex-Relief cable connection. With lifetime hang-up button and mounting bracket. U.S. Patent D203,187

Model 414C (only) has a built-in transistorized amplifier for improvement-replacement of most carbon microphones. Does not require batteries or extra power supplies. Provides greater clarity and freedom from aging (common to carbon microphones).



SPECIFICATIONS

Model	Frequency Response	Output Level	Impedance	Cable Type	Switch Mic. Circ.	Relay Circ.	List Price
414A	400-4,000 Hz	-14.5 db (0 db = 1 volt per 100 microbars) 2.0 millivolts/microbar	High—Recommended load (100,000 ohms or more)	5 $\frac{1}{2}$ ft., coiled cord, 3-cond., (one shielded)	Closed	Open	\$33.00
414B	400-4,000 Hz	-52.5 db (0 db = 1 milliwatt per 10 microbars) .20 millivolts/microbar	150-250 ohms	5 $\frac{1}{2}$ ft. coiled cord, 4-cond. (two shielded)	Open	Open	\$33.00
414C	400-4,000 Hz	-1.5 db or .85 volt using 6 volts d.c. and 500 ohm load. (0 db = 1 volt per 100 microbars)	100-1000 ohms	5 $\frac{1}{2}$ ft. 4-cond. coil cord	Open	Open	\$48.50

MODELS 405K AND 418A CONTROLLED MAGNETIC MICROPHONES

Designed for clear, crisp, natural voice response of high intelligibility. The 405K and 418A Series Communication Hand Microphones are pressure-actuated units using the Shure developed balanced-armature Controlled Magnetic Cartridge.

Model 405K—High impedance (14,000 ohms). Output level, -14 db (0 db = 1 volt per 100 microbars). Direct replacement for General Electric models

EM10A1, EM10A2, EM10B2, EM10D, EM10E, EM25A, EM25E and for use with "Progress Line" mobile radio equipment. . . List Price: **\$37.50**

Model 418A—Medium impedance (1,500 ohms). Output level, -22.5 db (0 db = 1 volt per 100 microbars). Direct replacement for General Electric models EM18A, EM18B, EM18C, EM18D, and for use with "Transistorized Progress Line" Equipment (TPL). May be used with or without "Channel Guard." List Price: **\$37.50**



MODEL 104 SERIES CARBON MICROPHONES

Featuring gray "Armo-Dur" high-impact, corrosion-proof cases. Used throughout the world for police, taxi, bus, truck and commercial two-way radio applications. They fit naturally and comfortably in the palm of the hand. Light, compact and rugged—with a reputation for long-life, trouble-free performance under severe operating conditions. Includes lifetime hang-up button and mounting bracket.



SPECIFICATIONS

Frequency Response: 300 to 4,000 Hz, "tailored"

Output Level: 5 db below 1 volt for 100 microbar speech signal

Impedance: Recommended load — 50 to 100 ohms

Cable: Cadmium copper coiled cord

Switch: Model 104A — DPST normally open switch to control microphone and relay. Model 104B — SPST normally open relay switch (no microphone switch)

Dimensions & Weight: 3 $\frac{1}{16}$ " high, 2 $\frac{3}{8}$ " wide, 1 $\frac{1}{16}$ " deep; 18 oz.

List Price: Model 104A \$30.00; Model 104B \$30.00

SHURE PROFESSIONAL MOBILE TELEPHONE HANDSET

MODEL TH-100 TO UPGRADE YOUR MOBILE COMMUNICATIONS RIG

Ingenious, professional-quality handset improves industrial, commercial, CB and Ham transceiver performance. Incorporates Shure's famous, patented, combat-proved Controlled Magnetic microphone cartridge for maximum intelligibility in transmission. When receiving, handset rejects outside noises, improves reception quality, gives you increased privacy. And, when the handset is in its cradle, you hear in-

coming signals through your regular loudspeaker. "Million-Cycle" built-in handle switch controls transmitter circuits. Also, it is possible to incorporate a side-tone in the handset receiver when talking or transmitting. Rugged "Armo-Dur" case will take years of use and abuse. Can be used with any high quality transceiver.

SPECIFICATIONS

Frequency Response: 200-3,000 Hz

Output Level: Transmitter — 13.5 db (.22 volt) (0 db = 1 volt per 100 microbars)

Receiver—Nominal output — 0.5 db below 100 microbars

Impedance: Transmitter — High (Recommended load 100,000 ohms or more)

Receiver — 125 ohms

Cable: 4-cond., one shielded on handset and cradle

Switch: Handset—Press-to-talk operates transmitter circuit and external control circuit
Cradle—Leaf-switch transfers speaker output to handset and operates external control circuit

Dimensions: 8 $\frac{1}{4}$ " high, 2 $\frac{3}{8}$ " wide. Cradle is 3 $\frac{1}{4}$ " high, 3" wide, 2 $\frac{3}{8}$ " deep, 1 $\frac{1}{2}$ lbs.

List Price: \$58.00. Includes handset, hang-up cradle and interconnecting cables



SHURE PROFESSIONAL NOISE CANCELLING MICROPHONES



MODEL 488 "SONOBAR" . . . A MAJOR BREAKTHROUGH IN MICROPHONE DESIGN

Stated by users to outperform and obsolete all others . . . its quality confirmed by extensive laboratory and field comparison tests! Provides highly intelligible speech communication where high volume background noise is found, such as airplanes, helicopters, motorcycles, trucks, fire engines, power boats, sporting events, drop forges, press-rooms, factories, canneries, mills, printing plants, etc. Incorporates the patented Shure Controlled Reluctance cartridge into a distance-discriminating microphone that effectively cancels background noise . . . gets the message through **EVEN WHEN THE SPEAKER CAN'T HEAR HIMSELF!** Correct placement for close-talk assured by convenient lipguard. Rugged, impact-resistant "Armo-Dur" case. Four versions available: 488A—high impedance; 488B—low impedance; and 488C and 488T—transistorized for direct replacement of carbon microphones (488T FAA Certified for Aircraft applications). All models equipped with coiled-cord and "million-cycle" push-to-talk, blade-type switches. With mounting bracket.

SPECIFICATIONS

Model	488A High Impedance	488B Low Impedance	488C Transistorized	488T Transistorized Aircraft
Frequency Response	(SPECIALLY TAILORED FOR BEST INTELLIGIBILITY) 200 to 4,000 Hz.			
Output Level (0 db=1 volt per 100 microbar field)	.141 volts (-17 db)	.014 volts (-37 db)	0.45 volts (-7 db) using 6 volts d.c. and 500 ohm load	0.71 volts (-3 db using 12 volts and 500 ohm load)
Impedance	High: Recommended Load 100,000 ohms or more	150-250 ohms	Recommended Load 100 to 500 ohms	Recommended AC Load 100 to 800 ohms
Cable, 5½' extended	Three-conductor (One-conductor shielded) cadmium copper coiled cord	Four-conductor (Two-conductor shielded) cadmium copper coiled cord	Four-conductor cadmium copper coiled cord	Three-conductor tinsel coiled cord with PJ 068—plug attached
Switch Mic Circuit: Relay Circuit:	Normally closed* Normally open	Normally open** Normally open	Normally open Normally open	Normally open Normally open
Dimensions and weight	3¾" HIGH x 2⅝" WIDE x 2½" DEEP; ¾ LB.			
List Price	\$57.50	\$57.50	\$62.50	\$72.50

*Provision for simple change to normally open

**Provision for simple change to normally closed



MODEL 419 SERIES RANGER II COMPACT SIZE NOISE CANCELLING MICROPHONES

Don't be misled by the small size—(about half that of a conventional mobile microphone) . . . This one gets the message through even when the background noise is so loud the operator can't hear himself! Stated by users to provide speech intelligibility superior to any other brand of so-called "noise cancelling" microphones. Specially tailored response for highest intelligibility—200 to 4000 Hz. Same size, cable, cable relief, switch and case as Ranger II (page 3) . . . only 7 oz. With lipguard to assure correct close-talking placement. Includes mounting bracket.

SPECIFICATIONS

Model	Frequency Response	Output Level	Impedance	Cable Type	Switch Mic. Circ.	Relay Circ.	List Price
419A	200 to 4,000 Hz	.12 volt (-18.5 db) (0 db=1 volt per 100 microbars)	High—recommended 100,000 ohms or more	5½ ft. 3-cond., (one shielded)	Closed	Open	\$62.50
419B	200 to 4,000 Hz	.014 volt (-37 db) (0 db=1 volt per 100 microbars)	150-200 ohms	5½ ft. 4-cond., (two shielded)	Open	Open	\$62.50

SHURE AMATEUR AND CB MICROPHONES



MODEL 444 WITH ADJUSTABLE HEIGHT AND ARMO-DUR CASE

Specifically designed to meet the needs of amateur and commercial two-way radio operators. Specially tailored response with rising characteristic and sharp cut-off below 300 and above 3000 Hz insures highest "talk power." Ideal for single sideband transmissions. Rugged, reliable, more natural sounding Controlled Magnetic element has output equal to a crystal unit! Press-to-talk switch bar with optional locking feature provides ideal switching functions for both press-to-talk and VOX operation. Adjustable height stand. U.S. Patent D-198,850

SPECIFICATIONS

Frequency Response: 300 to 3,000 Hz. **Output:** -53.0 db. (0 db=1 volt per microbar); 2.25 millivolts/microbar. **Impedance:** High. (Recommended load 100,000 ohms or more). **Case:** Gray "Armo-Dur." **Cable:** 7 ft. two-conductor shielded. **Switch:** Press-to-talk switch bar with optional locking feature to operate relay control and microphone muting circuits. Separate switch enables user to disable relay control circuit for VOX operation. **Dimensions and Weight:** 10 $\frac{3}{8}$ " high (adjustable), 4" wide, 5 $\frac{3}{4}$ " deep, 1 $\frac{1}{2}$ lbs. **List Price:** \$42.50.



MODEL 444T TRANSISTORIZED WITH VARIABLE OUTPUT LEVEL

For AM, FM, or single sideband units. Features built-in two-transistor preamplifier with volume control to give variable high output. Self-contained battery operates up to 300 hours before replacement. Enables you to maintain maximum modulation. Same adjustable height case design as 444 (left).

SPECIFICATIONS

Frequency Response: 200 to 6,000 Hz. **Output Level:** Adjustable from 2 mv to 45 mv for 1 microbar input. **Impedance:** Less than 1,000 ohms. **Battery Type:** Burgess 2U6 or equivalent included. **Cable:** Three-conductor (one conductor shielded), plastic jacketed coiled cord, 5-feet extended. **Switch:** Press-to-Talk switch. Locking or non-locking operation—to operate microphone circuit or external control circuit. Same size and weight as 444. Close circuit to talk and/or open circuit to talk. Relay or switching circuits can be selected by simply cutting designated wire on switch assembly. **List Price:** \$49.50.



MODEL 440SL

Response characteristic similar to 444 microphone . . . tailored to meet the demands of radio communications; ideally suited for single sideband. Rising response characteristic with sharp cutoff below 300 and above 3,000 Hz eliminates the need for audio filters. Rugged, time-proved Controlled Magnetic element, with high output equalling that of a crystal unit. Ideal for use with all types of amateur transmitters.

SPECIFICATIONS

Frequency Response: 300 to 3,000 Hz. **Output Level:** -52.5 db (0 db=1 volt per microbar); 2.38 millivolts/microbar. **Impedance:** High. **Cable:** 7 ft. 2-conductor shielded, with Amphenol MC3M type plug. Includes switch and desk stand as illustrated. **List:** \$47.50. **Model 440**—Basic microphone same as above but with 7 ft. single conductor shielded cable. Less switch, stand, connector. **List:** \$25.00. **A87K Vox Modification Kit**—Modifies 440 SL to obtain maximum flexibility between either VOX or push-to-talk operation. **List:** \$3.25.



MODEL 275SK—"VERSAPLEX" CB IMPROVEMENT MICROPHONE

A Ceramic Microphone ideal for replacing an original equipment crystal or ceramic type CB microphone. Complete with wall or panel bracket for handy hanging, and coiled-cord. "Momentary" slide-to-talk switch activates relay circuit. Lightweight impact-resistant "Armo-Dur" case with black finish and anodized satin-finish cap. With stand adapter. U.S. Patent 196,919.

SPECIFICATIONS

Frequency Response: 40 to 10,000 Hz, free from undesirable peaks. **Output Level:** -59.5 db (0 db = 1 volt per microbar); 1.05 millivolts/microbar. **Impedance:** High—recommended load $\frac{1}{2}$ to 5 megohms. **Cable:** Coiled Cord extends to 5 feet. 3 Conductors, one shielded. **Finish:** Black Armo-Dur body with satin anodized cap and grille. **Dimensions and Weight:** 4 $\frac{3}{4}$ " long x 1 $\frac{1}{3}$ " diam. 6 oz. **List Price:** \$16.50.



MODEL 206

Low Cost Ceramic Replacement Microphone

Designed to provide excellent performance at low cost. Switching circuitry makes it a universal replacement in all communications equipment utilizing ceramic microphones.

SPECIFICATIONS

Frequency Response: 200 to 4,000 Hz. **Output:** -53 db (0 db = 1 volt per microbar). **Impedance:** High. (Recommended load 1 to 5 megohms.) **Cable:** Coiled cord extends to 5 feet, 3-conductors, 1 shielded. **Case:** Gray high impact plastic. **Dimensions:** 3 $\frac{1}{2}$ " high x 2 $\frac{1}{4}$ " wide x 1 $\frac{1}{2}$ " deep. **List Price:** \$15.00.

CERAMIC NOISE-REDUCING AND LOW COST PALM MICROPHONES

Loaded with features—yet priced unusually low. "Shaped" voice response is patterned after professional mobile and SSB amateur response curves . . . assures maximum intelligibility. Professional design and construction. Long-life push-to-talk switch. Rugged "Armo-Dur" plastic case; shock-, shatter-, corrosion-, rust-, and weather-proof. Coiled-cord won't kink. "Lifetime" hang-up bracket. Choice of ceramic (Model 201, or noise reducing Model 202) or Controlled Magnetic (Model 401A and 401B) elements. (Model 401B recommended for parallel balanced line operation where long cable lengths are required.) (Model 202 effectively reduces background noise for use in mobile commercial 2-way radio, ham and CB rigs.) U.S. Patent D194,749.

SPECIFICATIONS

	MODEL 202	MODEL 201	MODEL 401A	MODEL 401B
Type	CERAMIC		CONTROLLED MAGNETIC	
Frequency Response	200 TO 4,000 Hz FREE FROM UNDESIRABLE PEAKS			
Output Level	-50.5 db (0 db=1 volt/microbar) 2.93 millivolts/microbar	-55.5 db (0 db=1 volt per microbar); 1.680 millivolts/microbar	-51 db (0 db=1 volt per microbar); 2.81 millivolts/microbar	-49 db (0 db=1 milliwatt per 10 microbars); 31 millivolts/microbar
Impedance	High—Recommended load impedance; 1 to 5 megohms		High — Recommended load impedance; 100,000 ohms or more	Low — Recommended load impedance; 150-250 ohms
Polar Pattern	Special Noise Reducing		OMNIDIRECTIONAL	
Dimensions and Weight	4" HIGH x 2 $\frac{3}{4}$ " WIDE x 1 $\frac{1}{8}$ " DEEP. 10 OZ.			
List Price	\$20.00	\$18.00	\$22.00	\$22.00



SHURE BASE STATION PAGING AND

NEW



Adjustable Height!

"Uni-Com" Model 522 Noise-Suppressing Unidirectional Dynamic Microphone

Unidirectional pickup pattern suppresses unwanted background noise — the type of noise generated by other dispatchers working nearby, ventilating equipment, or office machines in the same area. It also suppresses feedback in public-address paging applications. Long-life finger-tip control bar (locking and non-locking action) actuates microphone circuit and external relay circuit. Adjustable height from 9 $\frac{3}{4}$ " to 12 $\frac{1}{2}$ " overall. Sturdy, high impact Armo-Dur™ base and case. High or Low impedance selector switch.

SPECIFICATIONS

Frequency Response: 60 to 11,000 Hz.

Output: High Impedance: -56.5 db (0 db = 1 volt per microbar) ; 1.48 millivolts/microbar. Low Impedance: -57 db (0 db = 1 milliwatt per 10 microbars) ; .105 millivolts/microbar.

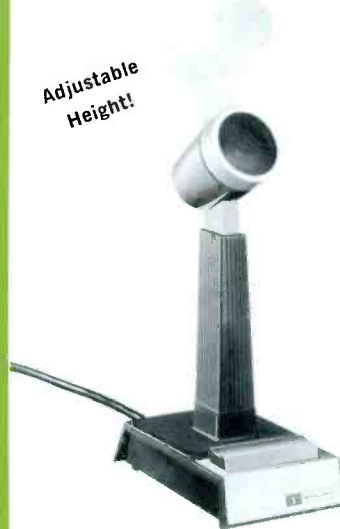
Impedance: Dual. Switch for 25 to 200 ohms, or high.

Cable: 7 ft., four-conductor (two-conductor shielded).

Switch: Press-to-Talk bar with optional locking feature. Switch actuates microphone circuit and an external relay or control circuit. Microphone circuit is normally shorted in high impedance and normally opened in low impedance position.

Dimensions and Weight: 12 $\frac{1}{4}$ " high (adjustable), 4" wide, 5 $\frac{3}{4}$ " deep; 1 $\frac{5}{8}$ lbs.

List Price: \$62.50.



Adjustable Height!

The "Dispatcher" Model 450 Made of Rugged "Armo-Dur™" Won't Crack, Peel, Rust or Dent

Superior voice intelligibility is combined with a modern design which blends in beautifully with any decor. But good looks are only half the story. Integrated case design, made of two-tone gray Armo-Dur™, features telescoping height adjustment for maximum convenience. Built-in push-to-talk fingertip switch bar in the base (locking or non-locking) actuates the microphone circuit and an external relay or control circuit . . . optional features provide every desired switching option. Rugged, Controlled Magnetic element with switch for low or high impedance. Ideal wherever the microphone is visible to the public.

SPECIFICATIONS

Frequency Response: 100 to 10,000 Hz.

Output: High impedance -54.0 db (0 db = 1 volt per microbar) ; 2.00 millivolts/ microbar. Low impedance -53.0 db (0 db = 1 milliwatt per 10 microbars) ; .225 millivolts/microbar.

Impedance: Dual. Switch for 50 to 250 ohms, or high (100,000 ohms or higher load impedance).

Cable: 7 ft., four-conductor (two-conductor shielded).

Switch: Press-to-talk switch bar with optional locking feature. Operates independent microphone and relay circuits. Relay portion of switch normally open. Microphone portion of switch normally open or normally closed as required.

Dimensions and Weight: 10 $\frac{3}{8}$ " high (adjustable) 4" wide, 5 $\frac{3}{4}$ " deep; 1 $\frac{5}{8}$ lbs.

List Price: \$49.50.

UNIDYNE III DYNAMIC MICROPHONE: WORLD'S FINEST BASE-STATION MICROPHONE



Exceptionally fine microphone with a unidirectional pick-up pattern that approaches the theoretical ideal. Unsurpassed in situations where background noise is a factor. Controls feedback in areas where loudspeakers are close by. Can be placed up to 75% further from the operator than ordinary omnidirectional microphones. Model 545S has a built-in on-off switch and positive action lifetime swivel that permits tilting of head. Model 545 can be removed from desk stand for hand-held operation.

SPECIFICATIONS

Frequency Response: 50-15,000 Hz.

Output Level: Low: -57 db (0 db = 1 milliwatt per 10 microbars) ; .141 millivolts/microbar. High: -55 db (0 db = 1 volt per microbar) ; 1.760 millivolts/microbar.

Impedance: Dual. Choice of 50-250 ohms or High.

Polar Pattern: Cardioid. (Uniform with frequency, symmetrical about axis.)

Cable: 15 ft., three-conductor shielded with Amphenol MC4M type plug. Stand Thread $\frac{3}{8}$ "-27 Thread.

Dimensions and Weight: 1 $\frac{15}{64}$ " diameter, 5 $\frac{13}{16}$ " length; 14 oz.

List Price: Model 545S (with switch) \$89.95 Model 545 (without switch) \$85.00.

DISPATCHING MICROPHONES



COMMANDO CONTROLLED MAGNETIC PAGING MICROPHONE MODEL 430SL

Comes complete with swivel adapter and desk stand . . . and is easily removable for use as a hand-held microphone! Special "momentary" press-to-talk, locking or non-locking, switch on the microphone controls both the microphone circuit and the external relay or control circuit. Smooth and uniform broad frequency response (60 to 10,000 Hz) is free from undesirable peaks. For indoor or outdoor use. . . the rugged Controlled Magnetic cartridge is immune to the effects of temperature and humidity. Modern "flare" design in satin chrome and black.

SPECIFICATIONS

Frequency Response: 60 to 10,000 Hz.

Output Level: Low impedance —52 db (0 db = 1 milliwatt per 10 microbars); .225 millivolts/microbar. High impedance: —52 db (0 db = 1 volt per microbar); 2.510 millivolts/microbar.

Impedance: Dual—Easily converted from High to Low.

Polar Pattern: Omnidirectional.

Cable: Non-detachable 15 ft., three-conductor, one-conductor shielded.

Switch: Million cycle press-to-talk locking or non-locking type to control both microphone and external relay or control circuit.

Dimensions: (Microphone only) 6 $\frac{3}{4}$ " x 1 $\frac{3}{4}$ " diameter at head, 1 $\frac{3}{16}$ " diameter at handle; 1 lb.

List Price: \$49.95.



The "Dispatcher" Models 520SL & 520SLB Controlled Magnetic Microphone Assemblies

Models 520SL (high impedance) and 520SLB (low impedance) combine microphone; grip-to-talk, slide-to-lock switch; and desk stand—a complete assembly. A time honored favorite among dispatchers because of their dependability. The rugged assembly is immune to effects of temperature and humidity. Designed for base-station use in police, fire, utility, forestry and transportation services, as well as paging and call systems. Highly intelligible Controlled Magnetic element with 100-9,000 Hz response. Die-cast zinc case finished in metallic green with satin chrome handle and grille. 9 $\frac{3}{8}$ " high, 5" wide x 7" deep. 2 $\frac{1}{4}$ lbs.

Model 520SL equipped with grip-to-talk switch SPDT—normally closed—normally open, and a 7 ft. 2-conductor shielded cable, with a cable connector equivalent to Amphenol MC3M plug.

Model 520SLB has grip-to-talk switch DPST—normally open—normally open, and a 7 ft. 4-conductor. (2 conductors shielded) cable with a cable connector equivalent to Amphenol MC4M plug.

SPECIFICATIONS

Model	Output Level	Impedance	List Price
520SL	—52.5 db (0 db=1 volt per microbar); 2.38 millivolts/microbar	High (recommended load 100,000 ohms or more)	\$45.00
520SLB	—51.0 db (0 db=1 milliwatt per 10 microbars); .281 millivolts/microbar	150-250 ohms	\$49.25

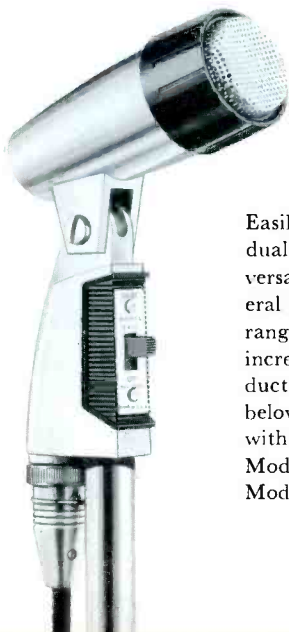


The "Green Bullet" Models 520 and 520B

Head assembly only, similar to 520SL and 520SLB (above). 100-9000 Hz response. Metallic green with satin chrome grille. Includes 7' shielded cable (Model 520, single conductor shielded—Model 520B two conductors shielded).

SPECIFICATIONS

MODEL	OUTPUT LEVEL	IMPEDANCE	LIST PRICE
520	—52.5 db (0 db=1 volt per microbar); 2.38 millivolts/microbar	High (recommended load 100,000 ohms or more)	\$22.50
520B	—51 db (0 db=1 milliwatt per 10 microbars); .281 millivolts/microbar	150-250 ohms	\$22.50



SONODYNE II DYNAMIC MICROPHONE WITH ADJUSTABLE FREQUENCY RESPONSE

Easily adjustable frequency response and dual impedance make this one of the most versatile and problem solving of all general purpose microphones. Normally wide-range response can be adjusted to provide increased voice intelligibility and/or reduction of unwanted low frequency noise below 400 Hz. Die cast satin chrome case with impact resistant black Armo-Dur cap. Model 540S is supplied with on-off switch; Model 540 is supplied without switch.

SPECIFICATIONS

Frequency Response: 50 to 13,000 Hz. Provisions for alternate response: rapid roll-off above 6,000 Hz and/or below 400 Hz.

Output Level: 50-250 ohm impedance: —56.0 db (0 db = 1 milliwatt per 10 microbars); .149 millivolts/microbar. High impedance: —53.5 db (0 db = 1 volt per microbar); 2.13 millivolts/microbar.

Impedance: Dual. Choice of 50-250 ohms or high.

Polar Pattern: Omnidirectional.

Swivel: Self-adjusting "Positive Action" lifetime swivel permits tilting of the head so that the microphone can be pointed at the source of sound.

Cable: 15 ft. two-conductor shielded with an Amphenol MC3M type connector.

Stand Thread: 5/8"-27 thread.

Dimensions and Weight: (not including swivel) 1 $\frac{5}{8}$ " diameter, 3 $\frac{5}{8}$ " length, 1 lb.

List Price: Model 540S (with switch) \$49.95; Model 540 (without switch) \$47.95.

SHURE MICROPHONE ACCESSORIES AND REPLACEMENT PARTS

REPLACEMENT COILED CORDS

MODEL NO.	FOR USE WITH	LIST PRICE
C10C	Tinsel with Amphenol MC4M Connector (3-conductor shielded) for G. E. EM10A and Shure 505K, 505KB.	\$12.00
C11C	Tinsel with Amphenol MC4M Plug for G. E. EM10A2, EM10B2, EM25A, EM25E, and Shure 405K, 405KB.	12.00
C12C	Copper for Models 404C, 488A.	9.75
C14C	Copper for Models 404B, 488B.	10.00
C15C	Copper for Models 101A, 101B, 101C, 102A, 102B, 102C, 104A, 104B, 405T, 488C, CB10, CB10B, CB10D, CB10F, CB12, CB12A, CB12C, CB12D, CB12M, CB12W, CB15, CB15B, CB15C, CB15D, CB26, TU341, TU342, TU352.	6.25
C16C	Tinsel with Amphenol MC4M Connector for Model 101E, CB10E, CB50	9.50
C17C	Copper with Spade Lugs for Models CB12E, CB12T, MS12.	7.75
C18C	Copper with Amphenol MC4M Connector for use with Motorola Equipment	9.50
C19C	Tinsel with Amphenol MC4M Connector for Models, 103, CB15F	9.50
C20C	Copper for Models 201, 401A	7.00
C21C	Copper for Model 401B	7.75
C22C	Tinsel with PJ068 Plug for Model 488T	15.00
C23C	Copper for Model 275SK	6.00
C24C	Copper for Models 414A, 419A	9.75
C25C	Copper for Models 414B, 419B	10.00
C26C	Copper for Model 414C	8.35
C27C	Tinsel for Models 418A, EM18D	13.00
C28C	Tinsel Shield, copper conductors—for G. E. Models EM18A, EM18B, EM18C	13.00

REPLACEMENT MICROPHONE CARTRIDGES

Supplied with necessary hardware, instructions, etc.

MODEL NO.	FOR USE WITH	LIST PRICE
R4M	415, 420, 425, 430, 430SL	\$15.00
R5	520SL, 520, 440SL	11.00
R5B	520SLB, 520B, 510SLB	11.00
R5C	418A	11.00
R5D	405K, TH100	11.00
R5E	401B, 404B, 405T	11.00
R5F	401A, 404C	11.00
R10	104A, 104B	8.50
R14A	414A	11.00
R14B	414B	11.00
R14C	414C	25.00
R19A	419A	17.50
R19B	419B	17.50
R45	545S, 545	37.50
R50	540S, 540	15.00
R88A	488A	17.50
R88B	488B, 488C	17.50
R88T	488T	17.50

NOTE: For Complete Shure Microphone Cartridge Replacement Catalog Write for AL188 Microphone Cartridge Replacement Guide.



SOLDERLESS CONNECTIONS CRIMPING PLIER KIT

This specially designed kit eliminates difficulties in repairing tinsel coiled cords. Includes unique crimping pliers, 75 solderless clips, 20 plastic tubes and a length of lead wire. Connection is made with one insulation-piercing clip crimped around the tinsel conductor and bare copper lead. Takes only seconds.

KIT TK-1 List Price: **\$12.50**
KIT TK-1-TW Contains 100 solderless clips and 100 ft. of lead wire. List Price: **\$6.50**



"GRIP-TO-TALK SLIDE-TO-LOCK" SWITCH

Heavy-Duty Switch withstands the most severe field requirements of paging and dispatching systems. Can be used with any Shure connector-type crystal, dynamic and carbon microphones of any impedance.

Model A88A List Price: ~~\$12.50~~
14.00



LINE TRANSFORMER

A high-quality, cable-type transformer which makes it possible to connect a low impedance microphone (35-50 ohm and 150-250 ohm) to a high impedance amplifier. Only 2 1/2" long x 3/4" diam. Solves the problem of excessive high frequency loss and hum when long lengths of microphone cable are necessary. May also be used in applications requiring high impedance to low impedance circuit connections. Cannon XL-3-11 input and Amphenol MC1F output plugs installed. Response: 20-20,000 Hz ± 1 db.

Model A95A List Price: ~~\$7.50~~
2.00

RK SERIES REPLACEMENT KITS

In addition to replacement cables and cartridges, Shure has other replacement parts available in our RK Series Kits which cover the following models: 104A, 104B, 404B, 404C, 405K, 405T, 414A, 414B, 414C, 418A, 419A, 419B, 488A, 488B, 488C, and 488T.

To obtain a parts breakdown of these, please send for data sheet no. 27A273.

SHURE BROTHERS, INC.
 222 HARTREY AVE.
 EVANSTON, ILLINOIS 60204

General

The SM5A and SM5B have been painstakingly developed to uniquely satisfy the existing requirements for boom operation, and to provide a new degree of reproduction quality and flexibility of application in television and motion picture studio and location work. Features of their design and operation include:

- Directivity—cardioid, symmetrical about axis and exceptionally uniform with frequency. Minimizes sound coloration due to off axis pickup—such as from reverberation, reflections from floor or scenery, and performers accidentally "off-mike". Provides very effective rejection of background noise.
- Frequency response—wide range, especially tailored to provide natural dialogue or vocal music pickup with good presence, yet also suitable for scoring.
- Integral windscreen—very effective in outdoor locations and for fast boom swings.
- Mechanical suspension—two stage mechanical filter for any boom application. Suspension elements are internal to windscreen to prevent wind noise generation in the suspension assembly.
- Minimum electrical noise—absence of transformers or response correcting inductors prevents pickup of electrical noise. May be used in extreme hum fields.
- Perfectly balanced—excellent stability and minimum overswing.
- Ruggedness and dependability—under all operating conditions. Element and isolation assembly are protected by the outer windscreens and steel reinforcing rods.

Because of the unusual mechanical construction and performance characteristics, the SM5 may be used to advantage in many applications where boom operation is not practical—for example, with the accessory S33C Desk Mount for outdoor sports and other difficult remote pickups.



SPECIFICATIONS

Type: Dynamic

Frequency Response: 50 to 15,000 cps. (See Figure A)

Polar Pattern: Unidirectional. (See Figure B)

Impedance: Model SM5A — 50 ohms
Model SM5B — 150 ohms

Output Level: 1,000 cps Response

Model SM5A (50 ohm impedance)

Open circuit voltage —84.0 db*(.063 mv)

Power level into 50 ohms ... —57.0 db**

EIA Microphone Rating

G_m (sensitivity) —150.0 db***

Model SM5B (150 ohms impedance)

Open circuit voltage —79.5 db*(.103 mv)

Power level into 150 ohms . —57.0 db**

EIA Microphone Rating

G_m (sensitivity) —150.0 db***

(*) 0 db = 1 volt per microbar

(**) 0 db = 1 milliwatt with 10 microbars

(***) 0 db = EIA Standard SE-105/ August, 1949

Connector: Cannon XLR-3-42 receptacle mounted on microphone.

Finish: Textured dark gray enamel. Light and dark gray plastic foam windscreens.

Dimensions: See Figure C.

Other Mounting: A 5/8" —27 adaptor is supplied. Desk Mount available as accessory.

Net Weight: 1 pound, 15 ounces (879 grams)

Hum Level: —120 dbm with field of 1×10^{-3} gauss at 60 cps.

REPLACEMENT PARTS:

The following replacement parts and accessories may be ordered through your authorized Shure Professional Microphone Distributor or from Shure Brothers, Incorporated.

Description	Shure Part No.
Cartridge Assembly	
a. Model SM5A	99A347
b. Model SM5B	99B347
Rubber Isolation Suspenders	66A94
Outer Windscreen Assembly	
a. Light gray	90A1043
b. Charcoal gray	90B1043
Cable Assembly (replacement)	70A2001
Accessory Desk Mount	S33C
Boom Adapter	31A936
5/8"-27 Stand Adapter	90A1071
External Shock Assembly	94A343

A. Instructions for removing Outer Windscreens:

1. With the fingers, gently push back (at the nameplate end) the plastic foam of the outer windscreen adjacent to the reinforcing rods extending into the outer windscreen. The rods can be easily felt. The round head screws will become visible.
2. Remove the four round head screws.
3. Slide the outer windscreen off the ring structure and reinforcing rods.

B. Instructions to install Outer Windscreens:

1. Insert the four round head screws into the holes provided in the metal plate at the end of the outer windscreen assembly.
2. Slide outer windscreen over the reinforcing rods toward the ring structure.
3. Tighten the four round head screws. Push back foam with fingers while tightening the screws.

Guarantee: Each SM5 Microphone is guaranteed to be free of defects in material and workmanship. Should this Microphone cease to operate properly within two years from the date of purchase, it will be repaired or replaced at no charge by Shure Brothers, Incorporated. (The finish and foam windscreens are excluded from this two-year service policy.)

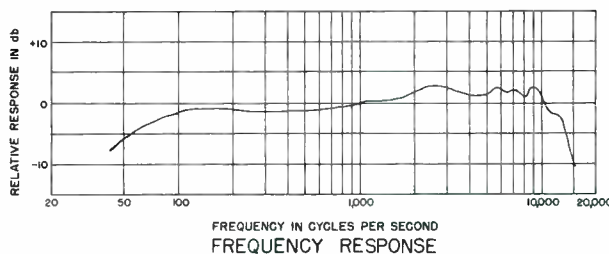


FIGURE A

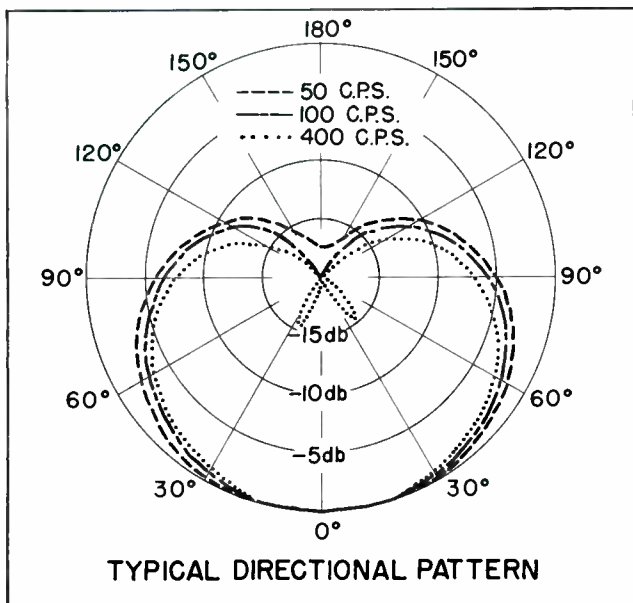


FIGURE B

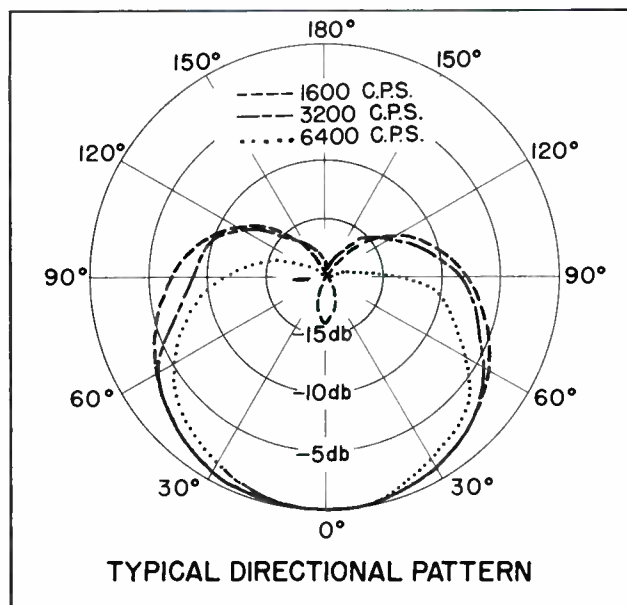


FIGURE B

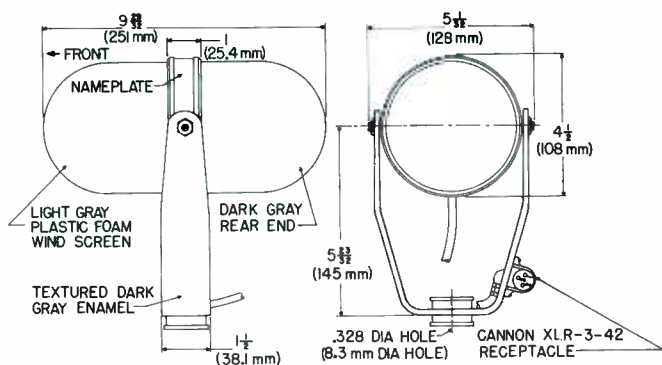
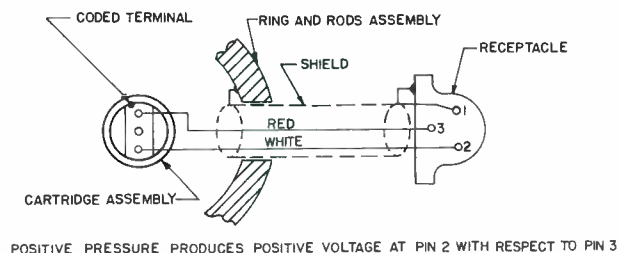


FIGURE C



INTERNAL CONNECTIONS

FIGURE D

Model SM33

The Model SM33 is a compact and rugged unidirectional ribbon microphone combining wide range response and a Super-Cardioid directional pattern. This polar pattern is somewhat more directional than the conventional cardioid, providing excellent control of unwanted surrounding noise and reverberation. The performance characteristics are ideal for studio use in broadcasting and recording and for critical sound reinforcement applications.

The Model SM33 features:

- Unusually effective Super-Cardioid pickup characteristic minimizes effects of studio acoustics and background noise.
- Warm, smooth sound from wide frequency response range. Well suited to both voice and music.
- Low frequency response characteristic adjustable by means of a Response Selector Switch.
- Built-in shock mount for quiet operation.
- Rugged mechanical design and internal ribbon protection assure reliable operation under severe conditions of use.

SPECIFICATIONS

Type: Ribbon.

Frequency Response: 40 to 15,000 cps. Low Frequency Response Selector. See Figure A.

Polar Pattern: Super-Cardioid (Unidirectional) Response. See Figure D.

Impedance: Dual. Choice of 30-50 ohms or 150-250 ohms. (Connected for 150-250 ohms when shipped). See paragraph on impedance changing.

Output Level: 1,000 cps response

Model SM33	30-50 ohms
Open circuit voltage	— 85.0 db* (0.056 mv)
Power level	— 57.5 db**
EIA Microphone Rating	
Gm (sensitivity)	—150.5 db***

Model SM33	150-250 ohms
Open circuit voltage	— 76.5 db* (0.149 mv)
Power level	— 58.0 db**
EIA Microphone Rating	
Gm (sensitivity)	—148.0 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

*** 0 db = EIA Standard SE-105, August 1949

Connector: Equipped with Cannon XL-3-12 type connector in microphone.



Cable: 20 foot (6.1 m.) 2-conductor shielded broadcast type with Cannon XLR-3-11-C connector attached.

Case: Die-cast zinc.

Finish: Textured light and dark gray enamel.

Swivel: Self adjusting lifetime swivel permits tilting the head 45° forward and 70° backward.

Shock Mount: Special live rubber vibration-isolation unit.

Stand Thread: 5/8" -27 thread.

Stand Couplers: Adapter for 1/2" pipe thread or 5/8" -24 thread available upon request at no extra charge.

Dimensions: See Figure C.

Net Weight less Cable: 1 pound 10 ounces (736 grams)

Shipping Weight: 3 1/4 pounds (1474 grams)

Instructions for changing to 30-50 ohm impedance: See Figures B and C.

1. Remove the set screw (#2-56) at the receptacle end of the microphone.
2. Pull out the 3-prong insert from the receptacle.
3. Disconnect the BLACK lead from pin number 3.
4. Solder the BLUE lead to pin number 3.
5. Insulate end of the BLACK lead with tape.
6. Re-assemble insert into receptacle and tighten set screw.

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone case is opened.

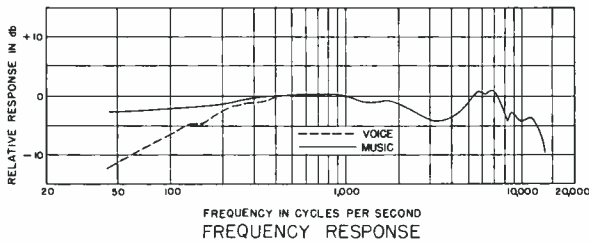
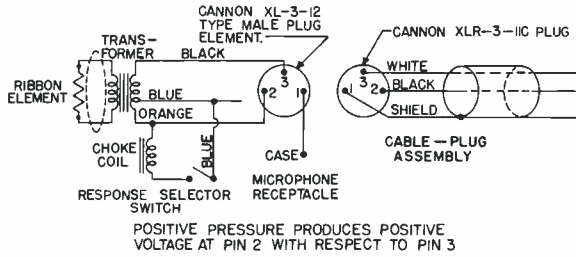


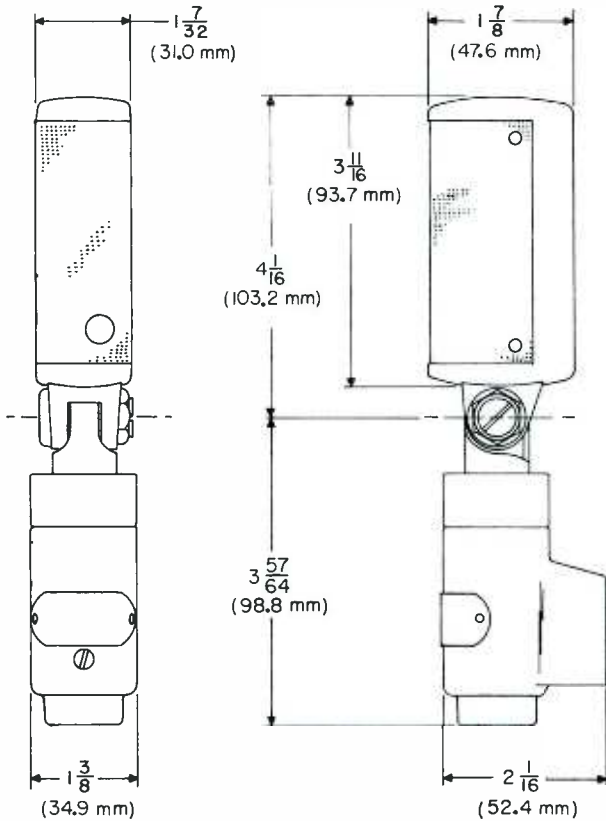
FIGURE A



POSITIVE PINSURE PRODUCES POSITIVE VOLTAGE AT PIN 2 WITH RESPECT TO PIN 3

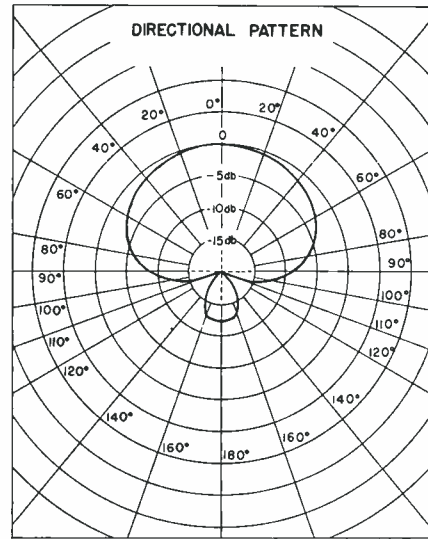
INTERNAL CONNECTIONS

FIGURE B



OVER-ALL DIMENSIONS

FIGURE C



POLAR PATTERN

FIGURE D

ARCHITECT'S SPECIFICATIONS

The microphone shall be Shure Model SM33 or equivalent. A moving ribbon type microphone with a frequency range of 40 to 15,000 cps, this unit shall have a unidirectional horizontal polar characteristic. The microphone shall have impedances of 30-50 ohms and 150-250 ohms. The microphone output shall be:

30-50 ohms impedance—57.5 db
(0 db = 1 milliwatt with 10 microbars)

150-250 ohms—58.0 db
(0 db = 1 milliwatt with 10 microbars)

The microphone rating Gm (sensitivity) at 1,000 cps shall be within ± 3 db of the following levels:

30-50 ohms—150.5 db
150-250 ohms—148.0 db

EIA Standard SE-105, August, 1949

The microphone shall be provided with a swivel adjustable from 45° forward and 70° backward. The microphone shall be equipped with a vibration isolation unit in combination with the stand connector, and it shall have a detachable Cannon cable connector capable of connecting to a two-conductor shielded cable.

The microphone will mount on a stand having $\frac{5}{8}$ " -27 thread. The over-all dimensions shall be $7 \frac{61}{64}$ " (202.0 mm) in height, $1 \frac{3}{8}$ " (34.9 mm) in width, and $2 \frac{1}{16}$ " (52.4 mm) in depth.

General: The Model SM50 is a rugged, omnidirectional microphone built to withstand the severest field use. It provides very natural and intelligible voice reproduction and unusual freedom from annoying wind and breath noises. Very comfortably handheld, or mounted in the slip-in stand adaptor, the SM50 is ideally suited to remote interviews, news and sports pickups, and a variety of field and studio applications.

This Microphone Features:

- Smooth, natural sounding response from 40 to 15,000 Hz—slightly tailored for the utmost in intelligibility with an excellent feeling of presence.
- Highly effective built-in wind and breath filter—virtually eliminates wind noise, "blasting" and "pop". Easily removed for replacement or cleaning.
- Comfortable size, lightweight, well balanced for handheld use.
- Rugged construction to provide completely dependable operation under all operating conditions.
- Versatility—equally at home in the field or studio—handheld, or on a stand.

SPECIFICATIONS

Type: Dynamic.

Frequency Response: 40 to 15,000 Hz.
(See Figure A)

Polar Pattern: Omnidirectional. (See Figure B)

Impedance: Dual. 30-50 ohms and 150-250 ohms (Connected for 150-250 ohms when shipped). See See paragraph on impedance changing.

Output Level: 1,000 Hz response.

Model SM50	30-50 ohms
Open circuit voltage	— 84.5 db* (.059 mv)
Power level	— 57.0 db**
EIA Microphone Rating	
Gm (sensitivity)	—149.5 db***
Model SM50	150-250 ohms
Open circuit voltage	— 78.5 db* (.118 mv)
Power level	— 57.5 db**
EIA Microphone Rating	
Gm (sensitivity)	—150 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

*** 0 db = EIA Standard SE-105, August 1949



Cable: 20 foot (6.1 meter) two-conductor shielded Broadcast type with Cannon XLR-3-11C Connector.

Connector: Cannon XL-3-12 type in microphone.

Case: Aluminum and zinc die-cast.

Case Finish: Textured dark gray enamel.

Swivel Adapter: Positive action 90° swivel to mount microphone to stand on fixture with 5/8"-27 threads.

Dimensions: See Figure D.

Net Weight less Cable: 8 ounces
(227 grams)

Shipping Weight: 2 pounds, 5 ounces
(1049 grams)

Instructions for changing to 30-50 ohm impedance: See Figures C and D.

1. Remove male insert at the receptacle end of the microphone by turning the set screw in (counterclockwise)
2. Disconnect the RED lead from pin #3.
3. Solder the ORANGE lead to pin #3.
4. Insulate end of the RED lead with tape.
5. Re-assemble male insert into receptacle and seat set screw securely in place by turning out (clockwise).

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs.

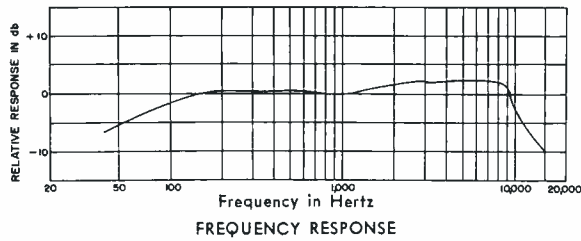
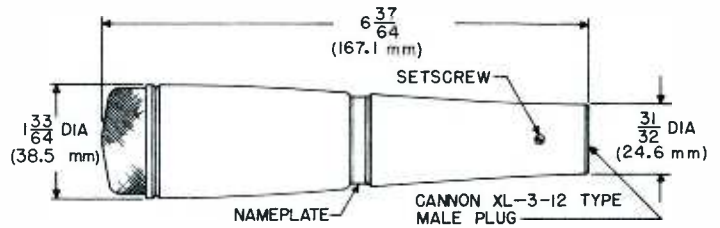
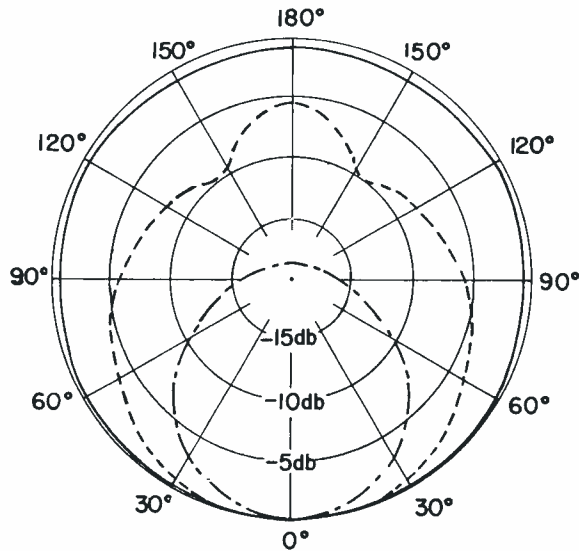


FIGURE A

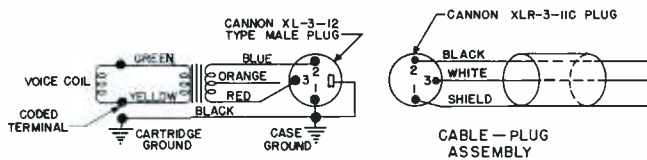


OVER-ALL DIMENSIONS
FIGURE D



— 1,000 Hz.
- - - 5,000 Hz.
- · - · 10,000 Hz.

POLAR PATTERN
FIGURE B



POSITIVE PRESSURE PRODUCES POSITIVE VOLTAGE AT PIN 2 WITH RESPECT TO PIN 3

INTERNAL CONNECTIONS
FIGURE C

NOTE: Windscreen assembly is unitized for ease of cleaning or replacement. To remove, unscrew from microphone body.

To clean, flush with mild detergent, rinse thoroughly and allow to dry before replacing.

ARCHITECT'S SPECIFICATION

The microphone shall be Shure Model SM50 or equivalent moving coil (dynamic) microphone with a frequency range of 40 to 15,000 Hz. The unit shall have an omnidirectional polar characteristic. The microphone shall have available impedances of 30-50 ohms and 150-250 ohms. The microphone output shall be:

30-50 ohm impedance—57.0 db
(0 db = 1 milliwatt with 10 microbars)

150-250 ohms impedance—57.5 db
(0 db = 1 milliwatt with 10 microbars)

The microphone rating G_m (sensitivity) at 1,000 Hz shall be within 3 db of the following levels:

30-50 ohms—149.5 db

150-250 ohms—150.0 db

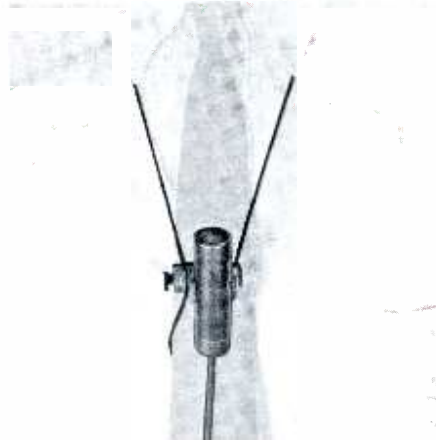
EIA Standard SE-105, August, 1949

The microphone shall be provided with a swivel adapter adjustable through 90° from vertical to horizontal and capable of being mounted on a stand having a 5/8" -27 thread. The microphone shall have a detachable 20 foot, two-conductor, shielded cable with a Cannon cable connector. The over-all dimensions shall be 6 37/64 (167.1 mm) in length, and 1 33/64 (38.5 mm) in diameter.

REPLACEMENT PARTS

The following replacement parts and accessories may be ordered through your authorized Shure Professional Microphone Distributor or from Shure Brothers, Incorporated.

Description	Shure Part No.
Windscreen Assembly	90A1200
Cartridge	99F350
Cable	C50
Desk Stand	S33P
Swivel Adapter	A25B



GENERAL: The Model SM51 is a small dynamic lavalier microphone designed for use in television, motion pictures, radio, and similar applications in which a small, wearable microphone of professional quality is required.

Features include:

- Frequency response optimized for lavalier use. Will match well, in sound, with stand or desk mounted microphones.
- Small size, lightweight.
- Positive-locking lavalier holder with adjustable clothing clip.
- Smooth exterior contours and recessed grille for minimum clothing noise.
- Rugged construction—steel case for strength and magnetic shielding.
- Cable field replaceable without disturbing cartridge.

The versatile "Positive-Lock" lavalier holder provides simple, noiseless adjustment of microphone position and holds the microphone firmly in the selected position. A belt clip is also provided to permit attaching the cable at the waistband to relieve cable weight and pull, absorb sudden tugs on the cable, and minimize cable noise.

TO WEAR MICROPHONE: Slide microphone through opening in lavalier assembly (Figure D). While pushing "cord lock" plunger on right side of lavalier assembly, slide cord into slot—adjust cord length and release plunger. Engage shirt or blouse with clip. The clip may be installed on lavalier assembly for right or left side opening or for vertical "pen clip" use; or may be removed by sliding clip out of slotted retainer.

TO REMOVE MICROPHONE: Disengage clip—push "Cord Lock" plunger and remove cord from lavalier assembly slot.

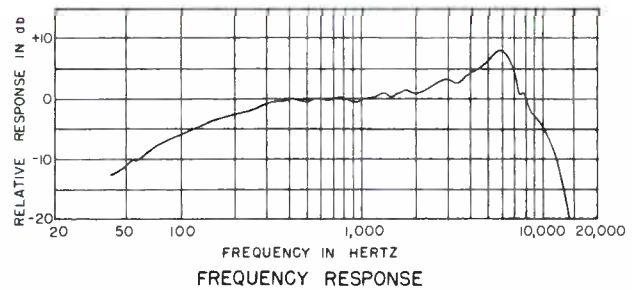
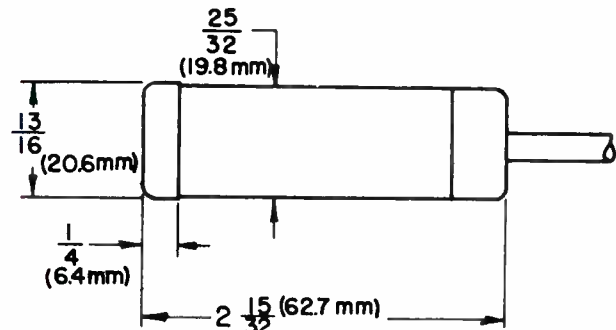


FIGURE A



OVERALL DIMENSIONS
FIGURE B

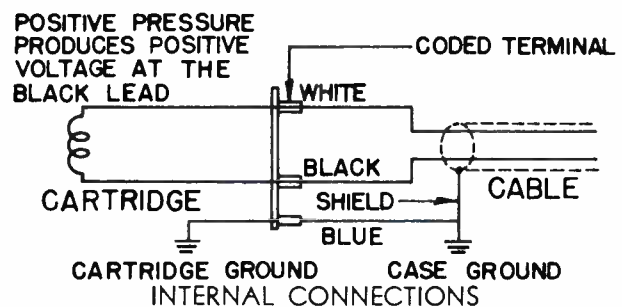


FIGURE C



LAVALIER ASSEMBLY AND BELT CLIP
FIGURE D

SPECIFICATIONS:

TYPE: Dynamic

FREQUENCY RESPONSE: From 70 to 12,000 Hz. Rising Characteristic to 6,000 Hz. See Figure A.

POLAR PATTERN: Omni-directional

IMPEDANCE: Properly matches any low impedance input from 50 to 250 ohms

VOLTAGE SENSITIVITY:

1,000 Hz. response

Open circuit voltage level.....— 82.0 db*
Power level — 60.5 db**
EIA Microphone Rating
Gm (sensitivity)—153.5 db***

Output level —0.079 millivolt per microbar

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

*** 0 db = EIA Standard SE-105, August 1949

CABLE: Non-detachable 30-foot, two-conductor shielded Broadcast type.

CASE FINISH: Non-reflecting gray with stainless steel grille

DIMENSIONS: See Figure B

REPLACEMENT PARTS

The following replacement parts and accessories may be ordered through your authorized Shure Professional Microphone Distributor or from Shure Brothers, Incorporated.

<u>Description</u>	<u>Shure Part No.</u>
Cable	70A2007
Lavalier Assembly	A51L
Belt Clip	94A240
Swivel Adapter	A57R

NET WEIGHT: (Less cable) 2 ounces (58 grams)

SHIPPING WEIGHT: 1½ Pounds (680 grams)

GUARANTEE: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs.

ARCHITECT'S SPECIFICATION: The microphone shall be the Shure Brothers, Inc. Model SM51 Dynamic Lavalier Microphone or equivalent. The microphone shall be a moving-coil (dynamic) type microphone with a frequency range of 70 to 12,000 Hz. The unit shall have an omnidirectional polar characteristic. The microphone shall be a single impedance microphone having a rating impedance of 150 ohms. The microphone rating Gm (sensitivity) at 1,000 Hz. shall be within ± 3 db of —153 db (EIA Standard SE-105, August 1949.)

The microphone shall be provided with a lavalier cord and clip assembly for use as a wearable microphone. The microphone shall be provided with a 30-foot, two-conductor shielded cable. The overall dimensions shall be 2-15/32 inches (62.7 mm) in length and 13/16 inches (20.6 mm) in diameter.

General: The Model SM53 is a rugged dynamic cardioid microphone expressly designed for professional applications requiring the ultimate in sound quality and control.

Features include:

- Broad, smooth frequency response: provides clean, natural reproduction of both voice and music.
- Cardioid directional pattern: the optimum pattern for comfortably wide front working area with excellent side and rear rejection.
- Uniform, symmetrical pattern: off-axis rejection is uniform with frequency and completely symmetrical about the axis to prevent sound coloration due to off-axis pickup and to provide maximum control of unwanted sound.
- Integral "Pop" filter; minimizes effects of explosive speech and breath sounds.
- Minimal proximity effect: permits the same well balanced sound from close talking to distant pickup.
- Mechanical noise isolation: cartridge shock-mounted to minimize stand-borne and handling noise.
- Bass roll-off switch: provides a gradual low frequency roll-off in applications where an overall rising response characteristic is advantageous.
- Extremely low hum sensitivity: permits use in extreme hum fields.
- Rugged construction: assures dependable operation with unchanging performance.

The SM53 is designed for both stand and hand-held use. No special precautions are required to avoid obstruction of the rear entries, since normal operation is assured even with only one of the small rear entry holes open.

The reliable performance, outstanding features and handsome appearance of the SM53 make it extremely versatile and ideally suited for many demanding applications in television, radio, recording, motion pictures and sound reinforcement.

SPECIFICATIONS

Type: Dynamic

Frequency Response: 70 to 16,000 Hz. (See Figure A).

Polar Pattern: Cardioid (Unidirectional) Response—Uniform with frequency, symmetrical about axis (See Figure B).

Impedance: 150 ohms to permit proper match with any input from 50 through 250 ohms.

Output Level: 1,000 Hz. response.

Open circuit voltage.....— 81 db (0.09 millivolts)
(0 db = 1 volt per microbar)



Power level	— 58.5 db
(0 db = 1 milliwatt per 10 microbars)	
EIA Microphone Rating Gm (Sensitivity)	—151 db
(EIA Standard SE-105, August, 1949)	
Hum Sensitivity	—144 dbm
(in a 1 milligauss field)	

Bass Roll-Off: See Figure C for location of response selector switch. See Figure A for roll-off response.

Cable: 20 foot (6.1 m.) two conductor shielded Broadcast type with Cannon XLR-3-IIC connector attached on microphone end.

Connector: Cannon XLR-3-12 type in microphone.

Swivel Adapter: Positive-action swivel to fit 5/8"-27 stand threads.

Case: Aluminum and stainless steel.

Case Finish: Matte metallic.

Net Weight: (less cable) 8 ounces (227 grams)

Shipping Weight: 2 pounds, 2 ounces (964 grams)

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs.

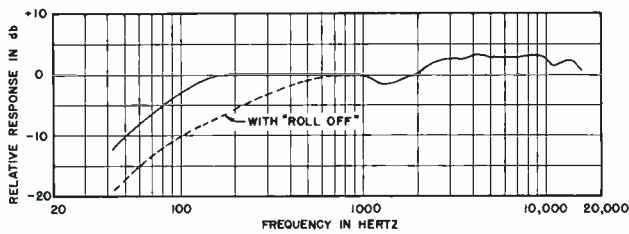
ARCHITECT'S SPECIFICATIONS

The microphone shall be a Shure Model SM53 or equivalent. It shall be a moving-coil microphone with a frequency range of 70 to 16,000 Hz. It shall have a cardioid directional characteristic, with cancellation at the sides being approximately 6 db and the cancellation at the rear being 15 to 20 db. The microphone shall have an impedance of 150 ohms. The microphone output shall be -58.5 db where 0 db equals one milliwatt for 10 microbars of sound pressure. The microphone rating G_M (sensitivity) at 1000 Hz. shall be within ± 2 db of -151 db. (EIA Standard SE-105, August, 1949).

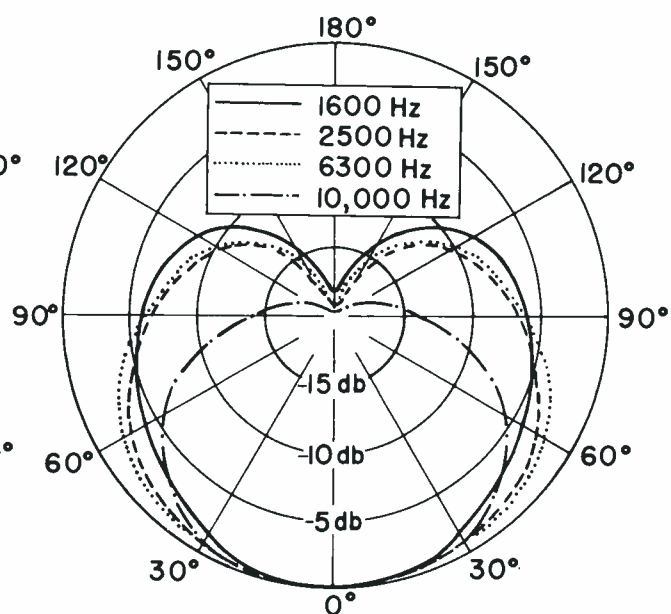
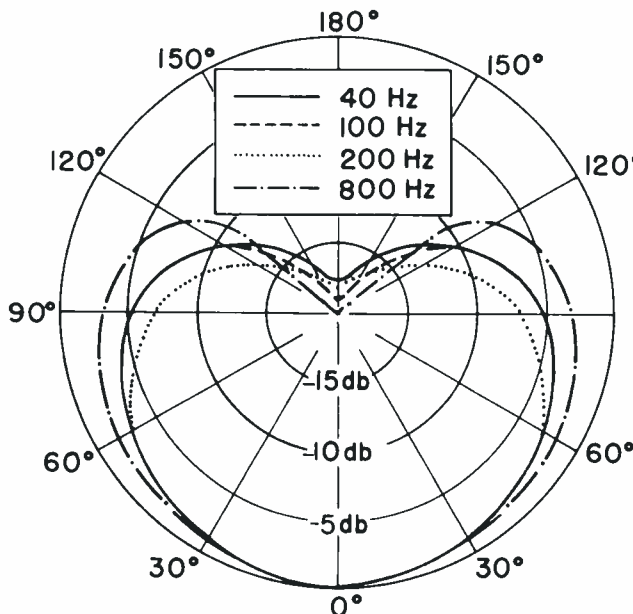
The microphone shall have a two position Response Selector switch. One position provides a flat response and the second position provides gradual low frequency roll-off.

The microphone shall be provided with swivel adapter and a 20 foot (6.1 m) 2 conductor shielded cable having a Cannon XLR-3-IIC connector attached. The microphone swivel adapter shall mount on a stand having $\frac{3}{8}$ "-27 thread.

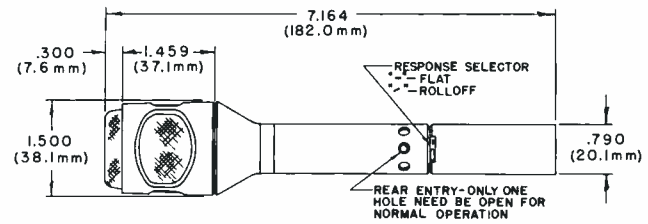
The overall dimensions shall be 7.164 (182.0 mm) in length and 1.500 (38.1 mm) in diameter.



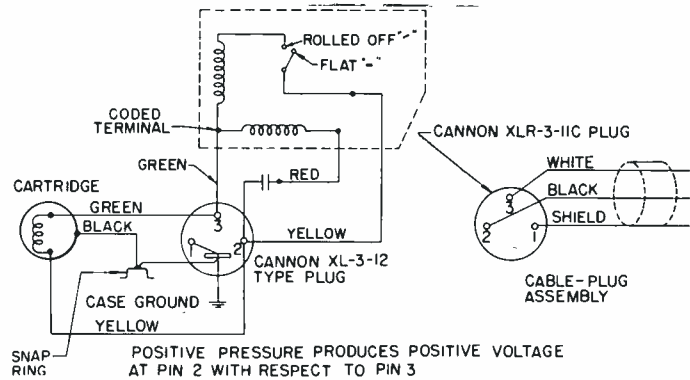
FREQUENCY RESPONSE
FIGURE A



POLAR PATTERN
FIGURE B



OVERALL DIMENSIONS
FIGURE C



INTERNAL CONNECTIONS
FIGURE D

REPLACEMENT PARTS

The SM53 is readily field repairable. The following replacement parts and accessories may be ordered through your authorized Shure Professional Microphone Distributor or from Shure Brothers, Inc.

Description	Shure Part No.
Cartridge.....	R53
Grille Assembly.....	RK101G
Switch Assembly.....	RK102S
Connector Assembly.....	RK103C
Cable.....	C50
Swivel Adapter.....	A57P
Desk Stand.....	S33P

General: The Model SM56 is a slender, moving coil (dynamic) microphone, built to provide wide range reproduction of music and voice and featuring an exceptionally uniform and effective unidirectional pickup pattern. The performance characteristics and unique construction make it ideal for studio and remote use in broadcasting, recording, motion picture, and critical sound reinforcement applications.

The Model SM56 features:

- Unusually effective cardioid pickup pattern minimizes effects of studio acoustics and background noise. Rear and side rejection uniform to very low frequencies and completely symmetrical about the axis.
- Bright, clean sound. Especially effective for announcing, narration and dialogue, vocal music, and rhythm pickups.
- Cartridge and microphone body separately shock mounted for quiet operation.
- Convenient impedance selection.
- An accessory switch adapter is furnished to serve in applications where an ON-OFF switch is necessary at the microphone.

SPECIFICATIONS

Type: Dynamic

Frequency Response: 40 to 15,000 Hz.
(See Figure B)

Polar Pattern: Cardioid (Unidirectional) Response. Uniform with frequency, symmetrical about axis (See Figure D)

Impedance: Dual. Choice of 30-50 ohms "L" or 150-250 ohms "H", selected by impedance switch. (See "switch" below. Factory set to 150-250 ohms.)

Output Level: 1,000 Hz. response

Model SM56 30-50 ohms "L" position
 Open circuit voltage —83.5 db* (.067 mv.)
 Power level —56.0 db**
 EIA Microphone Rating
 Gm (Sensitivity) —149.0 db***

Model SM56 150-250 ohms "H" position
 Open circuit voltage —76.5 db* (.149 mv.)
 Power level —56.0 db**
 EIA Microphone Rating
 Gm (Sensitivity) —148.0 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

*** 0 db = EIA Standard SE-105, August 1949



Switch: Impedance selection switch with center position "Off". May be used with "tamper-proof" cover, or accessory (included) "ON-OFF" knob.

Swivel: New improved "positive action" lifetime swivel permits tilting of the head through 180°

Shock Mount: Special vibration-isolation unit of rubber construction

Cable: 20-foot (6.1 m) two-conductor shielded Broadcast type

Cable Connector: Cannon XLR-3-11C

Case: Die-cast and "Armo-Dur"

Case Finish: Textured Dark Gray Enamel

Stand Thread: Standard 5/8" -27 thread

Dimensions: See Figure C

Net Weight Less Cable: 1 pound 3 ounces
(539 grams)

Shipping Weight: 2 3/4 pounds (1247 grams)

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone is subjected to accident or abuse or if the case is opened.

ARCHITECT'S SPECIFICATIONS

The microphone shall be Shure Model SM56 or equivalent. A moving coil (dynamic) microphone with a frequency range of 40 to 15,000 Hz., this unit shall have a cardioid polar characteristic. The cancellation at the sides shall be approximately 6 db, and the cancellation at the rear shall be 15 to 20 db. The microphone shall be equipped with a three-position impedance "Off" switch for adjusting the microphone rating impedance to 38 ohms-150 ohms.

The microphone output shall be:

50 ohms impedance —56 db
(0 db = 1 milliwatt with 10 microbars)

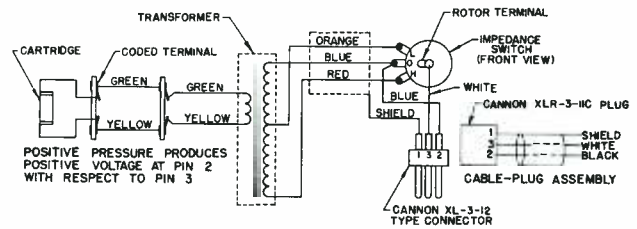
250 ohms impedance —56 db
(0 db = 1 milliwatt with 10 microbars)

The microphone rating Gm (sensitivity) at 1,000 Hz. shall be within ± 3 db of the following levels.

Low Impedance-149 db
Medium Impedance-148 db
EIA Standard SE-105 August 1949

The microphone shall be provided with a swivel adjustable through 180°. The microphone shall be equipped with a vibration-isolation unit in combination with the stand connector, and it shall have a detachable Cannon cable connector. The microphone will mount on a stand having $\frac{5}{8}$ " -27 thread.

The overall dimensions shall be 8" (203.2 mm) in height, $1\frac{3}{8}$ " (34.9 mm) in width, and $2-1/16$ " (52.5 mm) in depth.



INTERNAL CONNECTIONS
FIGURE A

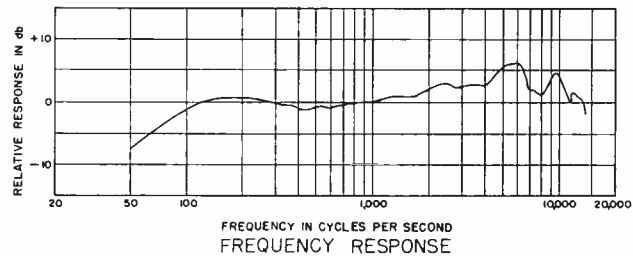
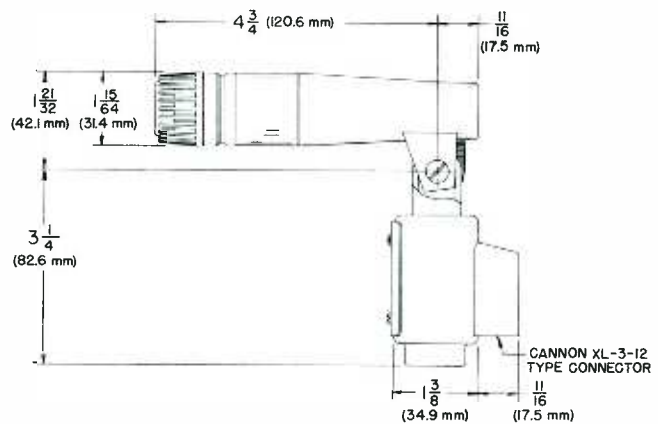


FIGURE B



OVER-ALL DIMENSIONS
FIGURE C

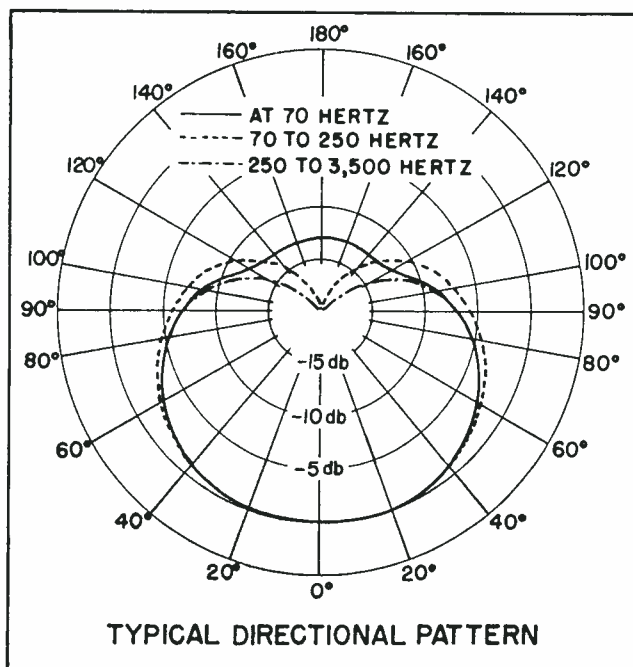


FIGURE D

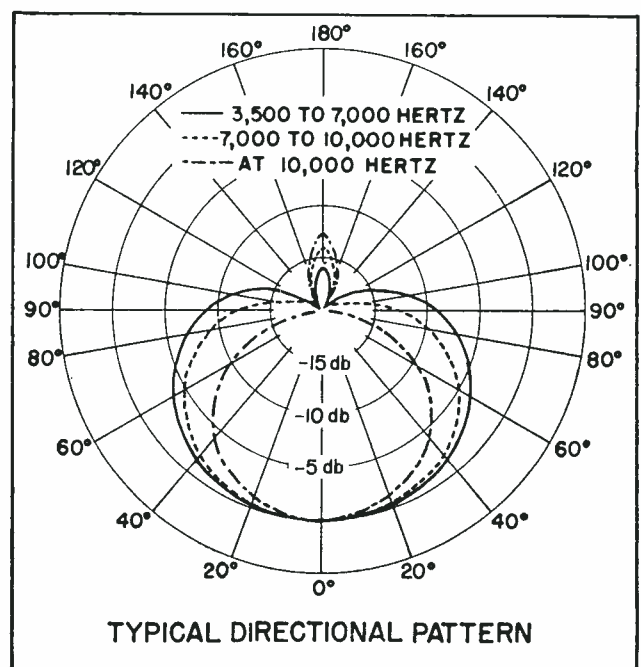


FIGURE D

General: The Model SM57 is a slender dynamic microphone built to provide wide range reproduction of music and voice. It features an exceptionally uniform and effective unidirectional pickup pattern. The performance characteristics and unique construction make it ideal for both studio and remote use in broadcasting, recording, motion picture, and critical sound reinforcement applications. It is especially suitable for interview type use where "hand-a-bility" of the microphone is important.

The Model SM57 features:

- Unusually effective cardioid pick-up pattern minimizes effects of studio or location acoustics and background noise. Rear and side rejection uniform to very low frequencies and completely symmetrical about the axis.
- Bright, clean sound. Especially effective for announcing, narration and dialogue, vocal music, and rhythm pickups.
- Cartridge is shock mounted for quiet operation.
- Versatility—for use in the hand or on a stand—for use indoors or outdoors.
- The microphone is supplied with an adjustable swivel adapter which permits the microphone to be tilted through 90° from vertical to horizontal.

SPECIFICATIONS

Type: Dynamic

Frequency Response: 40 to 15,000 Hz.
(See Figure B)

Polar Pattern: Cardioid pattern—rotationally symmetrical about microphone axis, uniform with frequency (See Figure D)

Impedance: Dual. 30-50 ohms and 150-250 ohms. (Connected for 150-250 ohms when shipped). See paragraph on impedance changing.

Output Level: 1,000 Hz. response

Model SM57 30-50 ohms "L" position	
Open circuit voltage	—83.5 db* (.067 mv)
Power level	—56.0 db**
EIA Microphone Rating	
Gm (Sensitivity)	—149.0 db***
Model SM57 150-250 ohms "H" position	
Open circuit voltage	—76.5 db* (.149 mv)
Power level	—56.0 db**
EIA Microphone Rating	
Gm (Sensitivity)	—148.0 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

*** 0 db = EIA Standard SE-105, August 1949.



Cable: 20 foot (6.1 m) two-conductor shielded Broadcast type with Cannon XLR-3-11C connector

Connector: Cannon XL-3-12 type in microphone

Case: Die-cast and "Armo-Dur"

Case Finish: Textured dark gray enamel

Swivel adapter: Positive action swivel to fit 5/8" -27 threads.

Dimensions: See Figure C

Net Weight less cable: 10 ounces (284 grams)

Instructions for changing to 30-50 ohm impedance: See Figures A and C

1. Remove the set screw (#2-56) at the receptacle end of the microphone.
2. Pull out the 3-prong insert from the receptacle.
3. Disconnect RED lead from pin number 3.
4. Solder the ORANGE lead to pin number 3.
5. Insulate end of the RED lead with tape.
6. Re-assemble insert into receptacle and tighten set screw.

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone is subjected to accident or abuse or if the case is opened.

ARCHITECT'S SPECIFICATIONS

The microphone shall be Shure Model SM57 or equivalent. A moving coil microphone with a frequency range of 40 to 15,000 Hz., this unit shall have a cardioid characteristic. The cancellation at the sides shall be approximately 6 db, and the cancellation at the rear shall be 15 to 20 db. The microphone shall have impedances of 30-50 ohms and 150-250 ohms. The microphone output shall be:

30-50 ohms impedance —56 db
(0 db = 1 milliwatt with 10 microbars)

150-250 ohms impedance —56 db
(0 db = 1 milliwatt with 10 microbars)

The microphone rating G_m (sensitivity) at 1,000 Hz. shall be within ± 3 db of the following levels:

30-50 ohms—149 db
150-250 ohms—148 db

EIA Standard SE-105, August 1949

The microphone shall be provided with a swivel adapter adjustable through 90° from vertical to horizontal and a detachable 20 foot, two-conductor shielded cable with a Cannon cable connector. The microphone swivel adapter will mount on a stand having a $\frac{5}{8}$ " -27 thread. The overall dimensions shall be 6-17/64 (159.1 mm) in length and $1\frac{1}{4}$ (31.75 mm) in diameter.

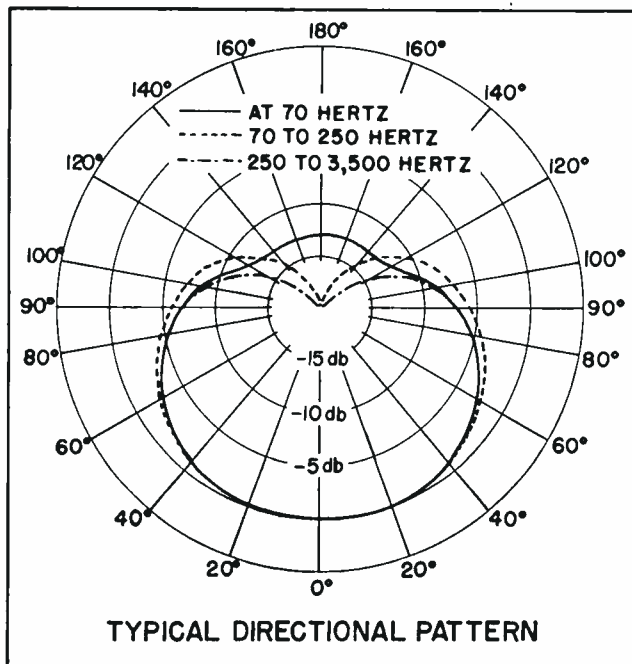
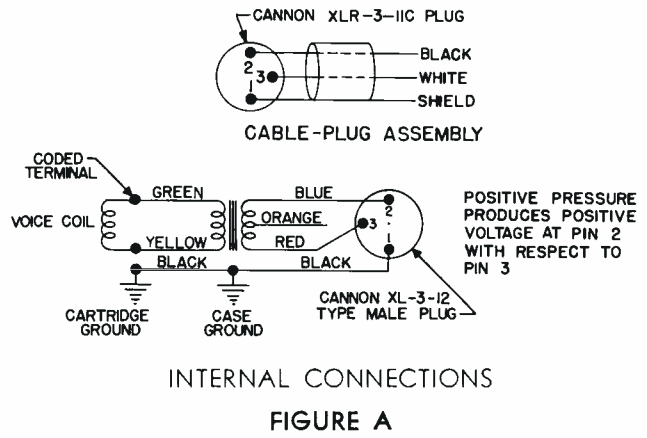


FIGURE D



INTERNAL CONNECTIONS
FIGURE A

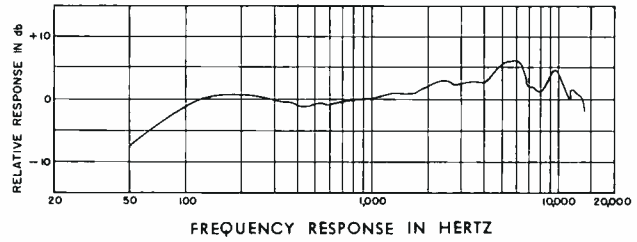
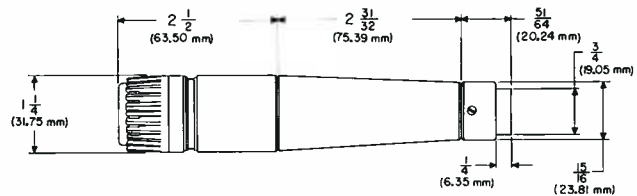


FIGURE B



OVER-ALL DIMENSIONS
FIGURE C

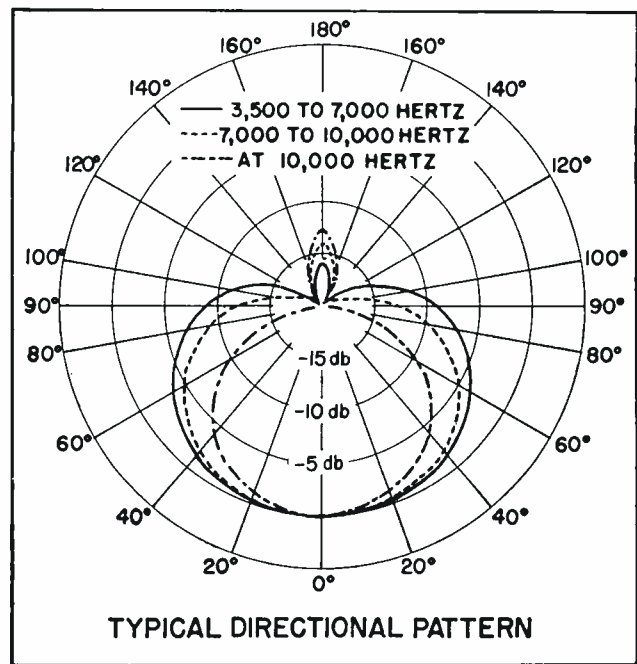


FIGURE D

General

The Model SM58 is a rugged unidirectional microphone with a highly effective built-in wind and "pop" filter.

The performance characteristics and compact size of this microphone make it especially well suited to remote sports, news, and interview pickups—as well as location and studio vocal music recording and a variety of broadcast, stage and recording applications in which the microphone must be used outdoors or close to the mouth.

The Model SM58 features:

- Self-contained spherical filter to control explosive breath sounds ("pop") and wind noise in outdoor locations.
- Unusually effective cardioid pickup pattern to minimize background noise and undesirable effects of studio and location acoustics. Rear and side rejection uniform to very low frequencies and completely symmetrical about microphone axis.
- Bright, clean sound. Especially good for announcing, narration and dialogue, vocal music, and rhythm pickups.
- Cartridge shock-mounted for protection and quiet operation.
- Wind and "pop" filter readily removable for cleaning or replacement.
- Versatility—designed for both field and studio use—hand-held or on a stand (slip-in swivel adapter included).

SPECIFICATIONS

Type: Dynamic

Frequency Response: 50 to 15,000 Hz (cps)
(See Figure A.)

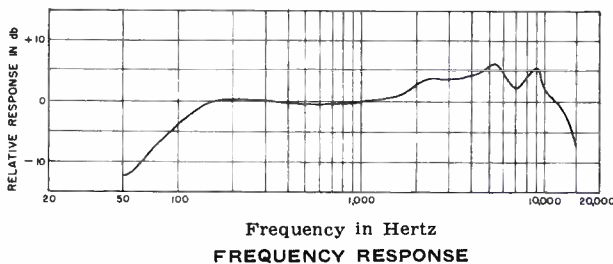


FIGURE A

Impedance: Dual. 30-50 ohms and 150-250 ohms. (Connected for 150-250 ohms when shipped.) See paragraph on impedance changing.



Polar Pattern: Cardioid—rotationally symmetrical about microphone axis, uniform with frequency. (See Figure B.)

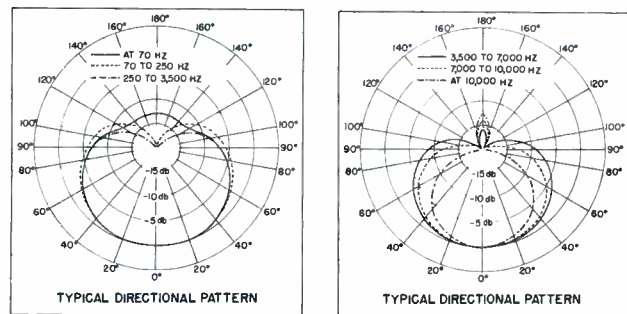


FIGURE B

Output Level: 1,000 Hz (cps) response

Model SM58 30 - 50 ohms

Open circuit voltage..... — 83.5 db*(.067mv)

Power Level — 56.0 db**

EIA Microphone Rating

Gm (Sensitivity) —149.0 db***

Model SM58 150 - 250 ohms

Open circuit voltage — 76.5 db*(.149mv)

Power Level — 56.0 db**

EIA Microphone Rating

Gm (Sensitivity) —148.0 db***

*0 db = 1 volt per microbar

**0 db = 1 milliwatt with 10 microbars

***0 db = EIA Standard SE-105, August 1949

Cable: 20 foot (6.1 m) two-conductor shielded Broadcast type with Cannon XLR-3-11C Connector attached on microphone end.

Connector: Cannon XL-3-12 type in microphone.

Case: Die-cast and steel wire mesh.

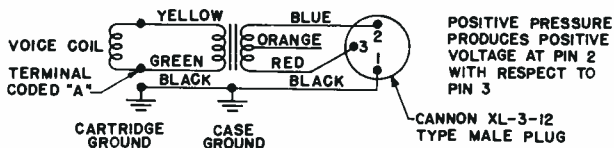
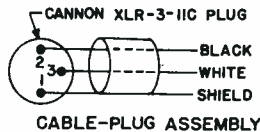
Case Finish: Textured dark gray enamel and matte chrome.

Swivel Adapter: Positive action swivel to fit 5/8"-27 threads.

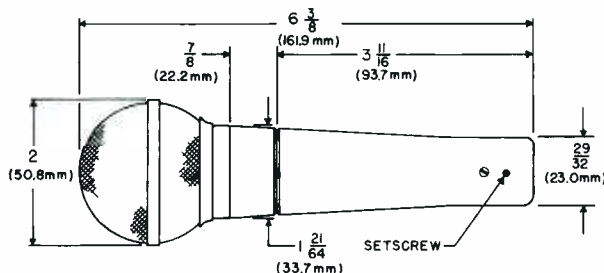
Net Weight less cable: 15 ounces (425 grams)

Instructions for changing to 30 - 50 ohm impedance (See Figures C and D):

1. Remove the set screw (#2-56) at the receptacle end of the microphone.
2. Pull out the 3-prong insert from the receptacle.
3. Disconnect RED lead from Pin No. 3.
4. Solder the ORANGE lead to Pin No. 3.
5. Insulate end of the RED lead with tape.
6. Reassemble insert into receptacle and tighten set screw.



INTERNAL CONNECTIONS
FIGURE C



OVER-ALL DIMENSIONS
FIGURE D

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs.

ARCHITECT'S SPECIFICATIONS

The microphone shall be Shure Model SM58 or equivalent. A moving-coil microphone with a frequency range of 50 to 15,000 Hz. this unit shall have a cardioid characteristic. The cancellation at the sides shall be approximately 6 db, and the cancellation at the rear shall be 15 to 20 db. The microphone shall have impedances of 30 - 50 ohms and 150 - 250 ohms. The microphone output shall be:

- 30 - 50 ohms impedance —56 db
(0 db = 1 milliwatt with 10 microbars)
- 150 - 250 ohms impedance —56 db
(0 db = 1 milliwatt with 10 microbars)

The microphone rating G_m (sensitivity) at 1,000 Hz. shall be within ± 3 db of the following levels:

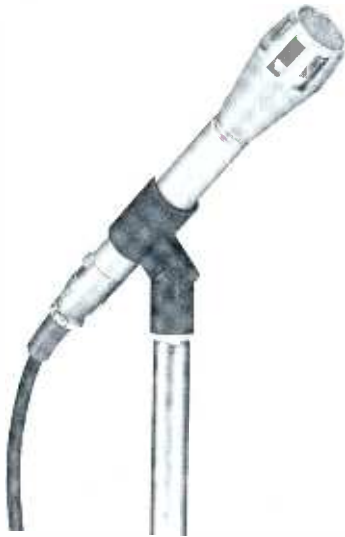
- 30 - 50 ohms.....—149.0 db
 - 150 - 250 ohms.....—148.0 db
- EIA Standard SE-105, August 1949

The microphone shall be provided with a swivel adapter adjustable through 90° from vertical to horizontal and a detachable 20-foot, two-conductor shielded cable with a Cannon cable connector. The microphone swivel adapter will mount on a stand having a $\frac{5}{8}$ "-27 thread. The overall dimensions shall be $6\frac{3}{8}$ " (161.9 mm) in length and 2" (50.8 mm) in diameter.

REPLACEMENT PARTS:

The following replacement parts and accessories may be ordered through your authorized Shure Professional Microphone Distributor or from Shure Brothers, Incorporated.

Description	Shure Part No.
Wind and "Pop" Filter Assembly.....	90A1260
Cartridge.....	99B352
Cable.....	90D1102
Desk Stand.....	S33P
Swivel Adapter.....	A25B



General: Designed to provide very clean and natural sound reproduction while presenting a slim, neat appearance, the Model SM60 is also a very rugged and versatile microphone. The built-in wind and pop filter assures very effective control of breath noise and "popping" when the microphone is used close, and removes the need for add-on windscreens for outdoor use. The performance, small size, and ruggedness of the SM60 make it an ideal choice for on-camera or on-stage use by vocalists and M.C.'s, for studio and remote interviews, news, sports, and a variety of similar applications.

The Model SM60 features:

- Compact size, advanced styling, excellent handling feel.
- Smooth, natural sound from wide, slightly tailored frequency response.
- Built-in wind and "pop" filter to minimize breath and wind noise.
- Rugged—will retain its performance and handsome appearance even under severe field or stage use.
- Versatility—appearance and size suitable for the most glamorous application, in the hand or on a stand—yet rugged enough for strenuous field and location use.

SPECIFICATIONS

Type: Dynamic.

Frequency Response: 45 to 15,000 Hz (cps).
See Figure A.

Polar Pattern: Omnidirectional. See Figure B.

Impedance: 150 ohms to permit proper match with any input from 50 through 250 ohms.

Voltage Sensitivity: 1,000 Hz. Response.

Model SM60 (150 ohm impedance)

Open circuit voltage — 81.5 db*

Power level into 150 ohms — 60.5 db**

EIA Microphone Rating

G_m (sensitivity) — 153.0 db***

Output level—0.085 millivolt per microbar.

(*) 0 db = 1 volt per microbar.

(**) 0 db = 1 milliwatt with 10 microbars.

(***) 0 db = EIA Standard SE-105 (August, 1949).

Cable: 20-foot (6.1 m.) 2-conductor shielded broadcast type with Cannon XLR-3-11C connector attached on the microphone end of the cable. (See Figure E)

Finish: Matte metallic.

Swivel Adapter: Positive action swivel to fit 5/8"—27 stand threads.

Dimensions: See Figure C.

Net Weight: (less cable) 6 ounces (170 grams).

Packaged Weight: 2 pounds (907 grams)

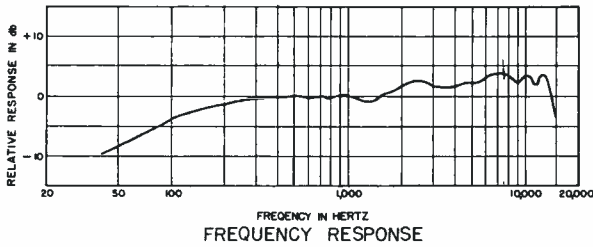
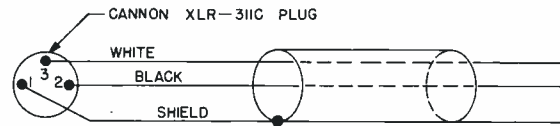
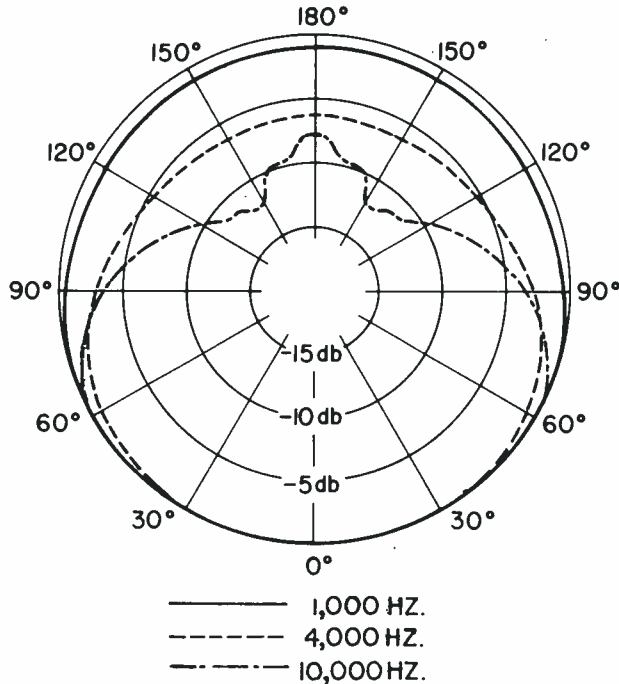


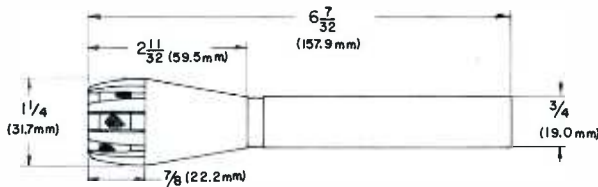
FIGURE A



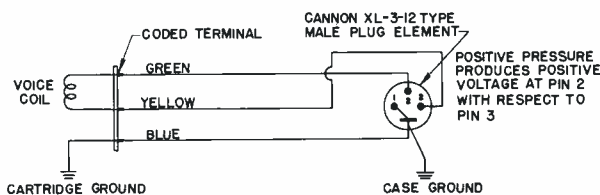
CABLE-PLUG ASSEMBLY
FIGURE E



POLAR PATTERN
FIGURE B



OVER-ALL DIMENSIONS
FIGURE C



INTERNAL CONNECTIONS
FIGURE D

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs.

ARCHITECT'S SPECIFICATIONS

The microphone shall be the Shure Model SM60 or equivalent. The microphone shall be a moving coil (dynamic) type with a frequency range of 45 to 15,000 Hz. The unit shall have an omnidirectional horizontal polar characteristic. The microphone shall have a rating impedance of 150 ohms.

The microphone output shall be:

150 ohm impedance—60.5 db
(0 db = 1 milliwatt with 10 microbars)

The microphone rating G_m (sensitivity) at 1,000 cps shall be within ± 2 db of 153.0 db.

(EIA Standard SE-105, August 1949)

The microphone shall be provided with a swivel adapter adjustable through 90° from vertical to horizontal and a 20-foot (6.1 m) 2-conductor shielded cable having a Cannon XLR-3-11C connector attached. The microphone swivel adapter will mount on a stand having $5/8$ "—27 thread.

The over-all dimensions shall be $6-7/32$ " (157.9 mm) in length and $1 1/4$ " (31.7 mm) in diameter.

REPLACEMENT PARTS

The following replacement parts and accessories may be ordered through your authorized Shure Professional Microphone Distributor or from Shure Brothers, Inc.

Description	Shure Part No.
Cartridge	99D345
Cable.....	90D1102
Desk Stand.....	S33P
Swivel Adapter	A57C



General: The Shure Model SM76 Dynamic Omnidirectional Microphone is designed specifically in size and performance for studio and remote use in TV, Radio, and Professional Recording. The microphone features:

- Extended smooth frequency response from 45 to 20,000 Hz.
- Slender design, light weight.
- Versatility—for use in the hand or on a stand—for use indoors or outdoors.
- Dependability—under all operating conditions.
- Ruggedness—will operate for years without deviation from original standards.
- A Cannon XL-3-12 type connector in the microphone.

The Model SM76 meets the most exacting requirements for maximum quality and minimum size. The microphone is supplied with an adjustable swivel adapter, permitting the microphone to be tilted through 90° from vertical to horizontal.

SPECIFICATIONS

Type: Dynamic.

Frequency Response: 45 to 20,000 Hz. See Figure A.

Polar Pattern: Omnidirectional. See Figure B.

Impedance: 50 and 150 ohms to permit proper match with any input from 30 through 250 ohms. (Connected for 150 ohms when shipped.) See paragraph on impedance changing.

Voltage Sensitivity: 1,000 Hz. Response.

Model SM76 (50 ohm impedance)

Open circuit voltage 87.5 db*
Power level into 50 ohm 60.0 db**

EIA Microphone Rating
Gm (sensitivity) 153.0 db***
Output level—0.043 millivolt per microbar
Model SM76 (150 ohm impedance)
Open circuit voltage 82.0 db*
Power level into 150 ohms 59.5 db**
EIA Microphone Rating
Gm (sensitivity) 153.5 db***
Output level—0.079 millivolt per microbar

(*) 0 db = 1 volt per microbar.

(**) 0 db = 1 milliwatt with 10 microbars.

(***) 0 db = EIA Standard SE-105 (August, 1949).

Cable: 20-foot (6.1 m.) 2-conductor shielded broadcast type with Cannon XLR-3-11C connector attached. (See Figure E)

Finish: Textured dark gray enamel.

Swivel Adapter: Positive action swivel to fit 5/8" -27 stand threads.

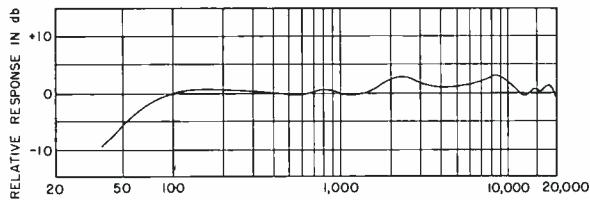
Dimensions: See Figure C.

Net Weight: (less cable) 7 ounces (198 grams).

Packaged Weight: 2 pounds 2 ounces (964 grams)

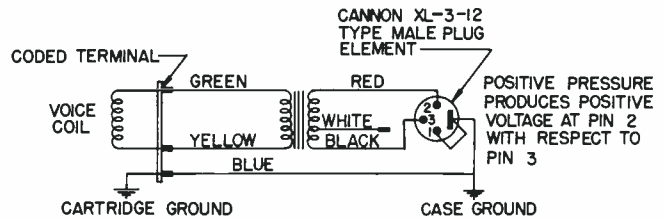
Instructions for changing to 50-ohm impedance: (See Figures C and D):

1. Remove male insert from receptacle end of microphone by first turning the set screw in (counter-clockwise).
2. Pull out the 3-prong insert from the receptacle.
3. Disconnect RED lead from Pin No. 2.
4. Solder the WHITE lead to Pin No. 2.
5. Insulate end of RED lead with tape.
6. Re-assemble insert into receptacle and tighten set screw by turning out (clockwise).



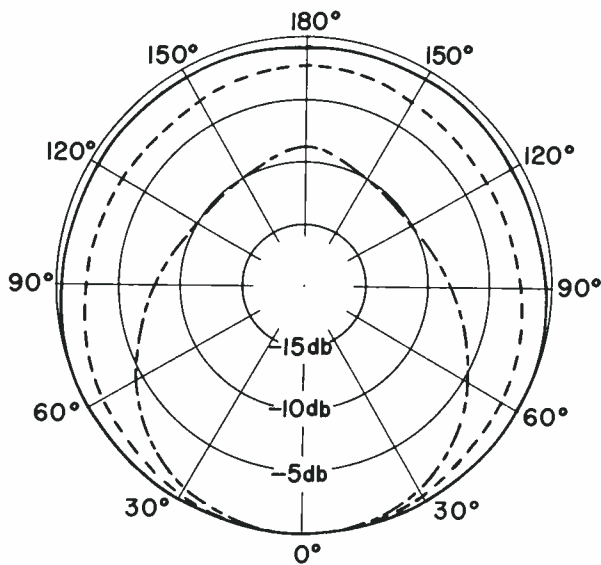
FREQUENCY RESPONSE IN HERTZ

FIGURE A



INTERNAL CONNECTIONS

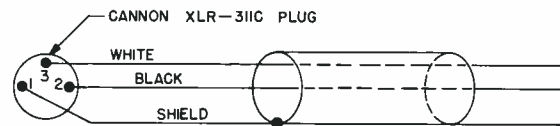
FIGURE D



— 1,000 Hz.
 - - - 4,000 Hz.
 - · - · 10,000 Hz.

POLAR PATTERN

FIGURE B



CABLE-PLUG ASSEMBLY

FIGURE E

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone case is opened for other than impedance change.

ARCHITECT'S SPECIFICATIONS

The microphone shall be the Shure Model SM76 or equivalent. The microphone shall be a moving coil (dynamic) type with a frequency range of 45 to 20,000 Hz. The unit shall have an omnidirectional horizontal polar characteristic. The microphone shall have available impedances of 50 ohms and 150 ohms.

The microphone output shall be:

50 ohm impedance—60.0 db
 (0 db = 1 milliwatt with 10 microbars)
 150 ohm impedance—59.5 db
 (0 db = 1 milliwatt with 10 microbars)

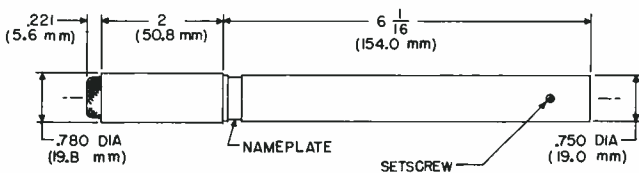
The microphone rating G_m (sensitivity) at 1,000 Hz. shall be within ± 3 db of the following levels:

Low Impedance—153.0 db
 Medium Impedance—153.5 db

EIA Standard SE-105, August 1949

The microphone shall be provided with a swivel adapter adjustable through 90° from vertical to horizontal and a 20-foot (6.1 m) 2-conductor shielded cable having a Cannon XLR-3-11C connector attached. The microphone swivel adapter will mount on a stand having $\frac{5}{8}$ " -27 thread.

The over-all dimensions shall be 8-9/32" (210.4 mm) in length and 25/32" (19.8 mm) in diameter.



OVER-ALL DIMENSIONS

FIGURE C

Model 300

The Model 300 is an unusually compact and rugged ribbon microphone. It combines wide range response and a bidirectional (cosine) pickup pattern. The "300" is an excellent choice for broadcast or recording studio and for critical sound reinforcement applications in which its symmetrical front and rear pickup with greatly reduced side pickup is useful. Ideal for applications such as "across the table" interviews or dialogue; stages with loudspeakers directly to the side or overhead; and combined pickup of facing instrumental groups in recording studios. The bidirectional pattern provides the same control of overall surrounding noise and reverberation as an equivalent cardioid microphone.

The Model 300 Features:

- Warm, smooth sound from wide range front and rear response. Low frequency characteristic adjustable by means of a Response Selector Switch.
- Bidirectional polar pattern, effective over wide frequency range.
- Built-in shock mount for quiet operation.
- Convenient impedance selection.
- Rugged mechanical design and ingenious internal ribbon protection assure reliable operation under severe conditions of use.

SPECIFICATIONS**Type:** Ribbon**Frequency Response:** 40 to 15,000 cps.
(See Figure B)**Polar Pattern:** Bidirectional. Equally sensitive at front and rear. Response at sides down 15 to 20 db from front and rear responses. (See Figure D)**Impedance:** Equipped with multi-impedance switch furnishing choice of three impedances—"L"-30 to 50 ohms; "M"-150 to 250 ohms, "H"-High.**Output Level:** 1,000 cps response

Model 300 30 to 50 ohms "L" position
 Open circuit voltage —87.5 db* (.043 mv)
 Power level into 50 ohms —60.5 db**
 EIA Microphone Rating
 Gm (Sensitivity) —153.0 db***

Model 300 150 to 250 ohms "M" position
 Open circuit voltage —79.5 db* (.105 mv)
 Power level into 250 ohms —59.0 db**
 EIA Microphone Rating
 Gm (Sensitivity) —151.0 db**



Model 300 High Impedance "H" position
 Open circuit voltage —57.5 db* (1.32 mv)
 Loaded with 100,000 ohms —60.0 db**
 EIA Microphone Rating
 Gm (Sensitivity) —154.0 db***

* 0 db = 1 volt per microbar
 ** 0 db = 1 milliwatt with 10 microbars
 *** 0 db = EIA Standard SE-105, August 1949.

Case: Die-cast zinc**Finish:** Textured dark gray enamel**Swivel:** Self-adjusting lifetime swivel permits tilting the head 45° forward and 90° backward so that the microphone can be aimed at the source of sound.**Shock Mount:** Special live-rubber vibration-isolation unit.**Connector:** Equipped with Cannon XLR-3-12 type connector in microphone**Cable:** 20 foot (6.1 m) 2-conductor shielded broadcast type with Cannon XLR-3-11C connector attached**Stand Thread:** 5/8" -27 thread**Stand Couplers:** Adapters for 1/2" pipe thread or 5/8" -24 thread available upon request at no extra charge.**Response Selector:** Two position switch to adjust low frequency characteristic for optimum performance, (See Figure B)

Dimensions: See Figure C

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone case is opened.

ARCHITECT'S SPECIFICATIONS

The microphone shall be Shure Model 300 or equivalent. A moving-ribbon type microphone with a frequency range of 40 to 15,000 cps, this unit shall have a bi-directional horizontal polar characteristic. The microphone shall be equipped with a three-position impedance change switch for selecting the microphone rating impedance to 38 ohms, 150 ohms, or 40,000 ohms. The microphone output shall be:

- 30-50 ohms impedance—60.5 db*
- 150-250 ohms impedance—59.0 db*
- High impedance—57.5 db**
- * (0 db = 1 milliwatt with 10 microbars)
- ** (0 db = 1 volt per microbar)

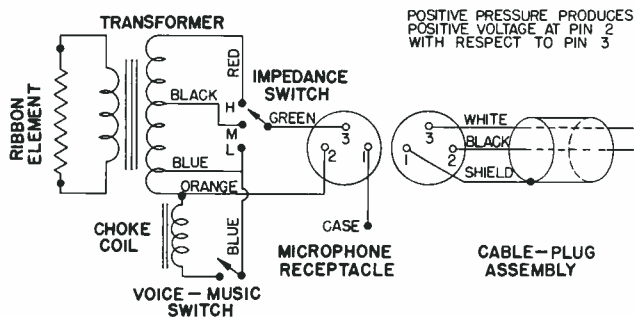
The microphone rating G_m (sensitivity) at 1,000 cps shall be within 3 db of the following levels:

- "L" Position of switch—153 db
- "M" Position of switch—151 db
- "H" Position of switch.....—154 db

EIA Standard SE-105 August 1949

The microphone shall be provided with a swivel adjustable from 45° forward and 90° backward. The microphone shall be equipped with a vibration-isolation unit in combination with the stand connector, and it shall have a detachable Cannon cable connector capable of connecting to a two-conductor shielded cable.

The microphone will mount on a stand having 5/8" -27 thread. The overall dimensions shall be 9-7/32" (234.2 mm) ± 1/4" (6.4 mm) in height, 1-7/16" (36.5 mm) ± 1/8" (3.2 mm) in width, and 1-3/32" (27.8 mm) ± 1/8" (3.2 mm) in depth.



INTERNAL CONNECTIONS
FIGURE A

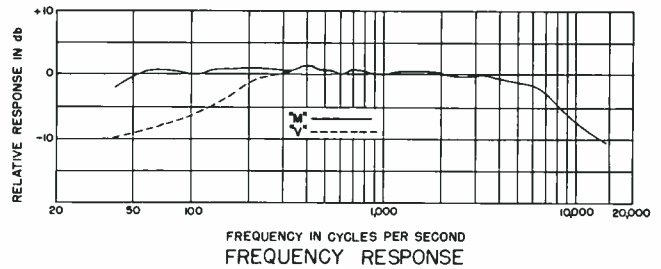
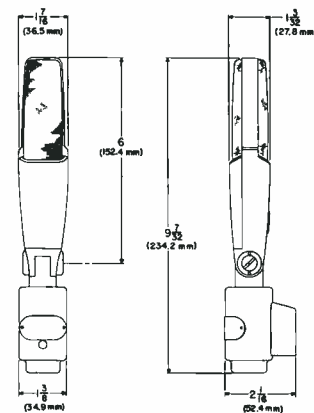


FIGURE B



OVER-ALL DIMENSIONS
FIGURE C

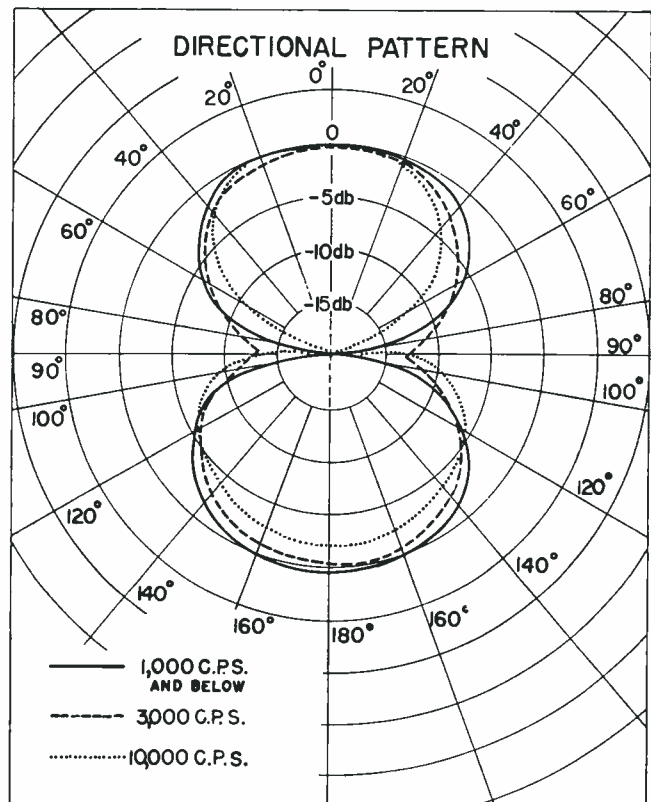


FIGURE D

MODEL 556S BROADCAST UNIDYNE II

General: Combining a highly effective unidirectional pattern and wide useful frequency range, the Shure Model 556S has become one of the world's most widely used microphones. The performance characteristics and unique construction make it ideal for both outdoor and indoor use in broadcasting, recording, public address and theatre-stage applications.

The Model 556S features:

- Cardioid directional characteristic especially adapted for optimum performance in adverse acoustic environments
- Cartridge and microphone body separately shock-mounted for quiet operation
- Convenient impedance selection
- Very rugged mechanical design for reliable operation under severe conditions of use

The self-tensioning swivel permits tilting through 45° forward and 80° backward.

SPECIFICATIONS

Type: Dynamic

Frequency Response: 40 to 15,000 Hz. See Fig. B.

Polar Pattern: Cardioid (Unidirectional) Response at rear down 15 db from front. See Figure D

Impedance: Equipped with multi-impedance switch, furnishing a choice of 3 impedances: "L" for 30-50 ohms; "M" for 150-250 ohms; and "H" for high impedance.

Output Level: 1,000 Hz. response

Model 556S 30-50 ohm "L" position
 Open circuit voltage.....— 83.5 db*(0.067 mv)
 Power level into 50 ohm.....— 56.5 db**
 EIA Microphone Rating
 Gm (Sensitivity).....—149.0 db***

Model 556S 150-250 ohms "M" position
 Open circuit voltage.....— 77.5 db*(0.13 mv)
 Power level into 250 ohm.....— 57.5 db**
 EIA Microphone Rating
 Gm (Sensitivity).....—149.0 db***

Model 556S High Impedance "H" position
 Open circuit voltage.....— 56.0 db*(1.58 mv)
 Loaded with
 100,00 ohm.....— 58.0 db**
 EIA Microphone Rating
 Gm (Sensitivity).....—152.0 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt per 10 microbars

*** 0 db = EIA Standard SE-105, August 1949



Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone is subjected to accident or abuse or if the case is opened.

Architect's Specification: The microphone shall be Shure Model 556S or equivalent—a moving coil type microphone with a frequency range of 40 to 15,000 Hz. This unit shall have a Cardioid horizontal polar characteristic. The cancellation at the rear shall be in the order of 15 db. The microphone shall be equipped with a three-position impedance change switch for adjusting the microphone rating impedance to 38 ohms, 150 ohms or 40,000 ohms. The microphone rating Gm (sensitivity at 1000 Hz.) shall be within ± 3 db of the following levels.

"L" Position of switch — 149 db

"M" Position of switch — 149 db

"H" Position of switch — 152 db

E.I.A. Standard SE-105, August, 1949

The microphone shall be provided with a swivel adjustable from 45° forward to 80° backward. The microphone shall be equipped with a vibration-isolation unit in combination with the stand connector, and it shall have a detachable Cannon Type cable connector capable of connection to a two-conductor shielded cable. The microphone shall mount on stand having $\frac{5}{8}$ "-27 thread. The overall dimensions shall be $7\frac{3}{4}$ (196.8 mm) \pm $\frac{1}{4}$ (6.4 mm) inches in height, $2\frac{3}{16}$ (55.6 mm) \pm $\frac{1}{8}$ (3.2 mm) inches in width and $3\frac{1}{16}$ (77.8 mm) \pm $\frac{1}{8}$ (3.2 mm) inches in depth.

U. S. Patents: 2,237,298; 2,305,596, and 2,305,597.

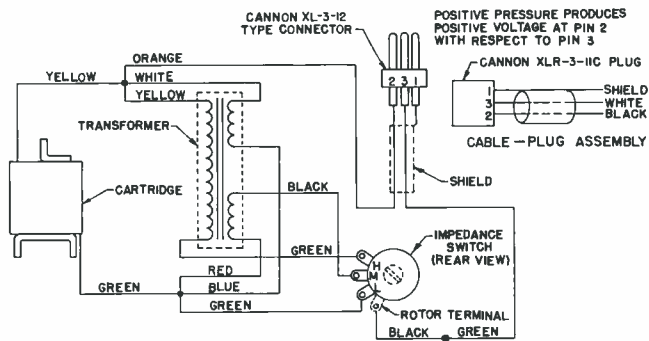


FIG. A.
INTERNAL CONNECTIONS

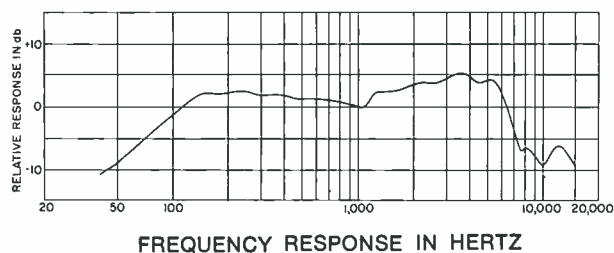


FIG. B.

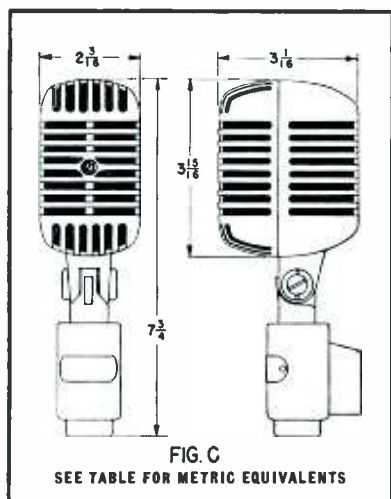
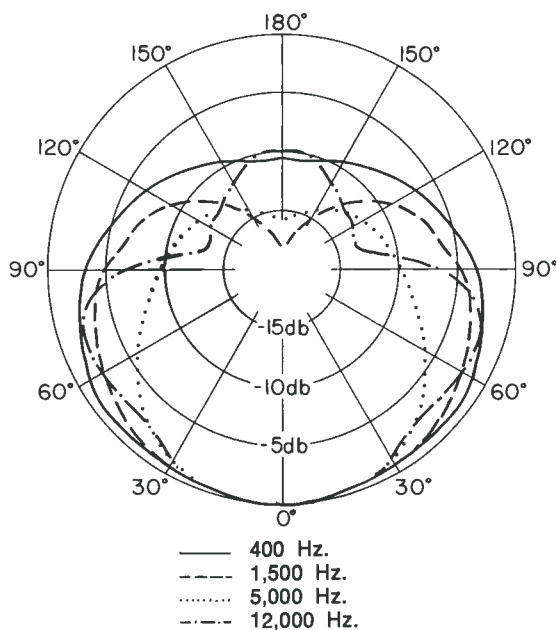


FIG. C
SEE TABLE FOR METRIC EQUIVALENTS

MODEL 556S	
Net Wt.	2 lb. (907 g)
Shipping Weight	3 1/2 lb. (1588 g)
Cable	20 ft. (6.1m) Two-Conductor
Height, Overall *	7 3/4" (196.8mm)
Height, Case *	3 15/16" (100.0mm)
Width	* 2 3/16" (55.6mm)
Depth	* 3 1/16" (77.8mm)
Case	Die-cast zinc
Finish	Satin Chrome
Stand Thread	Standard 5/8"-27 Thread
Cable Connector	Cannon XL-3-11 Type Connector
Shock Mount	Special vibration isolation unit of rubber construction
Swivel	Self-adjusting "Positive Action" swivel permitting tilting of head through 45° forward to 80° backward

*See Fig. C.



POLAR PATTERN
FIG. D.



The Shure Model 571 is a Studio quality Microphone especially adapted for applications in which very small size and excellent voice characteristics are essential.

Features include:

- Smooth peak-free voice response
- Small size, lightweight
- Ruggedness and dependability
- Steel case for magnetic shielding

An adaptation of the popular Model 570 Lavalier Microphone, the small size and smooth response of the Model 571 are ideally suited for inconspicuous stand or hand-held use, concealment in a studio or shooting location, hanging over stage, and a variety of other broadcast, motion picture and theatrical applications.

The A57R Stand Adapter furnished with the microphone, provides a convenient means for attaching the microphone to any $\frac{5}{8}$ "-27 fixture.

The Model 571 may be used for lavalier applications, if desired, by use of the accessory A57L "Flex Grip" lavalier assembly.

SPECIFICATIONS

Type: Dynamic

Frequency Response: From 50 to 10,000 cps.
See Figure A.

Polar Pattern: Omni-directional

Impedance: Properly matches any low impedance input from 50 to 250 ohms.

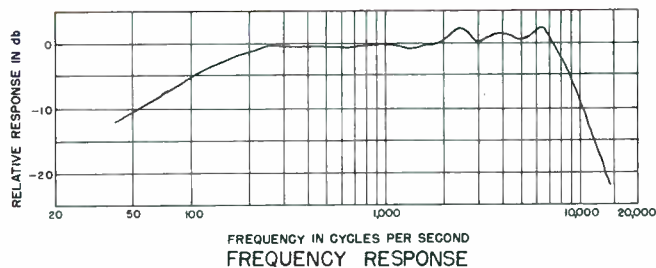
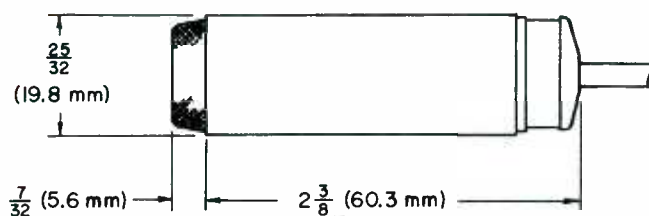
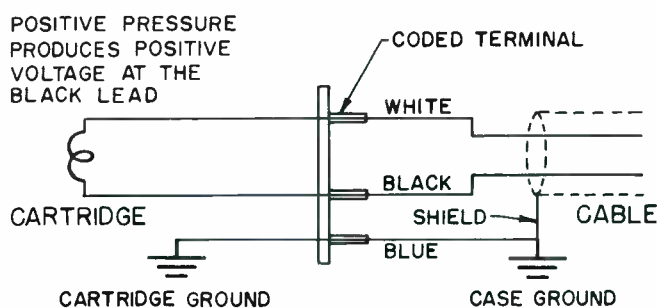


FIGURE A



OVERALL DIMENSIONS
FIGURE B



INTERNAL CONNECTIONS
FIGURE C



FIGURE D

Output Level:

1000 cps response

Open Circuit voltage level — 81.5 db* (0.085 mv)

Power Level — 60.5 db**

EIA Microphone Rating

Gm (sensitivity) —153 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

*** 0 db = EIA Standard SE-105, August 1949

Cable: Non-detachable 30 foot, two-conductor shielded

Case Finish: Non-reflecting gray with stainless steel grille

Dimensions: See Figure B

Net Weight: (Less cable) 2 ounces (58 grams)

Shipping Weight: 1½ Pounds (680 grams)

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone case is opened.

Architect's Specification: The microphone shall be the Shure Brothers, Inc. Model 571 Dynamic Microphone or equivalent. The microphone shall be a moving-coil (dynamic) type microphone with a frequency range of 50 to 10,000 cps. The unit shall have an omnidirectional polar characteristic. The microphone shall be a single impedance microphone having a rating impedance of 150 ohms. The microphone rating Gm (sensitivity) at 1000 cps shall be within ± 3 db of —153 db (EIA Standard SE-105, August 1949).

The microphone shall be provided with an A57R Stand Adapter for a convenient means of attaching the microphone to any 5/8"-27 fixture. The microphone shall be provided with 30 foot, two-conductor shielded cable. The overall dimensions shall be 2-19/32 inches (65.9 mm) in length and 25/32 inches (19.8 mm) in diameter.

The Shure Model 572G is a small studio quality microphone mounted on a slender flexible arm with a mounting flange attached.

Features include:

- Bright smooth voice response
- Small size and convenient mounting
- Ruggedness and dependability
- Unusually slender flexible arm construction for quiet, smooth action
- Steel case for magnetic shielding

An adaptation of the popular Model 571 $\frac{3}{4}$ " Dynamic Microphones, the 572G is ideally suited for studio and control room talk back or cuing systems, rostrums, language laboratories, paging, base station communications, and a wide variety of voice applications where a compact adjustable microphone installation with protected cabling is desired.

The Model 572G is especially suited for use wherever a customized installation with concealed cable is desired.

SPECIFICATIONS

Type: Dynamic

Frequency Response: From 50 to 10,000 cps
See Figure A

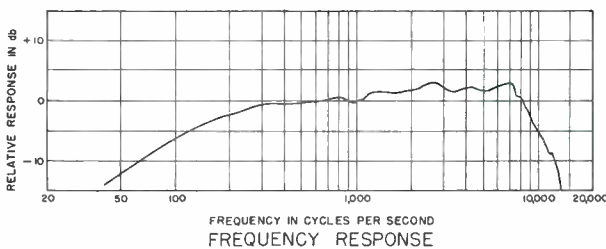


FIGURE A

Polar Pattern: Omnidirectional

Impedance: Properly matches any low impedance input from 50 to 250 ohms

Output Level: 1,000 cps response

Open Circuit voltage level.... —82.0 db*(.078 mv)

Power level —61.0 db**

EIA Microphone Rating

G_m (sensitivity) —153.5 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

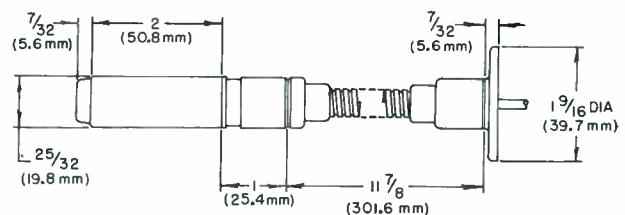
*** 0 db = EIA Standard SE-105, August 1949



Cable: Non-detachable 5 foot, two-conductor shielded

Case Finish: Non-reflecting gray with stainless steel grille. Flexible arm and flange are chrome plated

Dimensions: See Figure B



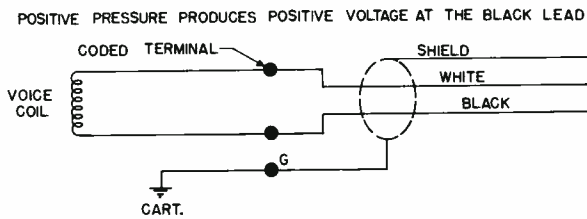
OVER-ALL DIMENSIONS
FIGURE B

Net Weight: 12 ounces (341 grams)

Packaged Weight: 1 pound 2 ounces
(510 grams)

ARCHITECT'S SPECIFICATION

The microphone shall be the Shure Brothers, Inc. Model 572G Dynamic Microphone or equivalent. The microphone shall be a moving coil (dynamic) type microphone with a frequency range of 50 to 10,000 cps. The unit shall have an omnidirectional polar characteristic. The microphone shall be a single impedance microphone having a rating impedance of 150 ohms. The microphone rating G_m (sensitivity) at 1,000 cps shall be within ± 3 db of —153.5 db (EIA Standard SE-105, August 1949).



INTERNAL CONNECTIONS
FIGURE C

The microphone unit shall be mounted on a flexible arm having a mounting flange. The microphone shall have a 5 foot (1.5 m), two-conductor shielded cable. The over-all dimensions shall be 15-1/4" (389 mm) in length and 25/32" (19.8 mm) in diameter.

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone is subjected to accident or abuse or if the case is opened.

SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

MODEL 544 UNIDYNE III**UNIDIRECTIONAL DYNAMIC MICROPHONES**

The Model 544 Series Unidyne III Microphones are slender dynamic microphones built to provide wide range reproduction of music and voice, and have an exceptionally uniform and effective unidirectional pickup pattern.

These microphones are particularly suitable for high quality theatre-stage sound systems, recording, cathedrals and churches, and other critical public address systems such as those used in political conventions and legislatures, hotels, stadiums, and public auditoriums—wherever a customized installation with concealed cable is desired.

The microphones feature:

- Unusually effective cardioid pickup pattern. Eliminates feedback (annoying loudspeaker "squeals"). In addition, they prevent echoing (boominess) that sometimes occurs in partially-filled halls. These microphones can also be used closer to loudspeakers than usual, without creating feedback problems.

- Response especially effective for announcing, narration, vocal music, and combo groups.
- Cartridge shock mounted for quiet operation.
- A cable especially selected for good shielding from "hum" pickup.
- Dependability and ruggedness under all operating conditions.
- The Model 544 Series Microphones are dual impedance for connection into a 50 to 250 ohm line or a high impedance input.

The low impedance connection is recommended where long cable lengths are required or under conditions of severe hum disturbance. The permissible cable length is practically unlimited, since neither response nor level is appreciably affected. For use with high impedance amplifiers, Shure Model A95A Line Matching Transformer is available for coupling the

low impedance line to the amplifier input. The Shure Model A95A transformer permits coupling a 50-250 ohm line to the high impedance input.

The Model 544 has a $\frac{3}{8}$ "-27 thread which fits conventional goosenecks or other flexible or fixed mounting.

The Model 544-G6 is equipped with a 6" (152.4 mm) flexible gooseneck.

The Model 544-G12 is equipped with a 12" (304.8 mm) flexible gooseneck.

The Model 544-G18 is equipped with an 18" (457.2 mm) flexible gooseneck.

The latter three models (544-G6, 544-G12, 544-G18) are supplied with a flange for mounting the flexible goosenecks to a flat surface.

Instructions for changing to Low Impedance

For low impedance application (50-250 ohms) pin #3 and pin #4 are used for balanced line connection. (See Figure C). In this case the white conductor must be removed from pin #2 of the adapter insert and soldered to pin #4 of the adapter insert. When the adapter insert is removed from the microphone, it is necessary to loosen the set screw in the adapter to prevent cable lead breakage as the adapter is loosened. After reassembling the adapter to the microphone, the set screw should tighten against the metal collar around the cable. This provides strain relief for the cable.

OPTIONAL ACCESSORIES

Line Matching Transformer.....A95A
Windscreen Assembly.....A2WS

Replacement Component

Model R45 Dynamic Replacement CARTRIDGE.

Important: Shure Microphone Cables are selected after exhaustive tests to insure superior performance in microphones because of low capacities, superior shielding properties and unusually long life under severe use.

Cables with plastic insulation should not be subjected to excessive soldering-iron heat. Carefully clean and tin the conductors and the connections to which the conductors are to be soldered. The soldering operation can then be done with a minimum of heat, thereby avoiding any possibility of damage to the cable.

MODEL 544

Architect's Specifications

The microphone shall be the Shure Model 544 or equivalent. The microphone shall be a moving coil type microphone with a frequency range of 40 to 15,000 Hz. This unit shall have a "cardioid" horizontal polar characteristic. The cancellation at the sides shall be approximately 6 db and the cancellation at the rear shall be 15 to 20 db. The microphone shall be a dual-impedance microphone with rated impedance of 150 ohms and 40,000 ohms. The microphone rating G_M (sensitivity) at 1,000 Hz shall be within ± 3 db of the following levels.

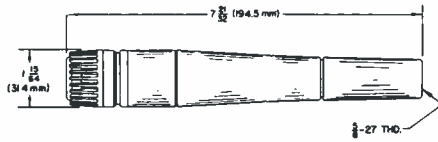
Low impedance.....—149 db

High impedance.....—151 db

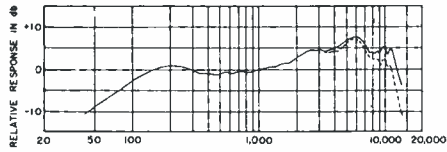
The microphone shall be provided with a fixed adapter having a $\frac{3}{8}$ "-27 thread. The overall dimension shall be $7\frac{21}{32}$ " (194.5 mm) $\pm \frac{1}{32}$ " in length and $1\frac{15}{64}$ " (31.4 mm) $\pm \frac{1}{64}$ " in diameter.

GUARANTEE:

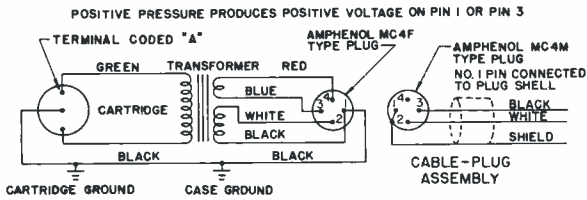
Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone is subjected to accident or abuse.



OVERALL DIMENSIONS
FIGURE A



FREQUENCY RESPONSE IN HERTZ
FIGURE B



INTERNAL CONNECTIONS
FIGURE C

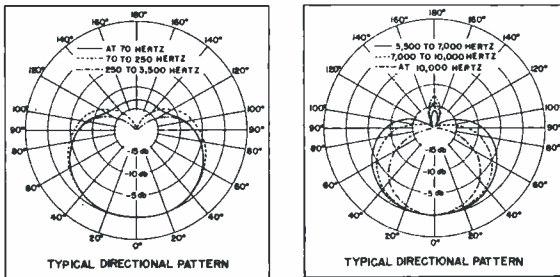


FIGURE D

SPECIFICATIONS

- Type: Dynamic
- Frequency Response: 40 to 15,000 Hz (See Figure B)
- Polar Pattern: Cardioid (Unidirectional) pattern—Effective rejection of sound at the rear of the microphone is uniform at all frequencies, while front pickup characteristics are uniform about the axis. (See Figure D)
- Impedance: Dual impedance for connection into a 50 to 250 ohm line, or high impedance input. The microphone is supplied for high impedance by connecting the shield and white conductor to the high impedance input. For balanced line low or medium impedance amplifier input, see instructions on changing to low impedance.
- Output Level: 1,000 Hz response.
- Model 544 Series Low Impedance
- Open Circuit Voltage.....—78 db* (.125 mv)
 - Power Level.....—57 db**
 - EIA Microphone Rating Gm (sensitivity)..... —149 db***
- Model 544 Series High Impedance
- Open Circuit Voltage.....—55 db* (1.76 mv)
 - EIA Microphone Rating Gm (sensitivity)..... —151 db***
- * 0 db = 1 volt per microbar.
** 0 db = 1 milliwatt with 10 microbars
*** 0 db = EIA Standard SE-105, August 1949.
- Cable: 7-foot (2.1 mm) two-conductor shielded with Amphenol MC4M type adapter insert on the microphone end.
- Case: Chrome-plated die-cast case and "Armo-Dur.®"
- Dimensions: See Figure A
- Net Weight: Model 544 - 0.8 pounds (363 grams)

SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

MODEL 561 OMNIDIRECTIONAL DYNAMIC MICROPHONE

General: The Shure Model 561 Dynamic Microphone is a low-impedance unit designed specifically as a high quality microphone for flexible gooseneck and general purpose use. This microphone features smooth response, ruggedness, and ability to withstand abnormal moisture and temperature conditions.

The Model 561 is a rugged dynamic microphone with attached cable and standard $\frac{5}{8}$ "-27 thread for direct mounting on flexible gooseneck or fixed pipe to conceal and protect cable. The microphone has excellent voice response for language lab systems, paging applications, and base-station communications. It is highly recommended for talk-back and cuing from professional control room installations in TV, film, and recording studios. Low impedance permits unusually long cable lengths to be used without affecting response or level.

Connections: The Model 561 may be connected directly to a standard low or medium impedance input amplifier.

Low impedance is recommended where long cable lengths are required or under conditions of severe hum disturbance. To achieve maximum freedom from hum disturbance and internal cable noise, a high quality two-conductor shielded cable (such as supplied with the microphone) should be used. The permissible cable length is practically unlimited, since neither response nor level is appreciably affected. For use with a high impedance amplifier, the Shure Model A95A Line Matching Transformer is available for coupling the low impedance line to the amplifier input. The transformer permits coupling a 50-250 line to the high impedance input.

Operation: No special precautions beyond ordinary care are necessary in operation of the Model 561 Microphone. It will operate efficiently and dependably under all normal conditions in hot or cold climates. To retain the full strength of the highly efficient permanent magnet and to maintain alignment of the structure, dropping or other severe mechanical shocks should be avoided.

A #4 Allen wrench is provided for tightening the #4-40 Allen setscrew (see Fig. B) to securely lock the Model 561 to a flexible gooseneck, fixed pipe, or stand.

Important: Shure Microphone Cables are selected after exhaustive tests to insure superior performance in microphones because of low capacities, superior shielding properties and unusually long life under severe use.

Cables with plastic insulation should not be subjected to excessive soldering-iron heat. Carefully clean and tin the conductors and the connections to which the conductors are to be soldered. The soldering operation can then be done with a minimum of heat, thereby avoiding any possibility of damage to the cable.

Replacement Cartridge: Model R5D

(Over)



Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone case is opened.

ARCHITECT'S SPECIFICATION

The microphone shall be a Shure Model 561 or equivalent—a moving-coil (dynamic) type microphone with a frequency range of 40 to 10,000 Hz. The unit shall have an omni-directional characteristic. The microphone shall be a low impedance microphone with a rated impedance of 150 ohms.

The microphone rating Gm (sensitivity) at 1,000 Hz. shall be within ± 3 db of -149 db (EIA Standard SE-105, August 1949).

The microphone shall be provided with a $\frac{5}{8}$ "-27 thread. The microphone shall be provided with 4 foot (1.2 meter) two conductor shielded cable. The overall dimensions shall be $2\frac{1}{4}$ " inches (67.1 mm) in length and $1\frac{3}{4}$ " inches (34.5 mm) in diameter.

SPECIFICATIONS

Frequency Response: 40 to 10,000 Hertz. Rising characteristic to 4,500 Hertz. See Fig. C.

Polar Pattern: Omni-directional

Impedance: 150 to 250 ohm

Voltage Sensitivity: 1,000 Hz. response

Open circuit voltage level.....	— 77 db* (0.141 mv)
Loaded with 200 ohms.....	— 83 db*
Power level into 200 ohm.....	— 56 db**
EIA Microphone Rating Gm (sensitivity).....	— 149 db***

* 0 db = 1 volt per microbar

** 0 db = 1 milliwatt with 10 microbars

*** EIA = Standard SE-105, August 1949

Cable: 4 foot (1.2 meter) 2 conductor shielded

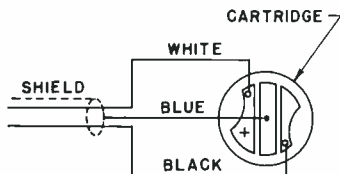
Stand Thread: $\frac{5}{8}$ "-27

Finish: Silver and black with stainless steel grille

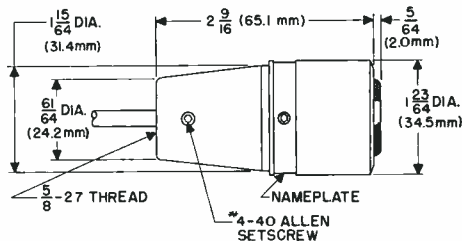
Overall Dimensions: See Fig. B

Net Weight: 5 ounces (142 grams)

Packaged Weight: 9 ounces (255 grams)



INTERNAL CONNECTIONS
FIGURE A



OVERALL DIMENSIONS
FIGURE B

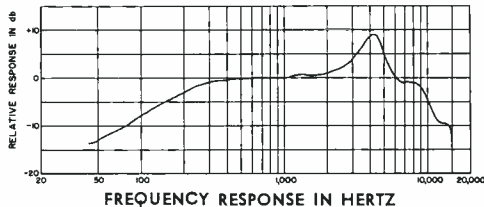
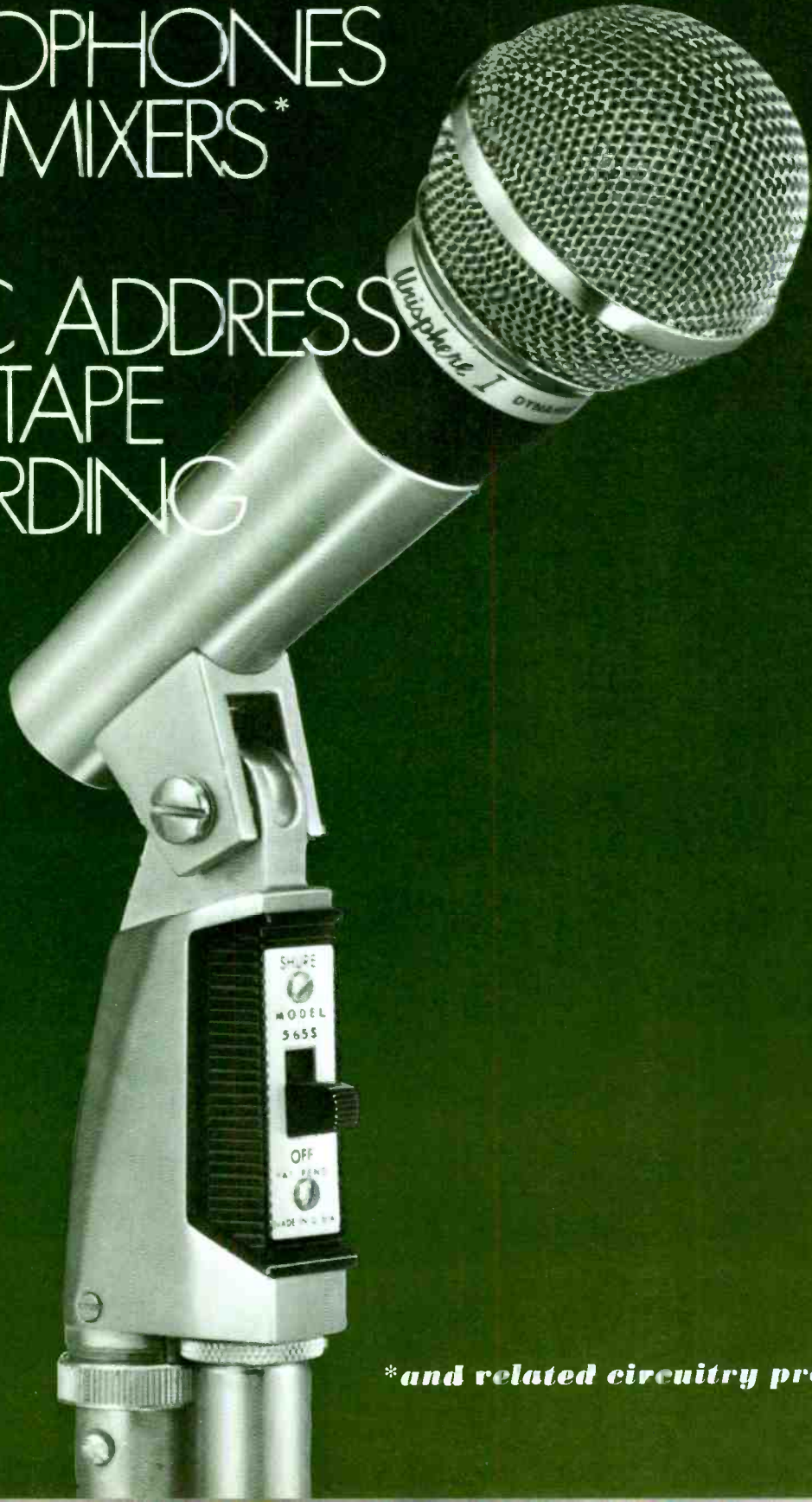


FIGURE C

SHURE

MICROPHONES
AND MIXERS*
FOR
PUBLIC ADDRESS
AND TAPE
RECORDING

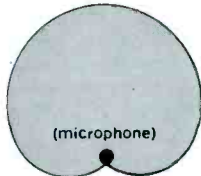


**and related circuitry products*

Selecting the Correct **SHURE** Microphone for

STEP I PICK-UP PATTERNS

UNIDIRECTIONAL



WHAT IT IS

These microphones pick up sound mainly from the front, while suppressing sound and noise coming from the back. The most generally useful unidirectional pick-up pattern is the CARDIOID (meaning "heart-shaped"). This pattern will suppress rear sounds at least 70% while picking up front sound over a broad area. Sounds 120° to 180° off-axis are almost entirely suppressed.

In addition to the Cardioids (the Unidyne IV, Unidyne III, Unidyne II, Unidyne A, Unidyne B and the Unisphere Series of unidirectional microphones) other Shure unidirectional microphones are described as Super-Cardioid (Model 330).

WHERE TO USE IT

The most commonly applied solution to feedback problems. Greatly simplifies planning of sound installations. With the rear of the microphone rejecting sound, the microphone can be placed so that sound projecting from the loudspeaker cannot re-enter the microphone to generate feedback. Performers can work much further away from unidirectional microphones than with omnidirectional microphones.

Effectively suppresses audience noises, coughing, shuffling feet, etc. Ideal for fixed installation before an individual performer or a small group. Pickup of large groups can be effected with multiple microphone installation.

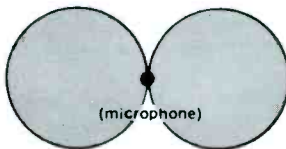
OMNIDIRECTIONAL



These microphones pick up sound more-or-less evenly from all directions. In effect, they are nondirectional. They can be handheld, stand-mounted, or worn around the neck. This type includes the greatest number of microphones, together with the widest price range and response characteristics.

Good for general applications where feedback or audience noise is no great problem. Extremely versatile. Practically all ultra-slim "probe" type microphones are omnidirectional units—they are ideal for "walk-around" and interview situations. [Note: Shure also makes unidirectional "probes" (See page 4)]

BIDIRECTIONAL



Pick up sound from front and back while suppressing sound from sides, top and bottom.

Ideally suited for use when two performers, or groups, are on opposite sides of microphone. Allows the same freedom of movement as unidirectional microphones, while solving difficult feedback problems such as rooms with "hard" ceilings or where loudspeakers are mounted over or to the side of the microphone.

STEP II FREQUENCY RESPONSE

The fidelity of reproduction afforded by the microphone depends on three factors of the frequency response:

1. Response Range. In general, the more extended the frequency response of

the microphone is, the more faithful the reproduction will be.

2. Smoothness. A high fidelity microphone is made so that no conspicuous abrupt peaks or valleys of output occur at any frequency. This results in an essentially smooth frequency response curve.

3. Flatness. A flat frequency response curve is one showing output remaining at approximately the same level throughout the frequency range. This means that the microphone responds

equally well at any frequency, an essential of high fidelity reproduction.

While the microphone with the widest range, smoothest and flattest frequency response curve will give the highest fidelity, it is not necessarily the best microphone for every application. [For example, a shaped (peaked) response is often devised to achieve added "presence" for microphones used in paging and communications systems.] Frequency response required for various applications is summarized below:

RESPONSE REQUIREMENTS

Use	Response Range	Response Character	Possible Microphones
Recording, broadcasting, highest quality public address for music and voice	50-15,000 Hz	Flat Smooth	Ribbon Dynamic
High quality public address for voice and music	70-10,000 Hz	Flat or slightly rising No prominent peaks	Ribbon Dynamic Some crystals or ceramics
Indoor paging systems and public-address systems for voice use	200-5,000 Hz	Slightly rising No prominent peaks	above plus Some Controlled Magnetics
Outdoor paging systems or systems in noisy locations. For Voice use when maximum intelligibility required.	300-3,500 Hz	Rising A peak in the 2000 to 3500 Hz region is often desirable	Controlled Magnetic Dynamic Carbon Some Ceramics

Public Address Applications

MICROPHONES FOR TAPE RECORDING

STEP III KINDS OF MICROPHONES

WHAT IT IS

WHERE TO USE IT

SHURE SERIES NO. 200 CERAMIC

Similar to crystal microphone in design but uses man-made ceramic element. Economical, superior to crystal for outdoor use. Unaffected by severe temperature and humidity changes. High impedance.

Wherever price is an important factor. Shure makes omnidirectional and unidirectional ceramic microphones—all are economical, rugged, attractively styled.

SHURE SERIES NO. 300 RIBBON

Virtually uniform frequency response. Definitely among the very best available. Extremely rugged for normal use indoors. Adjustable impedance.

Wherever quality of response is the first consideration in broadcasting, professional recording, or public address, look to Shure Ribbon microphones (unidirectional and bidirectional). Excellent for music. Not recommended for outdoor use.

SHURE SERIES NO. 400 CONTROLLED MAGNETIC

Balanced armature . . . rugged, stable, high output. Originally developed for the military to combine the advantages of the carbon and dynamic microphone . . . with none of the disadvantages—such as the need for external power supply in a carbon. Has the ability to directly supply any impedance, without transformer. Modestly priced, extremely dependable performance.

Indoors, outdoors—wherever rugged performance must be coupled with modest price and suitable response. Ideal for paging, language labs, portable P.A. systems. Omnidirectional only.

SHURE SERIES NO. 500 DYNAMIC

Moving-coil microphone, available in a wide range of prices and types. The better dynamic units are among the very best microphones for frequency response. Smooth response (up to 20,000 Hz).

The dependable unit where exceptional performance, ruggedness and reliability are required, such as broadcasting and better quality Public Address. Superior in frequency response to ceramic, crystal, carbon, and Controlled Magnetic units. Unidirectional, omnidirectional.

SHURE SERIES NO. 700 CRYSTAL

Good quality at a low price. Response is somewhat limited (normally about 10,000 Hz maximum). Special sealed crystals used in Shure units mean you can use them where humidity is high or outdoors (except in direct sun over prolonged periods). High Impedance.

Crystal units are primarily used where price is a limiting factor. Very high in output.

STEP IV PRICE

While Shure microphones are available in a wide price range, it is well to keep in mind that they are the lowest cost single item in the average system—and that their function is critical! In truth, your system can be no better than the microphone that originally converts the sound waves into electrical impulses. In general, unidirectional cardioid microphones are the most expensive (as a category); however, some fine quality omnidirectional and bidirectional microphones can cost as much as unidirectionals. Where economy is the major factor, we suggest that you look to crystal, ceramic or "Controlled Magnetic" units. Where quality is first and foremost, we recommend ribbons or dynamics.

UPGRADE YOUR SYSTEM

In all probability, the weakest link between you and good, professional sounding live tapes is the microphone you're using. Virtually without exception, the microphones supplied with tape recorders—even relatively expensive models—are significantly below the performance and capabilities of the tape recorder itself. Further, with a good unidirectional microphone (such as the Shure Unidynes and Unispheres) you can control objectional background noise, room reverberations, and echoes. Voices and instruments will sound far more natural with less overloading of the tape, "fuzziness," and other distortions.

WHICH MICROPHONE TO USE

Without exception, every microphone in this brochure can be used with a tape recorder. (NOTE: Refer to your tape recorder instruction manual as to the microphone impedance [High or Low] your tape recorder requires.) The finest microphones are the *Dynamic* and *Ribbon* type microphones. Unidirectional (or *CARDIOID*) microphones pick up sound from the front only and are highly recommended because they tend to suppress background noise. We recommend Flat, Smooth wide-range frequency response microphones in the 50-15,000 Hz range. See text at left.

FOR STEREO RECORDING

Shure makes many specially matched pair stereo microphones at no extra cost. They are identical to standard microphones except they are matched to plus or minus 1 db in level, and 1½ db in frequency response.

See page 16.



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Selecting the Correct Shure Microphone for Public Address Applications	Pages 2-3
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Unidirectional Crystal and Ceramic Microphones	Page 11
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PATENT NOTICE: Shure microphones may be manufactured under one or more of the following U.S. Patents: 3,132,713; 3,240,883; D-171,055; D-178,018; D-194,151; D-194,749; and D-198,850.

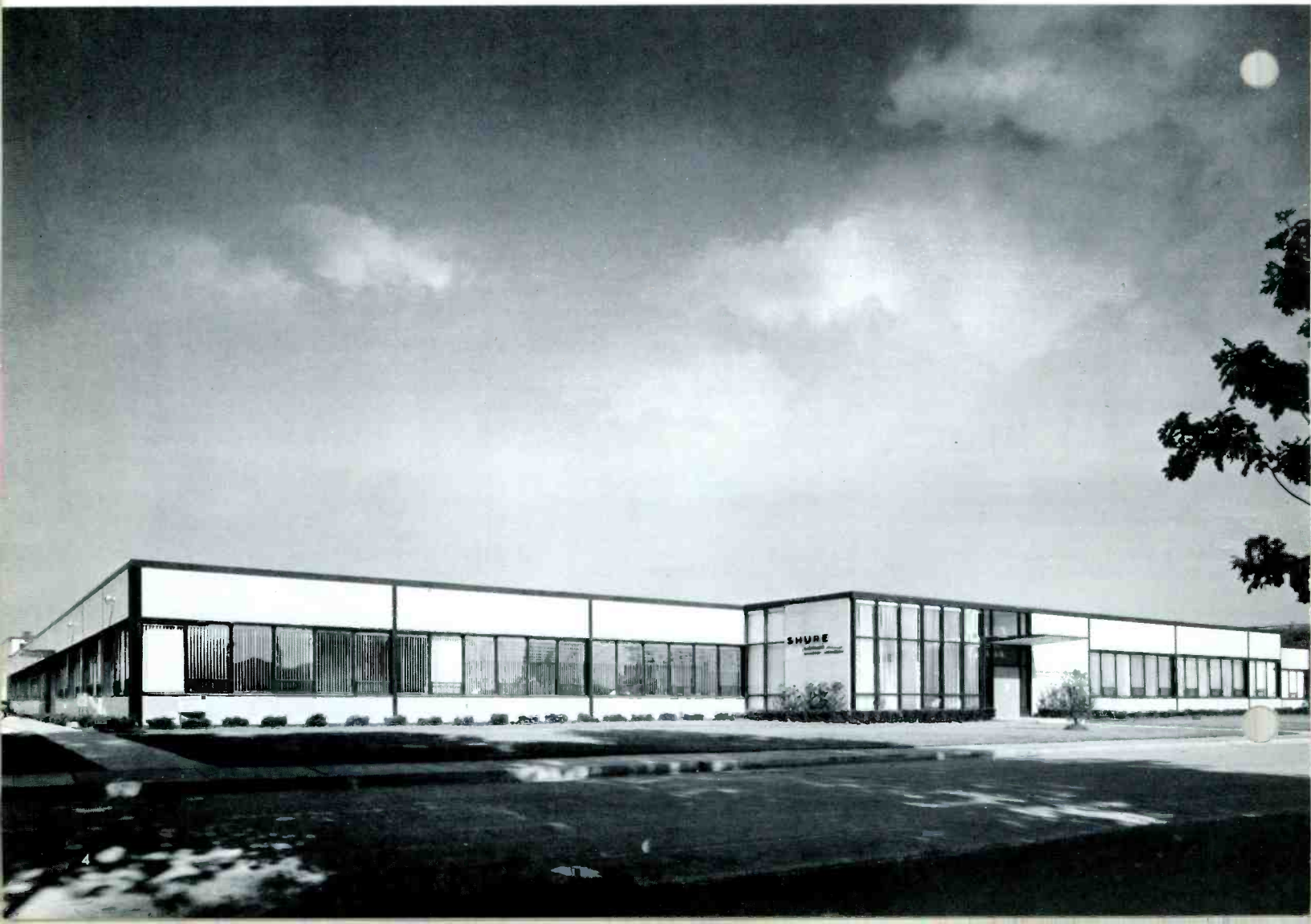
FIRST IN PUBLIC-ADDRESS AND TAPE RECORDING MICROPHONES

Recognizing that the quality of reproduction a public address or tape recording system provides is absolutely limited by the quality of sound put into it by the microphone, Shure, for over a quarter century has provided the highest quality in microphones.

For Public Address Systems: Shure microphones have consistently been selected by sound engineers and audio specialists for installations where quality of reproduction or difficult acoustics required a superior microphone for applications as diverse as theaters, nightclubs, auditoriums, music halls, schools, churches, meeting halls, gymnasiums, legislative or judicial chambers, or any other indoor or outdoor application.

For Tape Recording: The Shure microphones in this catalog greatly exceed the performance specifications of the microphone supplied with your tape recorder. Many models are in use by professional recording engineers. Specially matched pairs of microphones for stereo recording are available at no extra cost.

Shure microphones are rugged—may be depended upon to deliver consistent performance for years without deviation from their original standards. Shure microphone accessories also provide additional versatility and practical value. This catalog contains information on Shure products designed to give the utmost performance for both public-address and tape recording use. Write for other catalogs covering Communications, Paging, Dispatching, Amateur Radio and CB microphones.



UNIDYNE® Cardioid Dynamic Microphones



UNIDYNE IV Microphones MODELS 548 • 548S • 549

The premier member of the world-famed Unidyne family of microphones. An ultra high quality, super-rugged microphone with an unusually effective cardioid pickup pattern. Unusually smooth, wide-range response for voice and music. Has all the superb feedback and "boom" suppressing characteristics of the Unidyne III (below), combined with exceptionally rugged construction. Easily serviced in the field. Specially cushioned, reinforced cartridge. Cannon type connectors.

Model 548 Unidyne IV: For stand or hand usage. Includes A25B swivel adapter. **List Price: \$105.00**

Model 548S Unidyne IV: Mounted on a lifetime swivel that also contains On-Off switch. **List Price: \$110.00**

Model 549 Unidyne IV: Professional, stage version of Unidyne IV. Special vibration-isolation shock-mount to insulate against vibration and mechanical shocks. Special "storage" packaging . . . ideal for performers who carry their own unit to clubs and auditoriums. Less cable. Combination impedance selection-on-off switch. **List Price: \$158.00**

SPECIFICATIONS

Frequency Response: 40 to 15,000 Hz.

Impedance and Output Levels: Models 548, 548S Dual. Low —57 db (0 db = 1 milliwatt per 10 microbars); .131 millivolts/microbar. High —55db (0 db = 1 volt per microbar); 1.76 millivolts/microbar.

Model 549—dual (50 ohms) —56 db (0 db = 1

milliwatt per 10 microbars); .067 millivolts/microbar. M (250 ohms) —56 db (0 db = 1 milliwatt per 10 microbars); 149 millivolts/microbar.

Cable: Models 548, 548S: 15-foot, two conductor shielded with Cannon XLR-3-11C Connector on microphone end. Model 549: Less cable



UNIDYNE III Microphones MODELS 545 • 545S • 545L • 544 • 546 • 547

Recommended for use in any location where feedback prevents good sound reproduction.

Small and strikingly handsome, the acoustical design of the Unidyne III Microphones approaches the theoretical ideal of the uniform cardioid pickup pattern. Reproduces the human voice with remarkable fidelity. A favorite choice for singers and entertainers. Low frequency characteristics eliminate boominess, making them especially good for pickup of drums and bass instruments.

Model 545 Unidyne III: For hand or stand usage. Includes an A25B Swivel adapter. **List Price: \$89.00**

Model 545S Unidyne III: Mounted on a lifetime swivel that also contains the On-Off switch. **List Price: \$94.00**

Model 545L Unidyne III: Designed for lavalier use. Lavalier cord included. Can also be mounted on a flexible gooseneck. **List Price: \$74.00**

Model 544 Unidyne III: The basic microphone for "gooseneck" mounting. **List Price: \$84.00**
To obtain microphones complete with "goosenecks," order Models 544-G6 (\$87.00), or 544-G12 (\$88.00), or 544-G18 (\$89.00), for 6-inch, 12-inch, or 18-inch goosenecks.

Model 546 Unidyne III: Features a special live-rubber, vibration-isolating shock mount. Recommended for high quality public address systems and tape recording—especially where floor or stage is "shaky." **List Price: \$142.00**

Model 547 Unidyne III: Stage version of Model 546. Includes storage case. Less cable. **List Price: \$142.00**

SPECIFICATIONS

Frequency Response: All models except 546 & 547—50 to 15,000 Hz. Model 546, 547—40 to 15,000 Hz.

Impedance and Output Level:

Models 545, 545S, 544: Dual. Model 545L: Low. Low —57db (0 db = 1 milliwatt per 10 microbars); .141 millivolts/microbar. High —55 db (0 db = 1 volt per microbar); 1.760 millivolts/microbar.

Model 546, 547—Dual: L (50 ohms) —56 db (0 db = 1 milliwatt per 10 microbars); .067 millivolts/microbar. M (250 ohms) —56 db (0 db =

1 milliwatt per 10 microbars); .149 millivolts/microbar.

Cable:

Model 545, 545S: 15-foot, 3-conductor shielded with an Amphenol MC4M Type Plug connector.

Model 545L: Attached 20-foot, 2-conductor shielded.

Model 544: Attached 7-foot, 3-conductor shielded.

Model 546: 20-foot, 2-conductor shielded with a Cannon XL-3-11 Type Connector.

Model 547: Less cable.



SHUREfamous **UNIDYNE®** and **UNISPHERE®****UNIDYNE II Series****MODELS 55S • 55SW • 556S**

Famed Throughout the World for Ruggedness and Reliability.

The Unidynes are the largest selling microphones throughout the world—used consistently by famed celebrities for those important events where the faithfulness of sound reproduction is critical. Model 55S Unidyne II is highly recommended for fine quality public-address, theater-stage sound systems, recording and remote broadcasting, and low-gain tape recording.

Model 556S Unidyne II is specially constructed and tested to meet the requirements of the broadcast and television studio, and is held within close tolerances in frequency response and directivity. The Model 556S is provided with vibration-isolation unit of live rubber construction in the stand connector. Includes multi-impedance switch for high, medium or low impedance.

Model 55S Unidyne II: Without On-Off Switch. **List Price: \$87.00**

Model 55SW Unidyne II: With On-Off Switch. **List Price: \$89.00**

Model 556S Unidyne II: Features a special live-rubber, vibration-isolating shock mount. **List Price: \$142.00**



Model
556S



Model
55SW

SPECIFICATIONS

Frequency Response: Models 55S and 55SW—50 to 15,000 Hz.
Model 556S—40 to 15,000 Hz.

Impedance and Output Level:

Models 55S and 55SW: Low (30 to 50 ohms) —55.5 db (0 db = 1 milliwatt per 10 microbars); .071 millivolts/microbar. Medium (150 to 250 ohms) —56.5 db (0 db = 1 milliwatt per 10 microbars); .141 millivolts/microbar. High —55.5 db (0 db = 1 volt per microbar); 1.68 millivolts/microbar.
Model 556S: Low (30 to 50 ohms) —56.5 db (0 db

= 1 milliwatt per 10 microbars); .067 millivolts/microbar. Medium (150 to 250 ohms) —57.5 db (0 db = 1 milliwatt per 10 microbars); .130 millivolts/microbar. High —56 db (0 db = 1 volt per microbar); 1.58 millivolts/microbar.

Cable:

Models 55S and 55SW: 15-foot, 2-conductor shielded with an Amphenol MC3M Type Connector.

Model 556S: 20-foot, 2-conductor shielded with Cannon XL-3-11 Type Connector.



Model
580SB

Model
580SA

UNIDYNE A Microphones**MODELS 580SA • 580SB**

The Unidyne A Series of microphones offers unidirectional problem-solving ability at a moderate cost with a highly effective cardioid pickup pattern—permits microphones to be located unusually close to loudspeakers. Solves feedback and boominess problems in low-budget sound systems. Built-in On-Off switch. Versatile: can be used on a stand, or in the hand, indoors or out. Includes A25B Swivel Adapter (5/8" stand thread). The case is satin chrome with stainless steel grille.

Model 580SA Unidyne A: High impedance. **List Price: \$62.00**

Model 580SB Unidyne A: Low impedance. **List Price: \$62.00**

SPECIFICATIONS

Frequency Response: 50 to 13,000 Hz.

Impedance and Output Level:

Model 580SA: High —56.5 db (0 db = 1 volt per microbar); 1.48 millivolts/microbar.

Model 580SB: Low (150 to 250 ohm) —57 db (0 db

= 1 milliwatt per 10 microbars); .105 millivolts/microbar.

Cable:

Model 580SA: Non-detachable 15-foot, one-conductor shielded.

Model 580SB: Non-detachable 15-foot, two-conductor shielded.

UNIDYNE B Microphones **MODELS 515SA • 515SB**

Lowest cost Unidyne, ever. Has the feedback suppression and uniform, symmetrical pick-up pattern features that have made Unidynes world famous. An excellent choice where budget is the prime consideration. Can be used on stand, or in hand. Built-in On-Off switch. Includes A25B swivel adapter.

Model 515SA Unidyne B: High Impedance. **List Price: \$42.00**

Model 515SB Unidyne B: Low Impedance. **List Price: \$42.00**

SPECIFICATIONS

Frequency Response: 80 to 13,000 Hz.

Impedance and Output Level: Model 515SA: High —58 db (0 db = 1 volt per microbar); 1.25 millivolts/microbar. Model 515SB: Low (25 to 200

ohm) —59 db (0 db = 1 milliwatt per 10 microbars); .089 millivolts/microbar.

Cable: Model 515SA: Non-detachable 15-foot, one-conductor shielded. Model 515SB: Non-detachable 15-foot, two-conductor shielded.



Model
515SA &
515SB



family of Cardioid Dynamic Microphones

SHURE

UNISPHERE I Microphones **MODELS 565 • 565S • 566**

Now! You can get all the superb feedback-control and uniform cardioid pickup pattern features that have made the Unidyne family of microphones world-renowned for solving difficult public-address problems—with the added problem-solving ability achieved through special filter assemblies that effectively control explosive breath sounds ("POP") and minimize wind noise in outdoor locations (eliminating the need for windscreens). The Unisphere I provides excellent reproduction of voice and music—can be effectively used outdoors and indoors.

Model 565 Unisphere I: For stand or hand usage. Includes an A25B swivel adapter. **List Price: \$100.00**

Model 565S Unisphere I: On-Off switch included as part of the swivel connector assembly.
List Price: \$105.00

Model 566 Unisphere I: Features a built-in vibration-isolation shock mount. **List Price: \$147.00**

SPECIFICATIONS

Frequency Response: Models 565 and 565S—50 to 15,000 Hz. Model 566—40 to 15,000 Hz.

Impedance and Output Level:

Models 565 and 565S: Dual: Low —57 db (0 db = 1 milliwatt per 10 microbars); .141 millivolts/microbar. High —54.5 db (0 db = 1 volt per microbar); 1.88 millivolts/microbar.

Model 566 Dual: Low (30 to 50 ohms) —55 db (0 db = 1 milliwatt per 10 microbars); .075 milli-

volts/microbar. Medium (250 ohms) —55 db. (0 db = 1 milliwatt per 10 microbars); .158 millivolts/microbars.

Cable:

Model 565 and 565S: 15-foot, three-conductor shielded with Amphenol MC4M Type Connector. Model 566: 18-foot, two-conductor shielded with Cannon XL-3-11 Type Connector.



Model 566

Model 565S

Model 565

UNISPHERE A Microphones **MODELS 585SA • 585SB • 585SAV • 585SBV**

The Unisphere A Series of Microphones are economical unidirectional dynamic microphones featuring special filters that provide protection from wind and "pop" (explosive breath sounds). They also eliminate annoying loudspeaker "squeal" caused by feedback. These models are particularly suitable for use in locations where omnidirectional microphones may not operate properly because of poor acoustics or where wind creates a problem. The Model 585 Series comes complete with shock-mounted cartridge, On-Off switch, detachable cable, and a Model A25B swivel adapter.

The Model 585SAV and 585SBV are two of the most ingenious microphones ever designed because the volume control on the microphone case enables the user to change the loudness of the P.A. system at the microphone location. Ideal for applications where the amplifier controls are inaccessible or where the speaker or singer wants to control his own volume for dramatic effects.

Model 585SA Unisphere A: High impedance. **List Price: \$68.00**

Model 585SB Unisphere A: Low impedance. **List Price: \$68.00**

Model 585SAV Unisphere A: With adjustable volume control; High impedance. **List Price: \$76.00**

Model 585SBV Unisphere A: With adjustable volume control; Low impedance. **List Price: \$76.00**

SPECIFICATIONS

Frequency Response: 50 to 13,000 Hz.

Impedance and Output Level:

Models 585SA and 585SAV: High —56.5 db (0 db = 1 volt per microbar); 1.48 millivolts/microbar.

Models 585SB and 585SBV: Low —56.5 db (0 db = 1 milliwatt per 10 microbars); .105 millivolts/microbar.

Cable:

Models 585SA and 585SAV: 15-foot, one-conductor, shielded with an Amphenol MC1F Type Connector.

Models 585SB and 585SBV: 15-foot, two-conductor shielded with an Amphenol MC2M type Connector.



Model 585SA

Model 585SB

Model 585SAV & 585SBV

UNISPHERE B Microphones **MODELS 588SA • 588SB**

Maximum feature dynamic microphones at minimum cost! True cardioid pickup pattern for feedback control; superior "pop" rejection; shock-mounted cartridge to reduce handling noises; On-Off switch; trouble-free Cannon connector—all for only \$60! Includes Model A25B swivel adapter and long-life 15-foot cable.

Model 588SA Unisphere B: High impedance. **List Price: \$60.00**

Model 588SB Unisphere B: Low impedance. **List Price: \$60.00**

SPECIFICATIONS

Frequency Response: 80 to 13,000 Hz.

Impedance and Output Level: Model 588SA: High—59 db (0 db = 1 volt per microbar); 1.11 millivolts/microbar. Model 588SB: Low (25 to 200 ohm) —59.5 db (0 db = 1 milliwatt per 10 microbars);

.085 millivolts microbar.

Cable: Model 588SA: 15-foot, one-conductor shielded, with Cannon XLR-3-11C connector on microphone end. Model 588SB: 15-foot, two-conductor shielded, with Cannon XLR-3-11C connector on microphone end.



Model 588SA

Model 588SB

Omnidirectional Dynamic Microphones

Vocal Sphere MODEL 579SB



Model
579SB

A superb sounding omnidirectional microphone that delivers extremely natural, lifelike voice reproduction for vocalists or speakers. Effective built-in wind and "pop" filters reduce breath noises, and the isolated cartridge mount reduces handling noises. Built-in On-Off switch with locking switch plate included to lock in "On" position. Includes Model A57S swivel adapter and long-life 20-foot cable.

Model 579SB Vocal Sphere: Low impedance. **List Price: \$75.00**

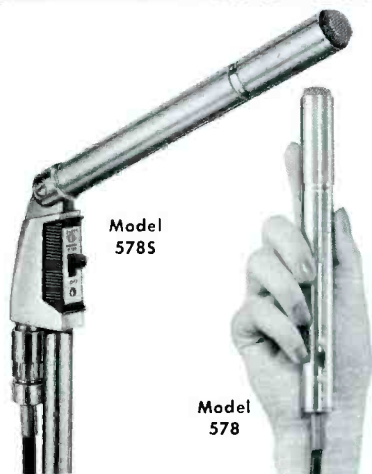
SPECIFICATIONS

Frequency Response: 50 to 15,000 Hz.

Impedance and Output Level: Low (25 to 200 ohms)
—58.5 db (0 db = 1 milliwatt per 10 microbars); 100 millivolts/microbar.

Cable: 20-foot, two-conductor shielded, rubber-jacketed with Cannon XLR-3-11C connector at microphone end.

MODELS 578 • 578S Omnidyne Ultra-Slim Probes



Model
578S

Model
578

Strikingly modern ultra-slim ($\frac{3}{4}$ inch diameter) design. Inconspicuous because of slender shape. Smooth, natural response without change in pickup pattern or sensitivity from 50 to 17,000 Hz. Built-in wire mesh "pop" filter reduces breath noise. Extremely rugged construction. Use indoors and outdoors. Satin chrome steel case provides magnetic shielding as well as good looks. Model 578 includes a special slip-in swivel stand adapter for stand or hand-held use; it also has a built-in "On-Off" switch with locking switch plate included to lock in "On" position. Model 578S mounted on swivel switch assembly with "On-Off" switch as well as attached Cannon XL-3-11 type cable connector.

Model 578 Omnidyne: For hand or stand use. **List Price: \$87.00**

Model 578S Omnidyne: With attached swivel assembly. **List Price: \$95.00**

SPECIFICATIONS

Frequency Response: 50 to 17,000 Hz.

Impedance and Output Level: Dual.
Low —60 db (0 db = 1 milliwatt per 10 microbars); .100 millivolts/microbar.
High —59 db (0 db = 1 volt per microbar); 1.11 millivolts/microbar.

Cable:

Model 578: Non-detachable 15-foot three-conductor shielded.

Model 578S: Detachable 15-foot two-conductor shielded.

MODEL 576 Omnidyne Dynamic



Model
576

A superb professional-quality dynamic probe microphone (with striking slim design and $\frac{3}{4}$ " diameter) designed for television, radio-TV broadcasting and recording studios. Features smooth, natural, wide-range response from 40 to 20,000 Hz. for authentic pickup of voice or music. The Model 576 is an ideal hand-held microphone because of its unique "feel" and "balance." Rugged steel case provides effective magnetic shielding as well as good looks. Finished in nonreflecting gray with stainless steel grille.

Model 576: Probe Dynamic. **List Price: \$184.00**

SPECIFICATIONS

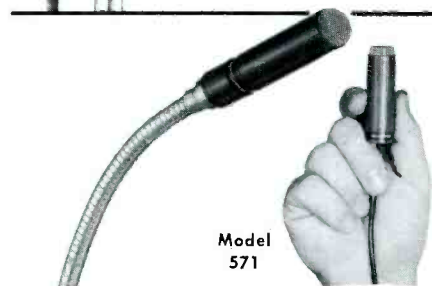
Frequency Response: 40 to 20,000 Hz.

Impedance and Output Level: Dual.
50 ohms —60 db (0 db = 1 milliwatt per 10 microbars); .050 millivolts/microbar.

150 ohms —60 db (0 db = 1 milliwatt per 10 microbars); .094 millivolts/microbar.

Cable: 25-foot three-conductor shielded broadcast cable.

MODEL 571 Omnidyne Miniature Microphone



Model
571

This extremely small microphone is suitable for hand-held and stand use. Features smooth peak-free response from 50 to 10,000 Hz. for voice applications where a small, inconspicuous microphone should be used. Use in hand, on stand, hang over stage, conceal in studio and other broadcast, motion picture, theatrical and public-address applications. A Model A57R Swivel Adapter is included.

List Price: \$100.00

SPECIFICATIONS

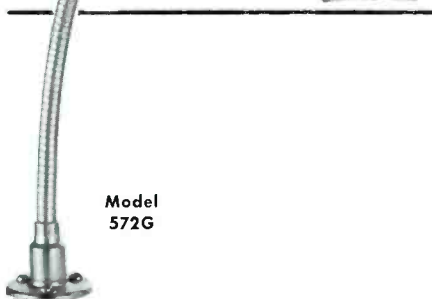
Frequency Response: 50 to 10,000 Hz.

Impedance and Output Level:
Low —61.0 db (0 db = 1 milliwatt per 10 micro-

bars); .079 millivolts/microbar.

Cable: Non-detachable 30-foot, two-conductor shielded.

MODEL 572G Omnidyne Gooseneck Microphone



Model
572G

Features the same response and size characteristics of Model 571, plus the added feature of permanent mounting on new small-diameter, ultra-quiet gooseneck. Comes complete with the 12-inch gooseneck and mounting flange. Ideal for permanent mounting on lecterns, paging and dispatching stations, in language laboratories and other applications where a permanently mounted quality microphone is required. The gooseneck is of the new ultra-quiet type that reduces noise caused by adjusting the microphone.

List Price: \$115.00

SPECIFICATIONS

Frequency Response: 50 to 10,000 Hz.

Impedance and Output Level:
Low. —61.0 db (0 db = 1 milliwatt per 10 micro-

bars); .079 millivolts/microbar.

Cable: Non-detachable 5-foot, two-conductor shielded.

and Dynamic Lavalier Microphones

SHURE

Dynamic Lavalier Microphones

MODELS 570 • 570S

These professional lavalier microphones are designed for use in television and for lectures—feature special "shaped" response for superior lavalier performance and reduction of pickup of clothing and cable noise. Designed for inconspicuous use with "Flex-Grip" lavalier assembly. These microphones are the most versatile available because the "Flex-Grip" design holds the microphone firmly, yet permits easy and quick removal. The lavalier clip opens right or left or can be removed. The case is nonreflecting gray metal with a stainless steel grille.

Model 570: Without "On-Off" switch. **List Price: \$100.00**

Model 570S: With "On-Off" switch. **List Price: \$110.00**

SPECIFICATIONS

Frequency Response: 50 to 12,000 Hz.

bars); .085 millivolts/microbar.

Impedance and Output Level:

Cable:

Low -60.5 db (0 db = 1 milliwatt per 10 micro-

30-foot non-detachable, two-conductor shielded.



Model 570

Model 570S

MODEL 560

A dual impedance, dynamic microphone with a specially tailored response specifically designed for virtually every lavalier application. This is a good, general-purpose lavalier microphone at a very modest price. The compact and lightweight modern black satin all-metal case has a stainless steel grille. Impedance can be quickly changed from High to Low by simply moving pin jacks. The clip-grip lavalier assembly holds the microphone securely to the wearer. **List Price: \$45.00**

SPECIFICATIONS

Frequency Response: 40 to 10,000 Hz.

Low -55.5 db (0 db = 1 milliwatt per 10 micro-bars); .149 millivolt/microbar.

Impedance and Output Level: Dual.

High -56.5 db (0 db = 1 volt per microbar); 1.48 millivolts/microbar.

Cable:

18-foot, non-detachable, two-conductor shielded.



Model 560

Dynamic Gooseneck MODEL 561

A compact, high quality, tamper-proof dynamic microphone with an attached cable and standard 3/8 inch -27 thread for direct mounting on either a flexible gooseneck or a fixed pipe. The extremely rugged, dynamic cartridge is easily field replaced. This microphone features excellent voice response for language lab systems, paging applications, base-station communications and talk-back and cuing from professional control-room installations. Goose-neck must be ordered separately. **List Price: \$34.00**

SPECIFICATIONS

Frequency Response: 40 to 10,000 Hz.

bars); 1.31 millivolts/microbar.

Impedance and Output Level:

Cable:

Low -56.0 db (0 db = 1 milliwatt per 10 micro-

4-foot non-detachable, two-conductor shielded.



Model 561

Probe Dynamic MODEL 550S

A rugged, high quality omnidirectional dynamic microphone designed for use in top-quality sound reinforcement applications. It features smooth, wide-range response from 50-15,000 Hz. and is excellent for pickup of voice and music. Provides freedom from "pop" (explosive breath sounds). The performance and appearance characteristics make the "Probe-Dynamic" a wise choice for use in meeting rooms, auditoriums, for tape recording or wherever a quality omnidirectional microphone is required, and moderate cost is an important consideration. Includes swivel and "On-Off" switch. **List Price: \$72.00**

SPECIFICATIONS

Frequency Response: 50 to 15,000 Hz.

High -57.5 db (0 db = 1 volt per microbar); 1.32 millivolts/microbar.

Impedance and Output Level: Dual.

50-250 ohms -57.0 (0 db = 1 milliwatt per 10 microbars); .118 millivolts/microbar.

Cable:

15-foot; two-conductor shielded.



Model 550S

SHURE

Quality Dynamic Omnidirectional Microphones

MODELS 533SA • 533SB • 533SAV Spher-O-Dyne



An omnidirectional microphone of unusual quality for such a moderate cost. Built-in wind, breath, and pop filters make it ideal for close-to-the-mouth applications, minimizing annoying, explosive breath sounds. The Spher-O-Dynes feature excellent reproduction of voice and music, combined with a well-balanced "hand-ability" for virtually unlimited applications such as interview situations, singing groups, general-purpose public-address, tape recording, etc. Response is uniform from 40 to 11,000 Hz. There is a built-in "On-Off" Switch, as well as an adjustable swivel adapter for stand use.

Model 533SAV has a volume control on the microphone case that enables the user to change the loudness of the P.A. system at the microphone location. Ideal for applications where amplifier controls are inaccessible, or where the speaker or singer wants to control his own volume for dramatic effects.

Model 533SA Spher-O-Dyne: High impedance. **List Price: \$53.00**

Model 533SB Spher-O-Dyne: Low impedance. **List Price: \$53.00**

Model 533SAV Spher-O-Dyne: With adjustable volume control, high impedance. **List Price: \$60.00**

SPECIFICATIONS

Frequency Response: 40 to 11,000 Hz.

Impedance and Output Level:

Model 533SA and 533SAV: High Impedance
—55.0 db (0 db = 1 volt per microbar) 1.76 millivolts/microbar.

Model 533SB: Low Impedance —55.5 db (0 db =

1 milliwatt per 10 microbars) .149 millivolts/microbar.

Cable:

Model 533SA and 533SAV—15-foot one-conductor shielded.

Model 533SB—15-foot two-conductor shielded.

MODELS 51 • 51S Sonodyne



A favorite for schools and other public-address applications where ruggedness and high output are desirable features. Excellent for use with tape recorders requiring microphones with high output. Multi-impedance switch gives choice of Low, Medium, or High Impedance. Lifetime positive-lock swivel.

Model 51 Sonodyne: Without "On-Off" Switch. **List Price: \$52.00**

Model 51S Sonodyne: With "On-Off" Switch. **List Price: \$54.00**

SPECIFICATIONS

Frequency Response: 60 to 10,000 Hz.

Impedance and Output Level:

Low: 30-50 ohm impedance —51.0 db (0 db = 1 milliwatt per 10 microbars); .118 millivolts/microbar.

Medium: 150-250 ohms impedance —51.0 db (0 db

= 1 milliwatt per 10 microbars); .265 millivolts/microbar.

High: —48.5 db (0 db = 1 volt per microbar); 2.51 millivolts/microbar.

Cable:

15-foot, two-conductor shielded.

MODELS 540 • 540S Sonodyne II

A compact, versatile, modern omnidirectional microphone with a high output dynamic element, at a moderate cost. The "Sonodyne II" features wide-range response with adjustable frequency response which allows the user to tailor the microphone to the application.

Model 540 Sonodyne II: Without "On-Off" Switch. **List Price: \$50.00**

Model 540S Sonodyne II: With "On-Off" Switch. **List Price: \$52.00**

SPECIFICATIONS

Frequency Response: 50 to 13,000 Hz.

Impedance and Output Level: Dual.

50-250 ohm Impedance: —56.0 db (0 db = 1 milliwatt per 10 microbars); .149 millivolts/microbar.

High: —53.5 db (0 db = 1 volt per microbar); 2.13 millivolts/microbar.

Cable:

15-foot two-conductor shielded.

MODELS 575S • 575SB • 275S

Versadyne and Versaplex



A low-cost series of microphones featuring smart, modern, lightweight construction. Their smooth, wide-range response of 40 to 15,000 Hz. (Model 275S, 40 to 12,000 Hz.) is ideal for tape recording, general public address, as well as many other applications. Built-in filters reduce voice "pop." Slide-to-talk locking switch, and a lavalier cord and stand adapter are included.

Model 575S Versadyne Dynamic Microphone: High impedance. **List Price: \$25.00**

Model 575SB Versadyne Dynamic Microphone: Low impedance. **List Price: \$22.00**

Model 275S Versaplex Ceramic Microphone: High impedance. **List Price: \$16.00**

SPECIFICATIONS

Frequency Response: 575S and 575SB—40 to 15,000 Hz. 275S—40 to 12,000 Hz.

Impedance and Output Level:

Model 575S: High —56 db (0 db = 1 volt per microbar); 1.58 millivolts/microbar.

Model 575SB: Low —57.5 db (0 db = 1 milliwatt per 10 microbars); .171 millivolts/microbar.

Model 275S: High —59.5 db (0 db = 1 volt per microbar); 1.050 millivolts/microbar.

Cable:

Attached 7-foot, one-conductor shielded.

Studio Ribbon Microphones

SHURE

The characteristically wide-range response of the ribbon element has made it the most widely used type of microphone for broadcasting and professional recording. Shure engineers have designed remarkable ruggedness into Shure ribbon microphones, making them an excellent dependable choice for any indoor application where highest quality response is required. (Shure ribbon microphones actually have been used "to pound nails," and subjected to severe drop tests—without affecting the performance characteristics.)

Uni-Ron Unidirectional **MODEL 330**

Highly recommended for motion-picture studios, TV studios, radio stations, professional recording, and all other uses where quality requirements are of the highest. Model 330 has a true super cardioid, unidirectional pickup pattern which greatly reduces the pickup of random noise and solves feedback problems. The features that make the "330" so outstanding in performance, so dependable in operation, are the patented, world-famous "Uniphase" system; the true super cardioid pickup pattern; a ribbon transducer which provides extended smooth response of 30-15,000 Hz.; a multi-impedance switch; a lifetime swivel; and a vibration-isolation unit mounted in live rubber. **List Price: \$126.00**

SPECIFICATIONS

Frequency Response: 30 to 15,000 Hz.

Impedance and Output Level:

50 ohm Impedance: -60 db (0 db = 1 milliwatt

per 10 microbars); .049 millivolts/microbar.

150 ohm Impedance: -58.5 db (0 db = 1 milli-

watt per 10 microbars); .089 millivolts/microbar.

250 ohm Impedance: -58.5 db (0 db = 1 milli-

watt per 10 microbars); .117 millivolts/microbar.

Cable:

20-foot, two-conductor shielded broadcast type.



Model 330



Model 300

Studio Gradient **MODEL 300**

The Model 300 Studio Gradient is a bidirectional microphone which provides sound pickup at the front and rear of the microphone, but greatly reduces pickup at the sides. Can be placed at a much greater distance from the performer than is possible with omnidirectional microphones. Features are a readily accessible Voice-Music switch, a vibration-isolation unit mounted in live rubber, and a multi-impedance switch. The frequency response (production uniformity guaranteed to $\pm 2\frac{1}{2}$ db), is 40 to 15,000 Hz.

List Price: \$158.00

SPECIFICATIONS

Frequency Response: 40 to 15,000 Hz.

Impedance and Output Level:

30-50 ohms: -60.5 db (0 db = 1 milliwatt per

10 microbars); .043 millivolts/microbar.

150-250 ohms: -59 db (0 db = 1 milliwatt per

10 microbars); .105 millivolts/microbar.

High -57.5 db (0 db = 1 volt per microbar); 1.32 millivolts/microbar.

Cable:

20-foot, two-conductor shielded broadcast type.



Model 315

Gradient **MODELS 315 • 315S**

Features frequency response of 50 to 12,000 Hz., which reproduces voice and music in a clear, natural tonal quality in auditoriums, night clubs, schools and churches. Bidirectional "Figure 8" pickup pattern extends over a broad frequency range—permits the sound system to be operated at a level almost 6 db higher than is possible with nondirectional (omnidirectional) microphones. Greatly reduces reverberation and the pickup of random noises—filters out the "FFF"-type noises.

Model 315 Gradient: Without "On-Off" Switch. **List Price: \$94.00**

Model 315S Gradient: With "On-Off" Switch. **List Price: \$96.00**

SPECIFICATIONS

Frequency Response: 50 to 12,000 Hz.

Impedance and Output Level:

30-50 ohm Impedance: -62 db (0 db = 1 milli-

watt per 10 microbars); .035 millivolts/microbar.

150-250 ohm Impedance: -61 db (0 db = 1

milliwatt per 10 microbars); .089 millivolts/micro-

bar.

High -58.5 db (0 db = 1 volt per microbar); 1.15 millivolts/microbar.

Cable:

15-foot, two-conductor shielded broadcast type.

Unidirectional Ceramic Cardioid Microphones

Uniplex **MODELS 245 • 245S**

This budget-priced series of ceramic microphones incorporate the same "Uniphase" system found in higher priced Shure unidirectional microphones. Lightweight, rugged and versatile, they can be used as a hand-held or stand-mounted unit.

Model 245 Uniplex: Without "On-Off" Switch. **List Price: \$37.00**

Model 245S Uniplex: With "On-Off" Switch. **List Price: \$39.00**

SPECIFICATIONS

Frequency Response: 50 to 7,000 Hz.

Impedance and Output Level: High

-59 db (0 db = 1 volt per microbar); 1.100 milli-

volts/microbar.

Cable: 15-foot, single conductor shielded.



Model 245

SHURE

Low Cost General Purpose Microphones

The COMMANDO Series (Controlled Magnetic)

MODELS 415 • 420 • 425 • 430

The Commando Series represent a significant achievement in providing quality performance at nominal cost —incorporating Shure's rugged, patented Controlled Magnetic cartridge in a dramatic-looking, versatile series of microphones. Suitable for indoor or outdoor use, these microphones feature high output, smooth response, extreme ruggedness and ability to withstand severe moisture and temperature conditions. Model 415 is high impedance only. Other models are dual impedance, with high or low impedance selection by simple pin-jack changing method.

Model 415 Commando: High impedance only. **List Price: \$29.00**

Model 420 Commando: Designed for lavalier use. **List Price: \$32.00**

Model 425 Commando: Designed for gooseneck mounting. **List Price: \$32.00**

Model 430 Commando: For hand or stand use. Detachable cable. **List Price: \$40.00**

Frequency Response: 60 to 10,000 Hz.

Impedance and Output Level:

Model 415 is High Impedance. Models 420, 425, and 430 are dual.

High: —52 db (0 db = 1 volt per microbar); 2.510 millivolts/microbar.

Low: —52 db (0 db = 1 milliwatt per 10 micro-bars); .225 millivolts/microbar.

SPECIFICATIONS

Cable:

Model 415—7-foot nondetachable single-conductor shielded.

Model 420—20-foot nondetachable two-conductor shielded.

Model 425—7-foot nondetachable two-conductor shielded.

Model 430—15-foot two-conductor shielded.



Model 415

Model 425

Model 430

Model 420

MODELS 215 • 715 Starlite (Ceramic and Crystal)

The Starlite is an attractively designed economy microphone for voice reproduction. Can be held in the hand, or used on a desk with built-in stand. Semi-directional, high impedance. Case is impact-resistant polystyrene. **Model 215 Starlite. List Price: \$8.00—Model 715 Starlite. List Price: \$9.00**

SPECIFICATIONS

Frequency Response:

Model 215 Ceramic, 50 to 8,000 Hz.

Model 715 Crystal, 50 to 10,000 Hz.

Impedance and Output Level: High.

Model 215: —56.5 db (0 = 1 volt per microbar);

1.480 millivolts/microbar.

Model 715: —50 db (0 db = 1 volt per microbar);

3.150 millivolts/microbar.

Cable:

5-foot fabric covered single-conductor shielded.



Model 715

MODELS 777 • 777S Slim-X

This rugged omnidirectional microphone weighs only 6 ounces and features a "Metal Seal" crystal for long operating life under adverse conditions of heat and humidity. Ideal for use by lecturers, announcers, instructors. Model 777S has an "On-Off" switch. A lavalier cord and stand adapter is included with both models.

Model 777: Without "On-Off" Switch. **List Price: \$27.00**

Model 777S: With "On-Off" Switch. **List Price: \$29.00**

SPECIFICATIONS

Frequency Response: 60 to 10,000 Hz.

Impedance and Output Level:

High. —62 db (0 db = 1 volt per microbar); .790

millivolts/microbar.

Cable:

7-foot detachable single-conductor shielded.



Model 777

MODELS 510C • 510S • 710A • 710S

Hercules and Rex

Low in cost, these high impedance microphones are ideal for home recording, amateur radio, and budget public-address applications, and are designed for use in the hand as well as secure placement on desk or table. In addition, they include stand adapters having 5/8 inch —27 thread which fit the conventional floor or table stands. Models 510S and 710S feature an "On-Off" switch.

The "Hercules" Models 510C and 510S are rugged Controlled Magnetic types, while the "Rex" Models 710A and 710S have crystal elements. **List Prices: Model 510C \$18.00; Model 510S \$20.00; Model 710A \$13.00; Model 710S \$15.00**

SPECIFICATIONS

Frequency Response:

Models 510C and 510S—100 to 7,000 Hz.

Models 710A and 710S—60 to 9,000 Hz.

Impedance and Output Level: High.

Models 510C and 510S: —52.5 db (0 db = 1 volt

per microbar); 2.38 millivolts/microbar.

Models 710A and 710S: —50 db (0 db = 1 volt per microbar); 3.150 millivolts/microbar.

Cable:

7-foot single-conductor shielded.



Model 510C

Microphone Accessories

SHURE

MICROPHONE STANDS FOR EVERY APPLICATION

Model S33B Modern Desk Stand. Black finish. For use with Microphone Models 330, 415, 430, 533, 545, 546, 548, 556S, 566, 571, 576, 578, 579, 580, 585, and 588. **List Price: \$16.00**

Model S38B Round Stand. Black finish. For use with Models 245, 275, 415, 430, 515, 533, 545, 546, 548, 565, 566, 575, 579, 580, 585, 588, and the 777 series. **List Price: \$5.00**

Model S39A Vibration-Isolation Stand. For all applications where vibration is a problem. Fits all Shure microphones. **List Price: \$26.00**



QUICK DISCONNECT ISOLATION UNITS

Designed for use with microphones normally mounted on desk or floor stands but which are periodically removed from stand for hand-held or carry-around use. The molded rubber insert isolates the microphone from mechanical vibration.

Model A45. Designed for microphones incorporating an isolation assembly such as Models 330, 546, 556, and all others using an A25B Swivel Adapter. Satin Aluminum finish. **List Price: \$13.00**

Model A45B. Same as A45, but Black finish. **List Price: \$13.00**

Model A47. Designed for microphones with connectors such as Models 55S, 545S, 565S, etc., or nearly all microphones with a standard 5/8" -27 thread. **List Price: \$13.00**



MICROPHONE SWITCHES

Easily attached to any cable connector type microphone. On-Off press-to-talk switches.

Model A83B: Rotary type On-Off Switch. **List Price: \$12.00**

Model A84B: Momentary press-to-talk On-Off Switch. **List Price: \$12.00**



Model A83B

MICROPHONE WINDSCREEN MODEL A2WS

Designed to effectively minimize wind noise in outdoor locations and control explosive breath sounds in any location. For Models 544, 545, 545S, 545L, 546, 547, 576, and 578. **List Price: \$7.00**



CABLE TYPE TRANSFORMER MODEL A95A

A high quality transformer which makes it possible to connect a low impedance microphone to a high impedance amplifier input. Solves problem of excessive high frequency loss and objectionable hum when long lengths of cable are used.

Model A95A. Cannon XL-3-12 type input and Amphenol MCIM type output plugs installed. Mating connectors supplied. **List Price: \$19.00**

Model A95P. Cannon XL-3-12 type input with mating connector supplied. High impedance output terminates in permanently attached phone plug with locking ring. **List Price: \$21.00**



Model A95A

Model A95P

MICROPHONE REPLACEMENT CARTRIDGES

Model No.	Description	List Price
R15	Dynamic for Unidyne B Models 515SA, 515SB	\$18.00
R33	Dynamic for Spher-O-Dyne Models 533SA, 533SB, 533SAV	21.00
R45	Dynamic for Unidyne III Models 544, 545, 545S, 546, 547	39.00
R48	Dynamic for Unidyne IV Models 548, 548S, 549	42.00
R50	Dynamic for Models 540 (series III), 540S (series III), 560, 561, 575S, 575SB, 579SB	16.00
R55	Dynamic for Unidyne II Models 55S, 55SW	32.00
R58	Dynamic for Models 580SA, 580SB	24.00
R65	Dynamic for Unisphere I Models 565, 565S, 566	42.00
R85	Dynamic for Unisphere A Models 585SA, 585SB, 585SAV, 585SBV	26.00



Model R50

SWIVEL ADAPTERS

Model A25B. (Black) To be used with Models 415, 430, 515, 545, 548, 565, 580, 585, and 588 microphones — For use with standard desk or floor stand. **List Price: \$6.00**

Model A57S. Slip-in Swivel Adapter for Models 570, 576, 578 and 579. 3/4" diameter Dynamic Microphones — For use with standard desk or floor stand. **List Price: \$7.00**

Model A57R. Slip-in Swivel Adapter for Model 571. **List Price: \$7.00**



Model A25B

SHURE

Microphone Mixers

Standard • Professional • Reverberation

MODELS M68 • M68FC • M68P • M68RM



Model M68 Mixer

Shure Microphone Mixers are a practical, efficient and economical way of increasing the efficiency, usefulness and flexibility of public-address and paging systems, or tape recorders using more than one microphone or other sound source. (One prime example: extra microphones can be placed in the audience for question and answer sessions.) These new mixers are unique in that they satisfy the requirements of most sound system installations and serious tape recording enthusiasts, while being light enough to be portable, simple to operate and modest in cost. Each microphone (or other sound source) can be independently balanced for volume without affecting any of the other inputs. In addition to independent volume controls, a master volume control simultaneously controls the gain of all inputs. The M68 can therefore be used as a conveniently-at-hand sound system volume control in situations where the regular amplifier is located some distance away.

Model M68 Mixer. Input connections are MALE Cannon XL-3-14 type. (Uses XL-3-11C type Mate.) **List Price: \$131.00**

Model M68FC Mixer. Input connections are FEMALE Cannon XL-3-13 type. (Uses XL-3-12C type Mate.) **List Price: \$142.00**

Model M68-2 Mixer. Same as M68, but for 105-130 Volts AC, 50/60 Hz or 210-240 Volts AC, 50/60 Hz. 2 Conductor Cable. **List Price: \$134.00**

Model M68-2E Mixer. Same as M68-2 except for 210-240 Volts AC, 50/60 Hz only with 3 Conductor Cable. **List Price: \$134.00**

Model M68FC-2E Mixer. Same as M68FC, but for 210-240 Volts AC, 50/60 Hz. with 3 Conductor Cable. **List Price: \$144.00**

Model M68P Mixer. Input connections are phone plug (Hi-Impedance only). 105-130 Volts AC 50/60 Hz. **List Price: \$105.00**

Model M68P-2E. Same as M68P, but for 210-240 Volts AC, 50/60 Hz, with 3 Conductor Cable. **List Price: \$108.00**

REVERBERATION MIXERS

Model M68RM. 4-channel Reverberation Mixer. Female Cannon Type connectors. 105-130 Volts AC, 50/60 Hz. **List Price: \$180.00**

Model M68RM-2E. Same as M68RM but for 210-240 Volts AC, 50/60 Hz, 3 Conductor Cable. **List Price: \$185.00**

SPECIFICATIONS FOR ABOVE MIXERS

Type: Transistorized

Frequency Response: 30 to 20,000 Hz.

Power Consumption: 3 watts.

Microphone Inputs: Accept Dynamic or Ribbon microphones (not recommended for crystal or ceramic microphones), either high or low impedance (balanced or unbalanced) (Model M68P High Impedance only). Input impedance for each microphone is selected by a slide switch. You can use one type or model microphone, or mix several types and impedances.

Auxiliary Input: High level—accepts tape recorder, phonograph or tuner signal.

Controls: Four individual Microphone Volume Controls to raise or lower the level of sound from each microphone, or to cut microphones in and out at will. Auxiliary Input Volume Control controls sound level of tape recorder, phonograph, or tuner. Master Volume Control simultaneously adjusts the volume of all five inputs. Also, On-Off switch and Pilot Light.

Outputs: Two outputs: one provides high or low impedance output for connection to the microphone input of a sound system amplifier or tape recorder. Impedance is selected by switch. The other provides a high impedance, high level output designed primarily to feed a power amplifier or tape recorder requiring 0.5 to 2 volts.

Case Dimensions: 2 5/8" high, 11 3/4" wide, 5 1/4" deep. (M68RM 7 1/4" deep).

UL and CSA Approval. On models M68, M68FC, M68P, and M68RM only.

MODEL M67 Professional Microphone Mixer



A compact, lightweight and economical microphone mixer/remote amplifier specifically designed for professional recording and sound reinforcement studio and remote broadcasting. Provides four low-impedance balanced microphone inputs and one line input. The excellent performance and versatility of the M67 make it ideal for use as a complete, compact console for studio, remote, or original installation use—and as an "add-on" mixer for expanding existing facilities and providing additional microphone inputs with tape recorders and VTR's. Built-in tone oscillator provides calibration signal to balance signal levels.

The M67 features line and microphone level outputs; an illuminated VU meter calibrated for +4 and +10 dbm out; extremely low noise and RF susceptibility; wide, flat frequency response; two-level headphone monitor jack. AC or battery operation (see battery pack and other accessories on following page). Noiseless automatic switchover to battery if AC line fails.

Model M67. For 105-130 Volts AC, 50/60 Hz. **List Price: \$257.00**

Model M67-2E. For 210-240 Volts AC, 50/60 Hz with 3 Conductor Cable. **List Price: \$263.00**



M67 SPECIFICATIONS

Frequency Response: ± 2 db from 20 to 20,000 Hz.

Gain: 90 db; 150 ohm microphone into 600 ohm line.

Equivalent Input Noise: —125 dbv, 20 to 20,000 Hz;
—129 dbv, 300 to 20,000 Hz.

Hum and Noise: —125 dbv maximum Equivalent input hum and noise, 20 to 20,000 Hz, at 90 db gain; —129 dbv maximum noise 300-20,000 Hz, at 90 db gain.

Distortion: Under 1% from 20 to 20,000 Hz. at +10 dbm output, 0.5% typical.

Power Consumption: 3 watts.

Inputs: Four low-impedance microphones; one line, bridging or 600 ohms.

Outputs and Levels: 600 ohm line output, +18 dbm max; lo-impedance microphone output, —44 dbv max, Headphone output for 600-2000 ohm headphones.

Size and Weight: 2 5/8" x 11 3/8" x 7 1/2"; 4 lbs., 3 oz.

Operating Temperature: 0° to 135° F.

UL and CSA Approval: on Model M67 only.

Audio Control Center, Level Controller, Accessories

SHURE

MODEL M63 Audio Control Center



A new concept in economical, total control of audio response. Can be used to equalize sound systems, correct room acoustics, reduce feedback, provide special sound effects, reduce stage and stand noise—or for tape recording. Ideal as a low-cost audio controller when teamed-up with M68 series or M67 mixers... gives you more inputs, output modes, and response control than any other system on the market.

Efficient, continuously variable high-pass and low-pass 6 db-per-octave filters, plus separate bass and treble controls, can be combined for virtually

unlimited response characteristics as a result of "hinge" effect of bass and treble controls, and "slope" effect of high and low filters.

Ballistically correct VU meter for true VU readings. 5 outputs: high impedance high level, high impedance mic level, low impedance mic level, 600-ohm balanced line, headphone. 2 inputs, accept signals from microphone, mixer, tape recorder, or tuner. UL approved for use in Commercial applications. Only 11 3/8" x 6" x 2 1/2", 3 lbs. 2 oz. **Write for complete specifications. List Price: \$150.00**

MODEL M62 LEVEL-LOC Audio Level Controller



- PREVENTS "CLOSE-UP" BLASTING
- PREVENTS FADEOUT CAUSED BY "BOBBING & WEAVING" AMATEUR SPEAKERS
- PREVENTS "ROLLER-COASTER" SOUND LEVEL CAUSED BY DIFFERENT VOICES
- PREVENTS EAR-SPLITTING FEEDBACK BUILD-UP

With the Level-Loc Distance Selector Switch, you create a 6", 12", or 18" diameter "Sound Control Zone" in front of the microphone. Outside the Sound Control Zone, the microphone acts normally—but when a speaker gets within this zone, his voice level is evenly modulated so that close-up blasting and "roller-coaster" sound is eliminated. A separate "On-Off" switch enables you to bypass the Level-Loc when desirable.

The Level-Loc keeps electrical output from a microphone constant, even though the input signal varies considerably. It is a transistorized, variable-gain amplifier which cannot increase the strength of a signal, but when very large signals are applied, it can reduce this signal virtually instantly by as much as 100 times **without significant distortion!** Can be powered by self contained battery. M68 mixers, or auxiliary D.C. power supply. **List Price: \$95.00**

SPECIFICATIONS

Frequency Response: Flat 20 to 20,000 Hz. \pm 2 db.

Input Impedance: High—100 K ohms; Low—500 ohms.

Output Impedance: High—less than 500 ohms; Low—less than 10 ohms.

Compression Action: 40 db change in input level gives approximately 6 db change in output level.

Distortion: 3% maximum.

Size and Weight: 2 5/8" x 11 3/8" x 5 1/4"; 2 lbs., 2 oz.

Accessories for M68 Series, M67 Mixers, M63 Audio Master, M62 Level-Loc



AC68 Attache Carrying Case—Handsome slim-line vinyl leatherette attache case holds mixer, microphones, cables. 3 3/8" x 18 3/8" x 11 5/8". Fits M68 Series, M63 and M62. **List Price: \$39.00**

AC60 Carrying Case: For M63, M67, M62 or M68 Series. **List Price: \$39.00**

A68B Battery Power Supply—Eliminates need for 115 V., A.C. hookup. Supplied less U20 type (30 V., D.C.) battery. Use with M68 Series. **List Price: \$11.00**

A67B Battery Power Supply for M67 Mixer or M63 Audio Master. May be used as sole power source. On the M67 it may also be used as standby during AC operations providing noiseless switch-over in case of AC failure. **List Price: \$22.00**

A68C Output Cable Kit—enables you to connect any of the electronic products above to virtually any P.A. system or amplifier. Includes cables and adapters for Hubbel, Amphenol MC1 type and standard phone plug inputs. **List Price: \$26.00**

A68P Phono Preamp—Converts the Auxiliary input channel to a magnetic or ceramic phono-graph input. Built-in scratch filter has On-Off switch. Takes its power directly from the mixer. Use with M68 Series. May be used with the M67

by replacing the Phono Plug with a Male 3 pin Cannon Type Connector. **List Price: \$26.00**

A68S Stacking Kit—Enables you to conveniently interconnect and stack 2 Units—with 2 M68's you get 8 microphone inputs and 1 Auxiliary input. With 2 kits you can stack three Units—say 2 M68's and 1 M63. A single master volume control handles the entire matrix. Includes brackets, interconnecting cable. Fits M68 series, M67, M62, M63. **List Price: \$5.00**

A68SC Interconnecting Cable Only—Enables you to interconnect mixers as above, but without stacking brackets. Use with M68 Series, M63 and M67. **List Price: \$1.25**

A68L Locking Panel—Fastens over controls, locks in place with padlock (provided). Prevents tampering. Fits all products above. **List Price: \$9.00**

Mount It In A Standard Rack Panel.

A68R Rack Panel Kit—Standard 19" x 3 1/2" audio equipment rack panel for use with the M68. Gray Hammertone finish. Fits all products above. **List Price: \$13.00**



GOLD MICROPHONES

Feature Gold finish on metal cases and grille. Specifications are identical to standard models.

Model No.	Description	Specifications To Be Found On:	List Price	Model No.	Description	Specifications To Be Found On:	List Price
545S Gold	Unidyne III	Page 5	\$104.00	55SW Gold	Unidyne II	Page 6	\$ 99.00
545 Gold	Unidyne III	Page 5	99.00	565 Gold	Unisphere I	Page 7	110.00
545L Gold	Unidyne III	Page 5	84.00	585SA Gold	Unisphere A	Page 7	78.00
55S Gold	Unidyne II	Page 6	97.00	550S Gold	Probe	Page 9	82.00

MICROPHONES WITH ATTACHED PLUGS

Identical in specifications to standard models, but with the added feature of a special prewired plug end connector assembly which can be used as an MC1F, an MC1M, or a phone plug.

Model No.	Description	Specifications To Be Found On:	List Price	Model No.	Description	Specifications To Be Found On:	List Price
545SC	Unidyne III	Page 5	\$ 96.00	578C	Omnidyne	Page 8	\$ 89.00
545C	Unidyne III	Page 5	91.00	560C	Lavalier	Page 9	47.00
55SWC	Unidyne II	Page 6	91.00	550SC	Probe-Dynamic	Page 9	74.00
580SAC	Unidyne A	Page 6	64.00	540SC	Sonodyne II	Page 10	54.00
515SAC	Unidyne B	Page 6	44.00	51SC	Sonodyne	Page 10	56.00
565C	Unisphere I	Page 7	102.00	533SAC	Spher-O-Dyne	Page 10	55.00
565SC	Unisphere I	Page 7	107.00	533SAVC	Spher-O-Dyne	Page 10	62.00
585SAC	Unisphere A	Page 7	70.00	5755C	Versadyne	Page 10	27.00
585SAVC	Unisphere A	Page 7	78.00	2755C	Versaplex	Page 10	18.00
588SAC	Unisphere B	Page 7	62.00	2455C	Uniplex	Page 11	41.00

MATCHED PAIR MICROPHONES

For stereo recording, matched pair microphones are available at no additional cost. These microphones are identical to standard microphones except they are matched to a plus or minus 1 db in level and 1 1/2 db in frequency response.

Model No.	Description	Specifications To Be Found On:	List Price Per Pair	Model No.	Description	Specifications To Be Found On:	List Price Per Pair
548M	Unidyne IV	Page 5	\$210.00	580SBM	Unidyne A	Page 6	\$124.00
548SM	Unidyne IV	Page 5	220.00	566M	Unisphere I	Page 7	294.00
546M	Unidyne III	Page 5	284.00	565M	Unisphere I	Page 7	200.00
545SM	Unidyne III	Page 5	188.00	5655M	Unisphere I	Page 7	210.00
545SM Gold	Unidyne III	Page 5	208.00	585SAM	Unisphere A	Page 7	136.00
545M	Unidyne III	Page 5	178.00	576M	Omnidyne	Page 8	368.00
545M Gold	Unidyne III	Page 5	198.00	578M	Omnidyne	Page 8	174.00
544M	Unidyne III	Page 5	168.00	5785M	Omnidyne	Page 8	190.00
544M-G6	Unidyne III	Page 5	174.00	5505M	Probe-Dynamic	Page 9	144.00
544M-G12	Unidyne III	Page 5	176.00	5505M Gold	Probe-Dynamic	Page 9	164.00
544M-G18	Unidyne III	Page 5	178.00	330M	Uni-Ron	Page 11	252.00
555M	Unidyne II	Page 6	174.00	300M	Studio Gradient	Page 11	316.00
555WM	Unidyne II	Page 6	178.00	315M	Gradient	Page 11	188.00
5565M	Unidyne II	Page 6	284.00	3155M	Gradient	Page 11	192.00
580SA-MP	Unidyne A*	Page 6	124.00				

*With plugs attached to fit most tape recorders.

MICROPHONE CASES



These black plastic impact-proof microphone carrying cases are ideal for carrying the microphone, cable and accessories from place to place, conveniently and safely. The foam inserts hold the contents securely.

Model No.	Designed to Fit	List Price
AC54	Model 545, 548 Type Microphones	\$11.00
AC54S	Model 545S, 548S Type Microphones	11.00
AC55	Model 55S, 55SW Type Microphones	11.00
AC56	Model 565, 585, 533, 588 Type Microphones	11.00
AC56S	Model 565S Type Microphones	11.00
AC57	Model 576, 578 Type Microphones	11.00
AC58	Model 515, 580 Type Microphones	11.00

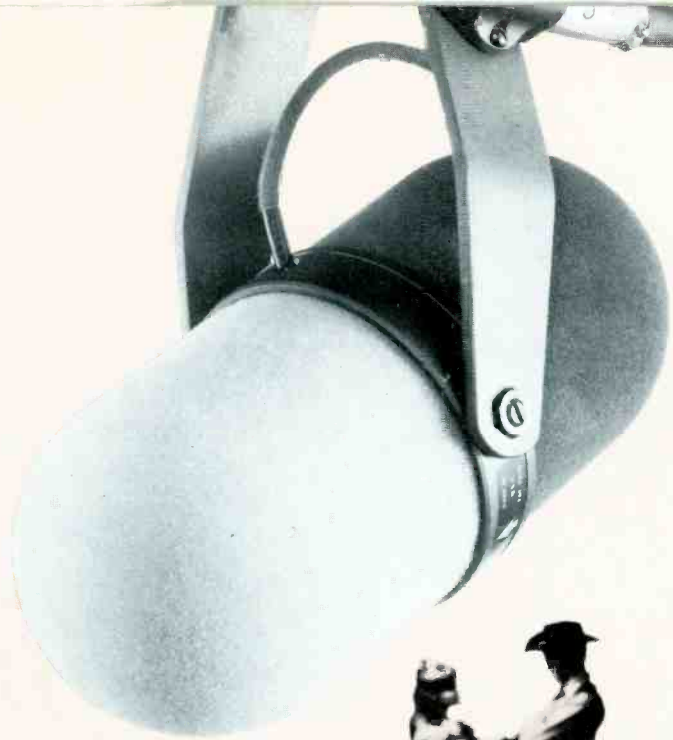
SHURE

PROFESSIONAL PRODUCTS

FOR

- BROADCASTING
- RECORDING
- MOTION PICTURES

MICROPHONES • CIRCUITRY • CARTRIDGES • TONE ARMS • MICROPHONE ACCESSORIES



SM5 UNIDIRECTIONAL DYNAMIC BOOM MICROPHONE

Specifically designed to minimize boom microphone problems in television and motion-picture sound stage and location recording. Smooth, natural response for dialogue, vocal music, and many scoring applications. Unusually effective cardioid pattern is uniform with frequency (even at the extreme low end) and completely symmetrical about the axis. This characteristic assures excellent rejection of unwanted sound (even air conditioner or traffic rumble), allows virtually no coloration of off-axis reflections or reverberation, and maintains presence over very wide working distance range. Highly effective integral windscreen completely surrounds the mechanical isolation elements for protection and maximum wind noise suppression. No transformers or inductors to pick up electrical noise or hum. Lightweight and perfectly balanced for fast pans and fishpole use. For 3/16" or smaller boom studs; 5/8"—27 stand thread adapter included.

May also be used to good advantage on optional desk stand (S33C) for outdoor sports and other problem applications.

SPECIFICATIONS

- FREQUENCY RESPONSE: 50-15,000 Hz
- POLAR PATTERN: Cardioid
- IMPEDANCE: Model SM5A - 50 ohms
Model SM5B - 150 ohms
- OUTPUT LEVEL: -57 db (0 db = 1 milliwatt with 10 microbars)
- CONNECTOR: Cannon XLR-3-42 receptacle on microphone
- DIMENSIONS AND WEIGHT: 9²⁹/₃₂" long x 5¹/₂" diam. x 5²³/₃₂" yoke (to center of microphone); 1 lb. 15 oz.



SM50 SELF-WINDSCREENED OMNIDIRECTIONAL DYNAMIC

Strikingly immune to windnoise and explosive breath sounds, making it an ideal "work horse" microphone for remote interviews, news, sports, and a variety of field and studio applications. *Five-element built-in windscreen unscrews from microphone as a self-contained unit for easy cleaning or replacement.* Response rolled off slightly at each end to reduce extreme low and high frequency noise and sibilance. Full-bodied, smooth, natural, and pleasing reproduction of speech and vocal music. Extremely rugged, yet surprisingly light. Compact and perfectly balanced for unusually comfortable handling. Shock-mounted cartridge. Supplied with slip-in stand adapter.

SPECIFICATIONS

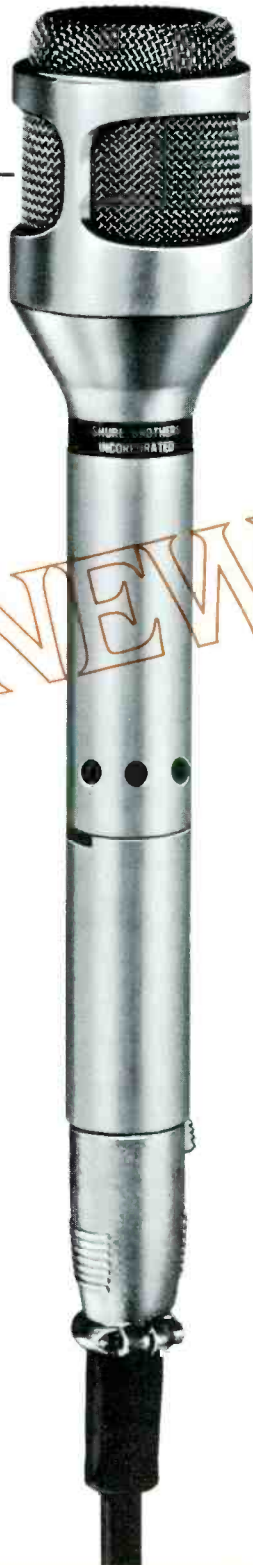
- FREQUENCY RESPONSE: 40-15,000 Hz
- POLAR PATTERN: Omnidirectional
- IMPEDANCE: DUAL: 30-50 ohms; 150-250 ohms
- OUTPUT LEVEL: -57 db (0 db = 1 milliwatt with 10 microbars)
- DIMENSIONS AND WEIGHT: 6⁹/₁₆" x 1¹/₂" diam. (max.); 8 oz.

See page 5 for important information on Connectors, Cables, Surface Finishes, and Stand Thread.

SHURE

SM53

UNIDIRECTIONAL
DYNAMIC
MICROPHONE



one or all of these provable advantages can make this your most effective and reliable microphone!

1. WIDER FRONT WORKING ANGLE

The SM53 allows *greater freedom of performer movement*—tonal quality is unaffected by movement throughout the broad effective pickup area. Eliminates "holes" and "hot spots" when using multiple microphones. (See other side for polar pattern.) These valuable attributes stem from a broad, true cardioid frontal pattern at all frequencies, in all planes—freeing the user from the restrictions of overly tight angular sensitivity.

2. MORE EFFECTIVE REJECTION OF UNWANTED SOUNDS

The SM53 prevents sound coloration due to off-axis reflections or reverberation—and, in addition, unwanted sounds (even air conditioner rumble) are effectively controlled. These properties are achieved through the polar pattern which is singularly uniform with frequency (even at the extreme low end) and is symmetrical about its axis.

3. MECHANICAL NOISE ISOLATION

Built-in effective shock mount significantly reduces the objectionable stand, cable, and handling noises associated with many unidirectional microphones. The SM53 can be used in many applications where conventional units have proved marginal or unusable.

4. EXTRAORDINARY RUGGEDNESS

You can even drop the SM53 directly on its nose without damaging the microphone element—and it will maintain its excellent performance characteristics.

5. SUPERIOR HUM REJECTION

Built-in hum-rejection system reduces magnetic hum susceptibility by as much as 20 db compared to other units! Makes it far more usable in distant pickup applications and in areas with extremely high magnetic fields.

6. LESS SUSCEPTIBILITY TO "POP"

Integral "pop" filter minimizes explosive breath noise without external screening. Works well where other microphones are marginal or unusable.

7. MINIMIZED PROXIMITY EFFECT

Uniform tonal quality is maintained (without objectionable low-end build-up) regardless of whether the microphone is worked close up or from a distance.

8. FIELD SERVICEABILITY

Element (cartridge), connector, front screen, roll-off switch can all be replaced in minutes.

see other side for more information, specifications

**UNIDIRECTIONAL
DYNAMIC
MICROPHONE****PROFESSIONAL UNIDIRECTIONAL DYNAMIC MICROPHONE
THE MOST VERSATILE MICROPHONE IN ITS CLASS**

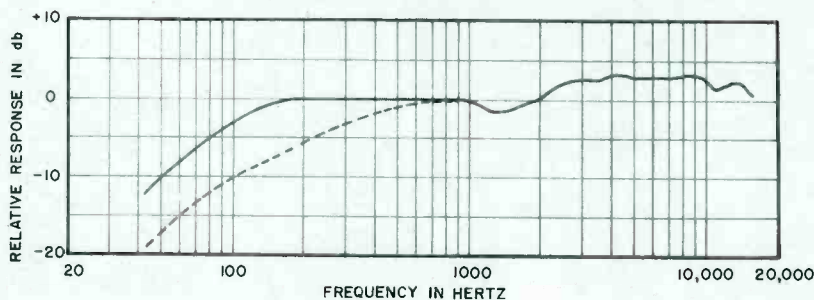
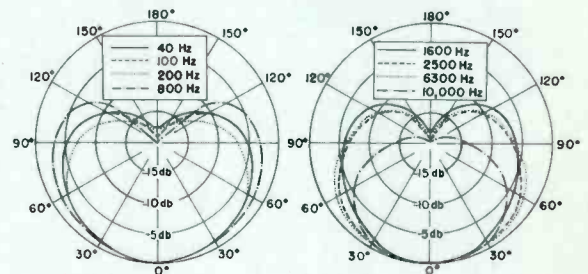
You'll find the Shure SM53 has far more uses, in far more situations—because it has been functionally engineered. It is the result of careful analysis of the varied applications a studio microphone must handle in today's across-the-board programming.

SMOOTH NATURAL RESPONSE

The frequency response of the SM53 is essentially flat across its broad frontal pickup area to the top end of the audible spectrum. Its response is natural, without strident peaks, without false coloration. (See charts below.)

SOME ADDITIONAL FEATURES

Changes in tonal quality due to accidental blockage of the rear entry ports are virtually eliminated because of the radial distribution of the acoustic entry. Built-in low end roll-off filter switch. Soft, neutral glare-free finish is ideally suited for on-camera use.

FREQUENCY RESPONSE CURVE**POLAR PATTERNS****SPECIFICATIONS**

Type: Dynamic

Frequency Response: 70 to 16,000 Hz. (See Response Curve above)

Polar Pattern: Cardioid (Unidirectional)

Response — Uniform with frequency, symmetrical about axis (See Polar Patterns above.)

Impedance: 150 ohms to permit proper match with any input from 50 through 250 ohms

Output Level: 1,000 Hz

Open Circuit Voltage: -81 db (Odb = 1 volt per microbar; .09 millivolt per microbar)

Power Level: -58.5 db (Odb = 1 milliwatt per 10 microbars)

E.I.A. Microphone Rating Gm (Sensitivity): -151 db

(E.I.A. Standard SE-105, August, 1949)

Hum Sensitivity: -144 dbm at 1 milligauss

Bass Roll Off Switch: Response selector switch

See Frequency Response Curve above for roll-off response (dotted line).

Cable: 20 foot (6.1 m.) two conductor shielded Broadcast type with Cannon XLR-3-11C connector attached on microphone end.

Connector: Cannon XLR-3-12 type in microphone

Swivel Adapter: Positive action swivel to fit 5/8" —27 stand threads

Case: Aluminum and stainless-steel mesh

Case Finish: Matte metallic

Net Weight: (less cable) 8 ounces (227 grams)

Shipping Weight: 2 pounds, 2 ounces (964 grams)

ARCHITECT'S SPECIFICATIONS

The microphone shall be a Shure Model SM53 or equivalent. It shall be a moving-coil microphone with a frequency range of 70 to 16,000 Hz. It shall have a cardioid directional characteristic, with cancellation at the sides being approximately 6 db, and the cancellation at the rear being 15 to 20 db. The microphone shall have an impedance of 150 ohms. The microphone output shall be -58.5 db where 0 db equals 1 milliwatt for 10 microbars of sound pressure.

The microphone rating Gm (sensitivity) at 1,000 Hz. shall be within ± 2 db of -151 db (E.I.A. Standard SE-105, August, 1949).

The microphone shall have a Response Selector switch to provide gradual low frequency roll-off.

The microphone shall be provided with a swivel adapter and a 20-foot, 2 conductor shielded cable having a Cannon XLR-3-11C connector attached. The microphone swivel adapter shall mount on a stand having 5/8" —27 thread.

The overall dimensions shall be 7.164" (182.0 mm) in length and 1.5" (38.1 mm) in diameter.

Shure Brothers, Inc./Professional Products
222 Hartrey Avenue, Evanston, Illinois 60204
Phone: 312 328-9000 • Cable: Shuremicro

PAT. PENDING



TRULY VERSATILE



FOR REMOTE NEWSCASTS

SPORTING EVENTS

"GLAMOUR" PRODUCTIONS

STUDIO COMMENTARY

SM60 OMNIDIRECTIONAL DYNAMIC

This unusually versatile microphone is a unique combination of beauty, strength, performance and economy. It has smooth, natural, wide-range response for both voice and music. The SM60 is equally at home in the studio or for remote pickups, and is in wide use in situations as diverse as outdoor sporting events and studio production numbers. Built-in breath and pop filter minimizes breath and wind noise. Lustrous, non-glare matte metallic finish and tailored-to-the-rand dimensions provide handsome on-camera appearance and superior handability. Specially reinforced machined-steel case front for exceptional ruggedness — can actually be dropped on its nose without damage to internal structure! Windscreen and front end quickly and easily removable for cleaning. Can be used on stand (stand adapter included) or instantly removed from stand for in-the-hand use.

SPECIFICATIONS

- FREQUENCY RESPONSE: 45-15,000 Hz
- POLAR PATTERN: Omnidirectional
- IMPEDANCE: 150 ohms (properly matches 50 to 250 ohm inputs)
- OUTPUT LEVEL: -59 db (0 db = 1 milliwatt with 10 microbars)
- DIMENSIONS AND WEIGHT: 6⁷/₃₂" x 1¹/₄" diam. (max.); 6 oz.



SM58 SELF-WINDSCREENED UNIDIRECTIONAL DYNAMIC

Ideal for remote news, sports, interviews, and vocal recording, or wherever the announcer or performer may need to work close to the microphone. Built-in spherical windscreen minimizes or eliminates explosive breath "pop." Wide response with slight presence rise for clean, bright, and natural sound. Unusually effective cardioid pickup pattern (uniform with frequency, symmetrical about axis) provides excellent control of unwanted sound. Minimizes "boominess" that is usually accentuated by close-up microphone use. Windscreen assembly readily removable in the field for cleaning or replacement. Cartridge suspended in rubber shock mount. Convenient size and weight for comfortable hand-held use. Slip-in stand adapter included.

SPECIFICATIONS

- FREQUENCY RESPONSE: 50-15,000 Hz
- POLAR PATTERN: Cardioid
- IMPEDANCE: DUAL: 50 and 150 ohms
- OUTPUT LEVEL: -56 db (0 db = 1 milliwatt with 10 microbars)
- DIMENSIONS AND WEIGHT: 6¹³/₃₂" x 2" diam. (max.); 15 oz.

U.S. Patents 3,132,713 and 3,240,883

See page 5 for important information on Connectors, Cables, Surface Finishes, and Stand Thread.

SM56-57 UNIDIRECTIONAL DYNAMICS

U.S. PATENT D-190,864

Models SM56 and SM57 feature unusually effective cardioid pickup patterns that are uniform at all frequencies and in all planes! The effects of studio acoustics and background noise are minimized and the bright, clean sound is ideal for announcing, dialogue and vocal music. Unusually effective for rhythm pickups because they do not overemphasize low frequencies — resulting in clean, beautifully defined sound from percussion instruments, piano and string basses. In addition, "boominess" associated with close-up pickup is well controlled.

The cartridges are shock-mounted for quiet operation.

SM56 — STAND MOUNTED MODEL

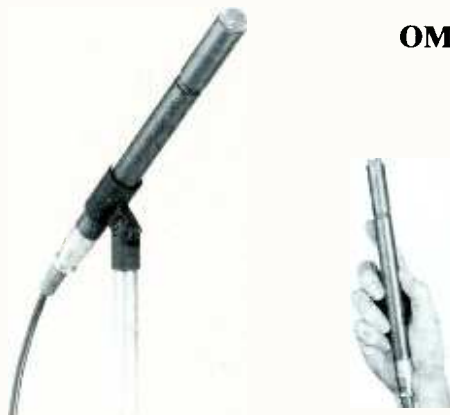
Permanently mounted on positive-action swivel-shock mount that permits tilting of head through 135°. Includes accessory switch adapter to serve in applications where on-off switch is necessary at the microphone.

SPECIFICATIONS

FREQUENCY RESPONSE: 50-15,000 Hz
 POLAR PATTERN: Cardioid
 IMPEDANCE: DUAL: selected by impedance switch:
 30-50 ohms "L," or 150-250 ohms "H"
 OUTPUT LEVEL: -56 db (0 db = 1 milliwatt
 with 10 microbars)
 DIMENSIONS AND WEIGHT: 4¾" x 1⅝" diam.;
 3¼" base height; 1 lb. 3 oz.

SM57 — HAND OR STAND MODEL

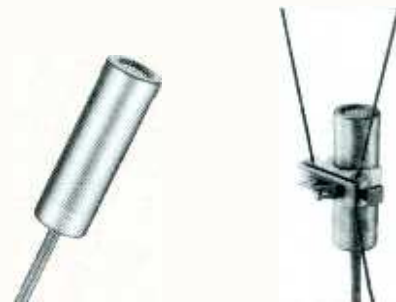
Hand-held variation of SM56 (above). Includes slip-in stand adapter for instant attachment to stand. Same specifications as SM56 except impedance changeable at pins in base of microphone: 6¼" long, 1¼" diam.; 10 oz.

OMNIDIRECTIONAL DYNAMICS**MODEL SM76 ¾" DIAMETER
OMNIDIRECTIONAL DYNAMIC**

Extremely wide, peak-free, and smooth response (45 - 20 kHz) together with slim styling makes this a microphone of unusual versatility. It is recommended for applications as divergent as symphonic and organ recording, studio or location interviews and newscasts, in-the-audience use . . . anywhere a fine, natural sounding omnidirectional is required. Slender steel case feels great in the hand. Can also be used on a stand, indoors or out (includes slip-in stand adapter). Dependable and extraordinarily rugged — will withstand severe use without deviation from original standards.

SPECIFICATIONS

FREQUENCY RESPONSE: 45-20,000 Hz
 POLAR PATTERN: Omnidirectional
 IMPEDANCE: DUAL: 50 and 150 ohms permits proper
 matching to any input from 30 to 250 ohms.
 OUTPUT LEVEL: -60 db (0 db = 1 milliwatt
 with 10 microbars)
 DIMENSIONS AND WEIGHT: 8¼" long x ¾" diam.; 7 oz.

**MODEL SM51 DYNAMIC LAVALIER
MICROPHONE**

Especially designed for radio, TV, motion-picture or applications calling for a small wearable microphone; frequency response optimized for lavalier use — will match well, in sound, with stand or desk mounted units. Smooth exterior and recessed grill minimize clothing noise. Versatile, "Positive-Lock" lavalier holder goes on in an instant; provides simple, noiseless adjustment of microphone position. Non-detachable 30-ft. two-conductor rubber cable is easily field replaceable without disturbing cartridge. Magnetic shielded steel case.

SPECIFICATIONS

FREQUENCY RESPONSE: 70-12,000 Hz with rising
 characteristic to 6,000 Hz
 IMPEDANCE: Matches any input from 50 to 250 ohms
 OUTPUT LEVEL: -60.5 (0 db = 1 milliwatt with 10 microbars)
 DIMENSIONS AND WEIGHT: 2½" long x ¾" diam.; 2 oz.

See Page 5 for important information on Connectors, Cables, Surface Finishes and Stand Thread.



**MODEL SM33 SUPER CARDIOID
RIBBON MICROPHONE**

U.S. PATENT D-178,018

The SM33's ribbon element imparts a pleasantly warm characteristic to the male speaking voice which especially recommends it for announcing and narration applications. The same warmth is also imparted to instrumental or vocal recordings. Because its polar pattern is somewhat more directional than a conventional cardioid, it provides superior separation in studio recording as well as control of unwanted surrounding noise. Smooth, wide range response. Unusually rugged. Two-position Response Selector Switch tailors bass frequencies to the recording situation. Self-adjusting lifetime swivel-shock mount permits tilting head 45° forward, 90° backward.

SPECIFICATIONS

FREQUENCY RESPONSE: 40-15,000 Hz
 POLAR PATTERN: Super-Cardioid
 IMPEDANCE: DUAL: 30-50 ohms; 150-250 ohms
 OUTPUT LEVEL: -58 db (0 db = 1 milliwatt with 10 microbars)
 DIMENSIONS AND WEIGHT: 5¹⁵/₁₆" long overall x 1¹/₄" wide x 1⁷/₈" deep. Head is 4¹/₁₆" long; 1 lb. 10 oz.



**MODEL 300 BIDIRECTIONAL
RIBBON MICROPHONE**

U.S. Patent D-171,055

Combines wide range response and a bidirectional (cosine) pickup pattern: symmetrical front and rear pickup with greatly reduced side pickup provides same control of overall surrounding noise as an equivalent cardioid microphone. Warm, smooth sound. Ideal for applications such as across-the-table interviews or dialogue, combined pickup of facing instrumental groups, and stages with overhead loudspeakers. Two-position, low frequency, Response Selector Switch. Self-adjusting lifetime swivel-shock mount.

SPECIFICATIONS

FREQUENCY RESPONSE: 40-15,000 Hz
 POLAR PATTERN: Cosine
 IMPEDANCE: MULTI-IMPEDANCE: Switch gives choice of "L" 30-50 ohms; "M" 150-250 ohms; or "H" high.
 OUTPUT LEVEL: -59 db (0 db = 1 milliwatt with 10 microbars)
 DIMENSIONS AND WEIGHT: 9¹/₄" long overall x 1¹/₂" wide x 1³/₈" deep. Head is 6" long; 1 lb.

IMPORTANT INFORMATION

CONNECTORS AND CABLES:

Unless otherwise specified, the microphones listed in this folder are equipped with a Cannon XL-3-12 type receptacle in the microphone. Supplied cables are 20-ft. lengths of two-conductor shielded, broadcast-type, synthetic rubber cable with Cannon XLR-3-11C Connectors. Cable not supplied with SM5A or B; miniature and lavalier microphones supplied without connector but with cable, as stated in the product descriptions.

SURFACE FINISHES:

All Shure Professional Microphones are specially finished in textured dark gray that eliminates glare or flashes on camera. Model SM60 finished in non-glare matte metallic.

STAND THREAD:

5/8"-27 stand thread on all microphones and stand adapters. Boom mounting on SM5A and B has pass hole for 5/16" stud.

UTILITY DYNAMIC MICROPHONES

A complete selection of general purpose microphones for mounting on goosenecks or other flexible or fixed mountings. Recommended for use in control rooms, cueing, talk-back, intercom, newsroom, and other applications where a hands-free, permanently, or semi-permanently located microphone is called for. Models 544 and 561 available as head alone, while Models 544-G6, 544-G12, 544-G18 and 572G are complete with gooseneck and mounting flange. (Goosenecks available with side cable opening on special request.)

UNIDIRECTIONAL — MODEL 544 SERIES

Cardioid pickup performance characteristics similar to Model SM57 (page 4). Well suited to on-the-air and production use; or wherever it's desirable to suppress background noise such as in news rooms, control rooms or other noisy locations. Dual impedance: 150 ohms, or high. With 7-foot, 2-conductor shielded cable. 544-G6 with 6" gooseneck; 544-G12 with 12" gooseneck; 544-G18 with 18" gooseneck. Model 544 is the head alone with $\frac{3}{8}$ "-27 thread to fit conventional goosenecks or other flexible or fixed mountings.

MINIATURE — MODEL 572G

Omnidirectional dynamic head with same performance characteristics as $\frac{3}{4}$ " diameter Model 571 miniature dynamic microphone (below). The head is about the same diameter as the gooseneck itself, creating a strikingly trim appearance. With special, slim and quiet flexible 12-inch gooseneck, and mounting flange. With non-detachable, 5-foot, 2-conductor shielded cable.

STANDARD — MODEL 561

Rugged, low-cost, omnidirectional dynamic gooseneck microphone at an unusually low cost. "Tamper-proof" head with set-screw provision for locking head to gooseneck or fitting. 40-10,000 Hz with rising response characteristic for crisp, intelligible speech. Low impedance (200 ohms) permits long cable lengths. -56 db output. $\frac{3}{8}$ "-27 thread connects to standard goosenecks or other flexible or fixed mountings. Head measures $2\frac{1}{16}$ " x $1\frac{1}{8}$ " diam. With 4-foot, 2-conductor shielded cable.



MODEL 571 MINIATURE DYNAMIC

A lavalier-size omnidirectional microphone with stand microphone response that is well suited to general use. Excellent voice characteristics—smooth and peak-free. For inconspicuous stand or hand-held use, concealment in a studio or shooting location, hanging over stage, documentaries, etc. Steel case for magnetic shielding. With non-detachable 30-foot, 2-conductor shielded broadcast type cable. Includes stand adapter.

SPECIFICATIONS

FREQUENCY RESPONSE: 50-10,000 Hz.
POLAR PATTERN: Omnidirectional
IMPEDANCE: Matches any input from 50 to 250 ohms.
OUTPUT LEVEL: -60.5 db
(0 db = 1 milliwatt with 10 microbars)
DIMENSIONS AND WEIGHT:
 $2\frac{3}{8}$ " x $\frac{3}{4}$ " diam.; 2 oz.

SHURE MICROPHONE ACCESSORIES



MODEL S39A VIBRATION ISOLATION STAND

Isolates microphone from even extreme mechanical vibration. For tables, desks, footlight areas, remotes (particularly sporting events), etc. Designed for use with any Shure microphone or swivel adapter assembly. Heavy duty "non-fatigue" foam rubber internal isolation element. Low-silhouette, black high-impact non-glare plastic housing.



MODEL S33 STAND

Low silhouette ideal for TV use. Heavy ($2\frac{1}{2}$ lbs.) for rock-steady support of any microphone having standard $\frac{3}{8}$ "-27 thread. Unique quick microphone removal provisions. Model S33B has black satin finish; Model S33P has textured charcoal finish to match all Shure "SM" series microphones; Model S33C has special mounting hardware for SM5 Boom microphones.



MODEL A95A LINE MATCHING TRANSFORMER

Matches 35-50 ohm and 150-250 ohm Dynamic, Ribbon or Magnetic microphones to high impedance inputs. Full magnetic shield case. Compact size for "in-line" use. Cannon XL-3-11 low impedance connection; Amphenol MC-1 high impedance connection. Supplied with mating connectors. Only $2\frac{1}{2}$ in. long, $\frac{3}{4}$ in. diam.



MODEL A2WS WINDSCREEN

A high performance, rugged windscreen with exclusive lock-on provision that prevents accidental removal or loss. Effectively controls wind noise and explosive breath sounds ("pop"). Neutral gray. Handsome, finished appearance. Fits Shure Nos. SM56, SM57, 544, SM76 and 571 professional microphones.



FRONT VIEW

M67 PROFESSIONAL MICROPHONE MIXER

A compact, lightweight and economical microphone mixer/remote amplifier specifically designed for studio and remote broadcasting, recording and sound reinforcement. Provides four low-impedance balanced microphone inputs and one line input. The excellent performance and versatility of the M67 makes it ideal for use as a complete, compact console for studio, remote, or original installation use—and as an "add-on" mixer for expanding existing facilities and providing additional microphone inputs with tape recorders and VTR's. Built-in tone oscillator provides calibration signal to balance signal levels.

The M67 features line and microphone level outputs; an illuminated VU meter calibrated for +4 and +10 dbm out; extremely low noise and RF susceptibility; wide, flat frequency response; two-level headphone monitor jack. AC or battery operation (see

accessory battery pack below). Noiseless automatic switchover to battery if AC line fails.

M67 SPECIFICATIONS

FREQUENCY RESPONSE: ± 2 db from 20 to 20,000 Hz.
 GAIN: 90 db; 150 ohm microphone into 600 ohm line.
 HUM AND NOISE: -125 dbv maximum equivalent input hum and noise, 20 to 20,000 Hz., at 90 db gain.
 DISTORTION: Under 1% from 20 to 20,000 Hz. at +10 dbm output, 0.5% typical.
 INPUTS: Four low-impedance microphone; one line, bridging or 600 ohms.
 OUTPUTS AND LEVELS: +18 dbm max., 600 ohm line; -44 dbv max., microphone.
 SIZE AND WEIGHT: $11\frac{3}{8}$ " x $7\frac{1}{2}$ " x $2\frac{1}{2}$ "; 4 lbs., 3 oz.
 OPERATING TEMPERATURE: 0° to 135° F.



REAR VIEW



MODEL A67B BATTERY POWER SUPPLY

The A67B Battery Power Supply is designed to power the Shure M67 Microphone Mixer to full rated output.

It may be used either as the sole power source or as a stand-by safety during AC operation, providing automatic noiseless switch-over in case of AC failure.



MODEL SE20 SOLID STATE STEREO TRANSCRIPTION PREAMPLIFIER

SPECIFICATIONS

FREQUENCY RESPONSE: ± 1 db from 30 to 15,000 Hz. (RIAA/NAB disc playback characteristic)
 GAIN: 53 db, adjustable.
 DISTORTION: Less than 0.5% THD at +20 dbm from 20 to 20,000 Hz.
 CHANNEL SEPARATION: Greater than 50 db.
 HUM AND NOISE: At least 60 db below +6 dbm output.
 INPUT IMPEDANCE: 47,000 ohms.
 OUTPUT IMPEDANCE: For 600 or 150 ohm balanced line. Approximately 80 ohms, actual.
 OPERATING TEMPERATURE: Within 0.5 db of all specifications at 20 to 135° F.
 MOUNTING SIZE: Panel Opening $3\frac{3}{8}$ " x 7". $9\frac{1}{8}$ " deep.
 OPERATING VOLTAGE: 120 volts $\pm 10\%$ at 50/60 Hz.
 220 volts $\pm 10\%$ at 50/60 Hz.

A self-contained, high level, equalized stereo preamplifier specifically designed for highest quality disc reproduction in broadcasting and recording studios. Precise RIAA/NAB equalization. Noise and RF susceptibility are extremely low. Full line output capability to +20 dbm. Under $\frac{1}{2}\%$ distortion at +20 dbm! Individual high and low frequency equalization trimmers on each channel. Individual channel level controls. Excellent channel separation permits use as two separate monaural channels.

SHURE DISC REPRODUCERS PHONO CARTRIDGES & TONE ARMS

THE NEW BROADCAST STANDARD

M44 Series Stereo Dynetic Phono Cartridges

More FM and AM radio stations have standardized on the Shure M44 series of cartridges than any other, because of their unique combination of ruggedness, performance, and versatility. They feature exceptionally good sound, unusual uniformity and stand up best under hard usage. Wide choice of models, including conical or elliptical styli; light or heavy tracking; special styli for mono LP and 78 RPM.

SPECIFICATIONS

FREQUENCY RESPONSE: From 20 to 20,000 Hz
 OUTPUT VOLTAGE: At 1,000 Hz at 5 CM/SEC,
 Model M44-7, 11 millivolts per channel.
 Model M44-5, 7 millivolts per channel.
 Model M44C, 9.3 millivolts per channel.
 Model M44E, 9.3 millivolts per channel.
 CHANNEL SEPARATION: More than 25 db at 1,000 Hz

M44 SERIES CARTRIDGES

Cartridge Number	Stylus Number *	Tracking Force	Type of Stylus	Stylus Size	Recommended Applications
M44-5	N44-5*	Light 3/4 - 1 1/2 gms.	Conical	.0005"	Stereo recordings only
M44-7	N44-7*	Medium 1 1/2-3 gms.	Conical	.0007"	All 33 1/3 & 45 RPM Records
M44C	N44C*	Heavy 3 - 5 gms.	Conical	.0007"	All 33 1/3 & 45 RPM Records
M44E	N44E*	Medium 1 1/4 - 4 gms.	Elliptical	.0004" x .0007"	All 33 1/3 & 45 RPM Records
—	N44-1*	Medium 1 1/2 - 3 gms.	Conical	.001"	For Mono LP only
—	N44-3*	Medium 1 1/2 - 3 gms.	Conical	.0025"	For 78 RPM only

* Note: All M44 series styli are interchangeable.

THE WORLD'S FINEST CARTRIDGE

V-15 Type II Super Trackability Cartridge

The most important advance in cartridges since the advent of stereo! Especially designed for high trackability... will track difficult passages cut at highest velocities, including harpsichords, orchestral bells, cymbals, glockenspiels, vocal "S" sounds, etc. at forces as low as 3/4 gram. Eliminates breakup and FM overmodulation due to tracking distortion. Smooth and clean. Extended high end... peaks well beyond 15 KC. Especially recommended for FM good music stations and recording studios.

SPECIFICATIONS

TRACKABILITY at 1 gram tracking force using a Shure/SME arm:
 22 CM/SEC at 400 Hz; 30 CM/SEC at 1,000 Hz
 30 CM/SEC at 5,000 Hz; 22 CM/SEC at 10,000 Hz
 FREQUENCY RESPONSE: 20 to 25,000 Hz
 OUTPUT VOLTAGE: 3.5 mv per channel at 1,000 Hz at 5 CM/SEC
 CHANNEL SEPARATION: Over 25 db at 1,000 Hz
 Over 17 db from 500 to 10,000 Hz
 CHANNEL BALANCE: Output from each channel within 2 db
 STYLUS: VN15E Bi-Radial Elliptical Stylus, Diamond Tip
 .0007 inch (17.8 microns) frontal radius
 .0002 inch (5 microns) side contact radii
 .0010 inch (25 microns) wide between record contact points
 TRACKING FORCE: 3/4 to 1 1/2 grams

MODERATE COST HIGH TRACKABILITY CARTRIDGES

Model M91E

Second only to the incomparable V-15 Type II in tracking ability and clean sound... and costs about 30% less. A definite hearable step in upgrading sound quality—particularly in FM operations. Elliptical stylus, 3/4 to 1 1/2 grams tracking.

SPECIFICATIONS

TRACKABILITY at 1 gram tracking force using a Shure/SME arm:
 20 CM/SEC at 400 Hz; 28 CM/SEC at 1,000 Hz
 25 CM/SEC at 5,000 Hz; 18 CM/SEC at 10,000 Hz
 FREQUENCY RESPONSE: From 20 to 20,000 Hz
 OUTPUT VOLTAGE: 5.0 mv per channel at 1,000 Hz at 5 CM/SEC
 CHANNEL SEPARATION: More than 25 db at 1,000 Hz
 STYLUS: N91E Elliptical with diamond tip .0007 in. x .0002 in.
 TRACKING FORCE: 3/4 to 1 1/2 grams.

MODEL M92G SPHERICAL STYLUS HIGH TRACKABILITY CARTRIDGE. With .0006 inch radius spherical diamond tip. Trackability: 18 CM/SEC at 400 Hz; 26 CM/SEC at 1,000 Hz; 25 CM/SEC at 5,000 Hz; 15 CM/SEC at 10,000 Hz.

MODEL M93E ELLIPTICAL STYLUS HIGH TRACKABILITY CARTRIDGE. For heavier tracking at 1 1/2 to 3 grams. .0007 in. x .0004 in. elliptical diamond stylus. Trackability at 2 grams tracking force: 18 CM/SEC at 400 Hz; 25 CM/SEC at 1,000 Hz; 24 CM/SEC at 5,000 Hz; 13 CM/SEC at 10,000 Hz.

MODEL N75-3 STYLUS FOR 78 RPM RECORDS. Fits any of above cartridges. .0025 in. stylus. 1 1/2-3 grams tracking.

PROFESSIONAL QUALITY TONE ARMS

SHURE/SME — "THE BEST PICKUP ARM IN THE WORLD"

Permits optimum use of top-quality, light tracking cartridges. Proven rugged in broadcast applications. Provides features and quality unattainable in ANY other tone arm. Made by British craftsmen to singularly close tolerances and standards. All adjustments lock... assuring perfect tracking. Wood-lined arm puts resonances outside recorded range. Effective "anti-skating" bias adjuster counterweight. Model 3009 for 12" recordings, Model 3012 for 16" recordings.

SHURE PROFESSIONAL TONE ARMS

High quality, rugged, simple arm for tracking at 1 1/2 grams or higher. Full range of adjustments for static and dynamic balance, cartridge overhang, arm height, etc. Direct reading tracking force scale. Twist-to-lock head accommodates any stereo or mono cartridge. A real "workhorse" that takes abuse. Simple mounting through a single hole from the top of the table; plug-in cable. Model M232 is for 12" recordings, Model M236 for 16" recordings.

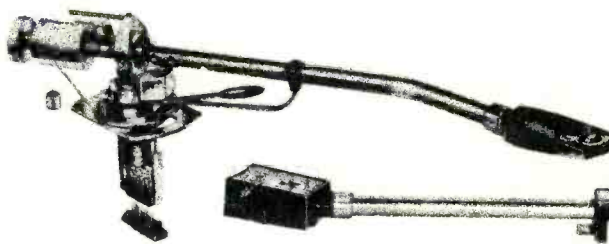
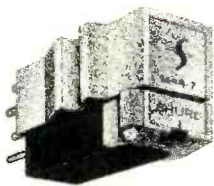
SHURE

SHURE BROTHERS, INC.
 PROFESSIONAL PRODUCTS DIVISION
 222 HARTREY AVE., EVANSTON, ILLINOIS 60204
 AREA CODE 312 328-9000 CABLE: SHUREMICRO

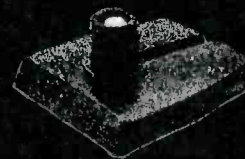
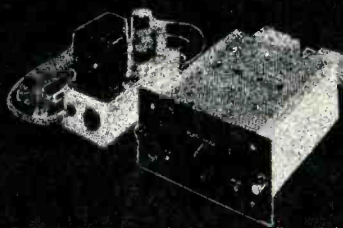
technical data for

SHURE

PROFESSIONAL PRODUCTS



DISC REPRODUCERS

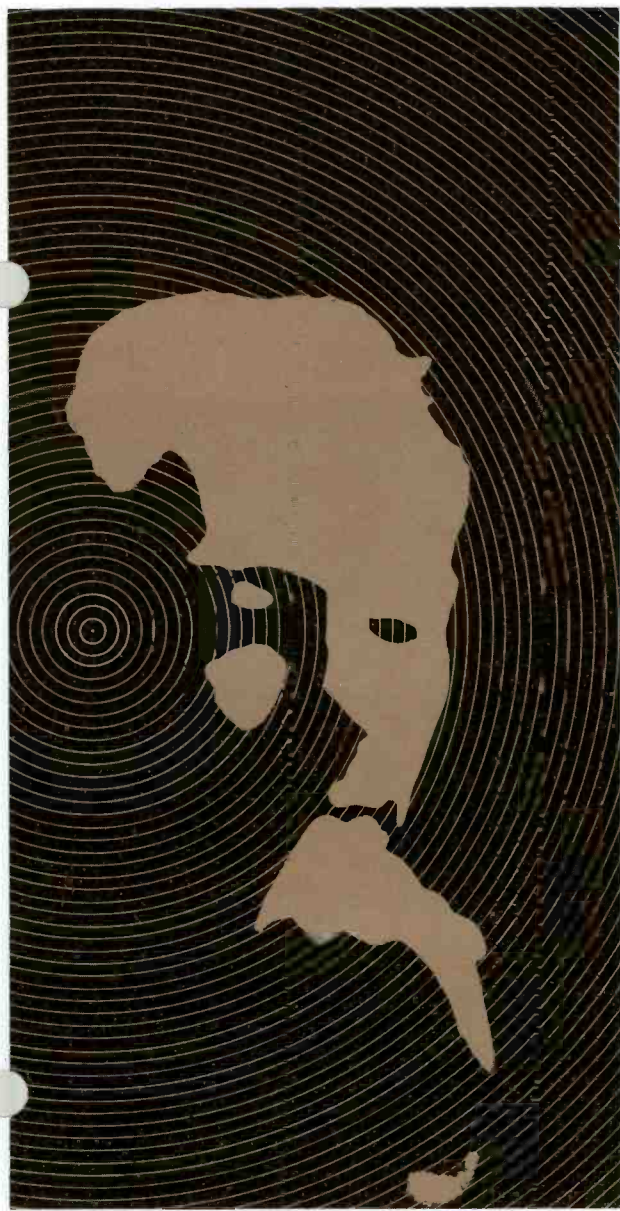


For Your Information on other Shure Products

For further information contact: R. W. Carr, Manager
Professional Products Division
Shure Brothers, Incorporated
222 Hartrey Avenue, Evanston, Illinois
Phone: DA 8-9000



THE PREMIER FAMILY OF STEREO SOUND REPRODUCERS



SHURE
STEREO DYNETIC®
HIGH FIDELITY PHONO CARTRIDGES
TONE ARMS
STYLI
PREAMPLIFIER
HEADPHONE AMPLIFIERS
STYLUS FORCE GAUGE

The all-important source of sound

True high fidelity sound re-creation begins at the *source of sound*. Just as a camera is no better than its lens, a phonograph system is no better than its cartridge. This breathtakingly precise miniaturized electric generator (that's really what it is) must carry the full burden of translating the miles-long stereo record groove into usable electrical impulses . . . and should do this without adding or subtracting from what is on the recording. Knowing this, Shure quality standards are rigidly maintained at the highest levels.

PATENT NOTICE ALL SHURE DYNATIC CARTRIDGES, STYLI AND PROFESSIONAL TONE ARMS ARE MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 2,983,516; 3,077,521; D183,366; D185,168; 3,055,988; D187,229; D187,230; D189,144; D193,006; D193,007; D193,854; D193,934. OTHER PATENTS PENDING.

OVERWHELMING
CHOICE
OF
CRITICS



AND INDEPENDENT HIGH FIDELITY AUTHORITIES . . .
THE WORLD'S STANDARD OF PERFECTION

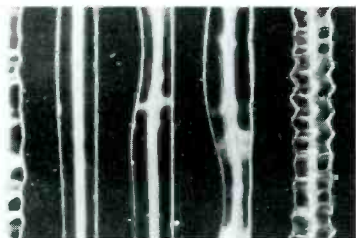
more about trackability



ANY GOOD CARTRIDGE
WILL TRACK THESE GROOVES

BUT ONLY
A HIGH
TRACKABILITY
CARTRIDGE
CAN COPE
WITH THIS GROOVE!

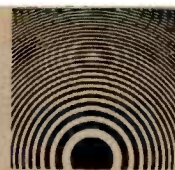
The photomicrograph above portrays an errant, hard-to-track castanet sound in an otherwise conservatively modulated recording. The somewhat more heavily modulated grooves shown below are an exhilarating combination of flutes and maracas with a low frequency rhythm complement from a recording cut at sufficiently high velocity to deliver precise and definitive intonation, full dynamic range, and optimum signal-to-noise ratio. Neither situation is a rarity, far from it. They are the very essence of today's highest fidelity recordings. But when played with an ordinary "good" quality cartridge, the stylus invariably loses contact with these demanding grooves—the castanets sound raspy, while the flute and maracas sound fuzzy, leaden, and "torn apart." Increasing tracking weight to force the stylus to stay in the groove will literally shave off the groove walls. Only High Trackability cartridges will consistently and effectively track all the grooves in today's recordings at light, record-saving pressures . . . even with cymbals, orchestral bells, and other difficult to track instruments. They will preserve the fidelity and reduce distortion from all your records, old and new.



**LOWEST COST
LIGHT TRACKING
HIGH TRACKABILITY
CARTRIDGE**

SHURE M75E
HI-TRACK ELLIPTICAL
¾ to 1½ grams tracking

\$39.95



**HIGH TRACK
AT MODERATE**

**EASY-MOUNT SERIES OF
HIGH TRACKABILITY
CARTRIDGES**



SHURE M91E
HI-TRACK ELLIPTICAL
¾ to 1½ grams tracking

\$49.95

Optimized design parameters for trackability second only to the incomparable V-15 Type II Improved.

SPECIFICATIONS FOR M91E

Trackability at 1 gram tracking force using a Shure/SME Arm:

- 20 CM/SEC at 400 Hz
- 28 CM/SEC at 1,000 Hz
- 25 CM/SEC at 5,000 Hz
- 18 CM/SEC at 10,000 Hz

Frequency Response: From 20 to 20,000 Hz

Output Voltage: 5.0 mv per channel at 1,000 Hz at 5 CM/SEC

Channel Separation: Over 25 db at 1,000 Hz

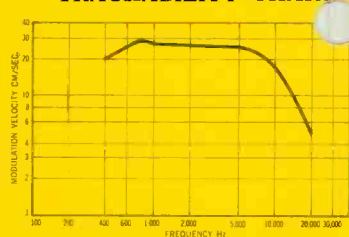
Channel Balance: Output from each channel within 2 db

Stylus: N91E Elliptical diamond tip
.0007 inch (17.8 microns) frontal radius
.0002 inch (5 microns) side contact radii
.0010 inch (25 microns) wide between record contact points

Tracking Force: ¾ to 1½ grams

Recommended Load Impedance: Nominally 47,000 ohms (per channel). Can be used up to 70,000 ohms with almost inaudible change in frequency response.

TRACKABILITY CHART*



Input Capacitance: 400-500 Pico-Farads per channel, including arm cable.

Inductance: 720 millihenries

D.C. Resistance: 630 ohms

Terminals: 4 terminals

Weight: 6 grams

Mounting: Snap-in type; standard ½" (12.7 mm) Mounting centers on retaining clip

MODEL M91E Hi-Track Cartridge \$49.95

MODEL N91E Elliptical Replacement Stylus \$24.50

**SPECIFICATIONS
FOR M75E**

¾ to 1½ grams tracking and Bi-Radial Elliptical Stylus. Trackability specifications that assure you this cartridge will track grooves cut to the theoretical limits of recording cutting velocity . . . throughout the audible spectrum.

Trackability at 1 gram tracking force using a Shure/SME Arm:

- 18 CM/SEC at 400 Hz
- 25 CM/SEC at 1,000 Hz
- 14 CM/SEC at 10,000 Hz

Frequency Response: From 20 to 20,000 Hz

Output Voltage: 6.2 mv per channel at 1,000 Hz at 5 CM/SEC

Channel Separation: More than 25 db at 1,000 Hz

Stylus: N75E Elliptical with diamond tip

.0007 inch (17.8 microns) frontal radius

.0002 inch (5 microns) side contact radii

.0010 inch (25 microns) wide between record contact points

Tracking Force: ¾ to 1½ grams
Recommended Load Impedance: 47,000 ohms (per channel)

Input Capacitance: 300-500 Pico-Farads per channel, including arm cable.

Inductance: 720 millihenries

D.C. Resistance: 630 ohms

Terminals: 4 terminals

Weight: 6 grams

Mounting: Standard ½" (12.7 mm) mounting centers

MODEL M75E Hi-Track Cartridge \$39.95

MODEL N75E Bi-Radial Elliptical Stylus \$20.00

ABILITY CARTRIDGES E PRICES

The trackability charts for each of these cartridges tell you that they are truly from the new generation of cartridges that deliver high trackability at light tracking forces—yet they are surprisingly modest in cost. Each also includes a retractile stylus to prevent record damage, and Bi-Radial Elliptical Stylus configuration. Manufactured and tested under Shure's critical quality control program.



SHURE M92E
HI-TRACK ELLIPTICAL
¾ to 1½ grams tracking
\$44.95

Designed for use in finest quality manual and automatic turntables.

SPECIFICATIONS FOR M92E

Trackability at 1 gram tracking force using a Shure/SME Arm:

- 18 CM/SEC at 400 Hz
- 26 CM/SEC at 1,000 Hz
- 25 CM/SEC at 5,000 Hz
- 15 CM/SEC at 10,000 Hz

Frequency Response: From 20 to 20,000 Hz

Output Voltage: 6.2 mv per channel at 1,000 Hz at 5 CM/SEC

Channel Separation: More than 25 db at 1,000 Hz

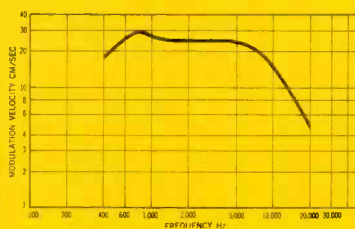
Channel Balance: Output from each channel within 2 db

Stylus: N92E Elliptical with diamond tip .0007 inch (17.8 microns) frontal radius
.0002 inch (5 microns) side contact radii
.0010 inch (25 microns) wide between record contact points

Tracking Force: ¾ to 1½ grams
Recommended Load Impedance: Nominally 47,000 ohms (per channel). Can be used up to 70,000 ohms with almost inaudible change in frequency response.

Input Capacitance: 400-500 Pico-Farads per channel, including arm cable.

TRACKABILITY CHART*



- Inductance: 720 millihenries
- D.C. Resistance: 630 ohms
- Terminals: 4 terminals
- Weight: 6 grams
- Mounting: Snap-in type; standard ½" (12.7 mm) Mounting centers on retaining clip
- MODEL M92E Hi-Track Cartridge \$44.95
- MODEL N92E Elliptical Replacement Stylus \$22.50

M75G HI-TRACK SPHERICAL STYLUS CARTRIDGE FOR ¾-1½ GRAMS TRACKING

Specifications same as M75E except that M75G has a spherical diamond stylus (.0006 inch Radius).

- MODEL M75G Hi-Track Cartridge \$34.95
- MODEL N75G Stylus \$17.50

M75-6 HI-TRACK SPHERICAL STYLUS CARTRIDGE FOR 1½ TO 3 GRAMS TRACKING

Ideal for use in upgrading systems with older turntables that track at heavier forces (1½ to 3 grams). Specifications same as M75E when

tracking at 2 grams (also see trackability chart right) except that M75-6 has a spherical diamond stylus (.0006 inch Radius).

- MODEL M75-6 Hi-Track Cartridge \$24.50
- MODEL N75-6 Stylus \$11.35

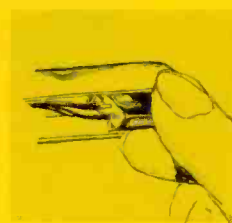
N75-3 STYLUS FOR 78 RPM RECORDINGS

Can be used in any V-15 Type II, M91, M92, M93, M75 series cartridges for playing 78 RPM Recordings. Radius: .0025 inch. 6.2 mv output. 1½ to 3 gram tracking. \$10.00

* NOTE: For an explanation of how to read the trackability charts, and what they mean, please refer to page 3 of this brochure.

NEW! EASY-MOUNT DESIGN

New clip-on easy-mount design cuts cartridge mounting time in half. First you mount the specially-designed retaining clip in the tone arm head—there's plenty of room for your fingers and screwdriver. Then you connect your leads and simply snap the cartridge into the retaining clip. Alignment is positive and precise. Stylus replacement is greatly simplified, too.



SHURE M93E
HI-TRACK ELLIPTICAL
1½ to 3 grams tracking
\$39.95

An outstanding performer in turntables that track in the 1½ to 3 gram range.

SPECIFICATIONS FOR M93E

Trackability at 2 grams tracking force using a Shure/SME Arm:

- 18 CM/SEC at 400 Hz
- 25 CM/SEC at 1,000 Hz
- 24 CM/SEC at 5,000 Hz
- 13 CM/SEC at 10,000 Hz

Frequency Response: From 20 to 20,000 Hz

Output Voltage: 6.2 mv per channel at 1,000 Hz at 5 CM/SEC

Channel Separation: More than 25 db at 1,000 Hz

Channel Balance: Output from both channels within 2 db

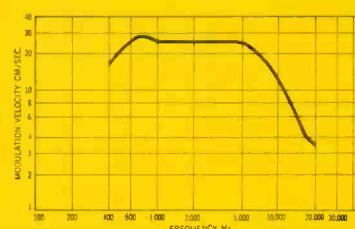
Stylus: N93E Elliptical with diamond tip

- .0007 inch (17.8 microns) frontal radius
- .0004 inch (10 microns) side contact radii
- .0010 inch (25 microns) wide between record contact points

Tracking Force: 1½ to 3 grams

Recommended Load Impedance: 47,000 to 70,000 ohms (per channel)

TRACKABILITY CHART*



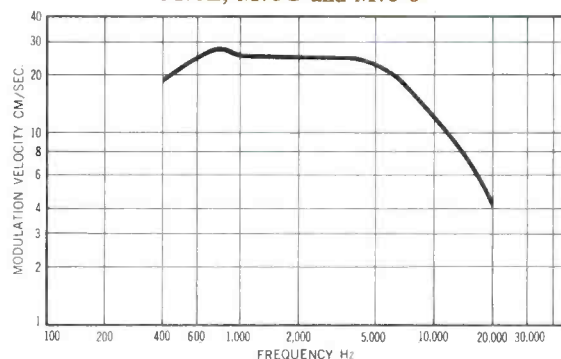
Input Capacitance: 400-500 Pico-Farads per channel, including arm cable

- Inductance: 720 millihenries
- D.C. Resistance: 630 ohms
- Terminals: 4 terminals
- Weight: 6 grams

Mounting: Snap-in type; standard ½" (12.7 mm) Mounting centers on retaining clip

- MODEL M93E Hi-Track Cartridge \$39.95
- MODEL N93E Elliptical Replacement Stylus \$19.50

Trackability Chart for M75E, M75G and M75-6*



BI-RADIAL ELLIPTICAL STYLUS CARTRIDGES



for 3/4 to 2 grams tracking

SHURE M55E

Stereo Dynamic

A popular cartridge that gives professional performance within a moderate budget. Incorporates Bi-Radial elliptical stylus. Note the wide variety of features and impressive specifications:

SPECIFICATIONS

Frequency Response: From 20 to 20,000 Hz	Stylus N55E: Elliptical shaped diamond tip
Output Voltage: 6.6 millivolts per channel at 1,000 Hz at 5 CM/SEC	.0007 inch (17.8 microns) frontal radius
Channel Separation: Nominally over 25 db at 1,000 Hz	.0002 inch (5 microns) side contact radii
Channel Balance: Output from each channel within 2 db	.0010 inch (25 microns) between points of contact with groove
Compliance:	Input Impedance: 47,000 ohms (per channel)
Horizontal } 15.0 x 10 ⁻⁶ CM/dyne	Inductance: 720 millihenries
Vertical } 15.0 x 10 ⁻⁶ CM/dyne	D.C. Resistance: 630 ohms
Effective Stylus Tip Mass: 1.2 milligrams	Terminals: 4 terminals
Tracking Force: 3/4 to 2 grams	Weight: 7 grams
	Mounting: Standard 1/2" (12.7 mm) mounting centers
	MODEL M55E Cartridge . . . \$29.95
	MODEL N55E Stylus \$14.95



for heavier tracking forces
1 3/4 to 4 grams

SHURE M44E

Stereo Dynamic

All the advantages of a Bi-Radial elliptical stylus for older turntables that track at heavier forces. Excellent trackability at a moderate cost.

SPECIFICATIONS

Frequency Response: From 20 to 20,000 Hz	Stylus N44E: Elliptical shaped diamond tip
Output Voltage: 9.3 millivolts per channel at 1,000 Hz at 5 CM/SEC	.0007 inch (17.8 microns) frontal radius
Channel Separation: More than 25 db at 1,000 Hz	.0004 inch (10 microns) side contact radii
Compliance:	.0010 inch (25 microns) wide between record contact points
Horizontal } 15.0 x 10 ⁻⁶ CM/dyne	Recommended Load Impedance: 47,000 ohms (per channel)
Vertical } 15.0 x 10 ⁻⁶ CM/dyne	Inductance: 720 millihenries
Effective Stylus Tip Mass: 1.4 milligrams	D.C. Resistance: 630 ohms
Tracking Force: 1 3/4 to 4 grams	Terminals: 4 terminals
	Weight: 7 grams
	Mounting: Standard 1/2" (12.7 mm) mounting centers
	MODEL M44E Cartridge . . . \$24.95
	MODEL N44E Stylus \$12.50



for 1 to 2 grams tracking

SHURE M31E

for 2 1/2 to 5 grams tracking

SHURE M32E

Stereo Dynamic

Now . . . the Bi-Radial elliptical stylus in a series of moderately priced cartridges. The M31E is designed especially for light tracking turntables, with .0002 x .0007 inch diamond stylus; output is 10.0 mv per channel at 1,000 Hz at 5 CM/SEC. Frequency response 20 to 18,500 Hz. The M32E is designed for

moderately priced changers with .0004 x .0007 inch stylus. Other specifications similar to Model M31E.

MODEL M31E Cartridge . . .	\$29.95
MODEL N31E Stylus	\$14.95
MODEL M32E Cartridge . . .	\$29.50
MODEL N32E Stylus	\$14.50



SPHERICAL STYLUS CARTRIDGES

combines quality and economy

SHURE M44 SERIES

Stereo Dynamic

Three cartridges in the \$18.00 to \$22.00 price range to fill the needs of the hi-fi hobbyist who wants the most for his money in this price range. All have received ample critical acclaim as the best in their price class. Note: All M44 series styli are interchangeable.

SPECIFICATIONS

Frequency Response: From 20 to 20,000 Hz	Terminals: 4 terminals
Output Voltage: At 1,000 Hz at 5 CM/SEC	Weight: 7 grams
Model M44-5, 7 millivolts per channel.	Mounting: Standard 1/2" (12.7 mm) mounting centers
Model M44-7, 11 millivolts per channel.	For Light Tracking 3/4 to 1 1/2 Grams
Model M44C, 9.3 millivolts per channel	MODEL M44-5 Cartridge.
Channel Separation: More than 25 db at 1,000 Hz	With .0005-inch radius spherical diamond stylus . . . \$21.95
Recommended Load Impedance: 47,000 ohms per channel	MODEL N44-5 Stylus .0005-inch radius spherical diamond \$11.00
Inductance: 720 millihenries	For Heavier Tracking 1 1/2 to 3 Grams
D.C. Resistance: 630 ohms	MODEL M44-7 Cartridge.
	With .0007-inch radius spherical diamond stylus . . . \$19.95
	MODEL N44-7 Stylus .0007-inch radius spherical diamond \$ 9.75
	For Heaviest Tracking 3 to 5 Grams
	MODEL M44C Cartridge.
	With .0007-inch radius spherical diamond stylus . . . \$17.95
	MODEL N44C Stylus .0007-inch radius spherical diamond stylus \$ 9.70



all-time best seller

SHURE M3D

Where cost is the dominant factor, the M3D provides extremely musical and transparent sound at a rock-bottom price. The original famous Shure Stereo Dynamic Cartridge . . . with almost universal application. Tracks at forces from 3 to 6 grams. For any changer.

MODEL M3D Cartridge	\$15.75
MODEL N3D Stylus	\$ 7.95



musical best buy

SHURE M7/N21D

Top-rated cartridge featuring the highly compliant N21D tubular stylus. Because of unusually clean mid-range (where most music really "happens" it is especially recommended if your present system sounds "muddy." For 2-gram optimum tracking (not to be used over 2 1/2 grams).

MODEL M7/N21D Cartridge	\$17.95
MODEL N21D Stylus	\$11.00

(Also, if you own an M3D or M7D, you can upgrade it for higher compliance, if tracking force does not exceed 2 1/2 grams, with the N21D stylus.)

ACCESSORIES AND STYLI

UNIVERSAL STEREO PREAMPLIFIER

SHURE M64



For Phonographs, Tape Decks, Microphones

- Converts phonos to accept magnetic cartridges
- Equalizes and amplifies tape decks
- Boosts microphone output
- Solves dealer demonstration room problems
- Ideal as a broadcast phono preamplifier

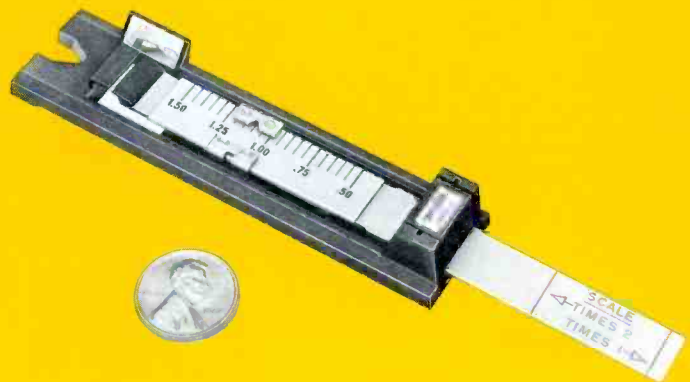
The Model M64 is a low-cost, versatile, compact, low noise and low distortion stereo preamplifier that provides gain, equalization, and choice of impedances and levels to solve an unusually broad variety of preamplification and equalization problems. Silicon transistor circuitry, easy permanent-mount installation.

SPECIFICATIONS

Frequency Response:	Flat — ± 2 db from 20 Hz to 20 KHz Phono — ± 2 db from 40 Hz to 15 KHz (Standard RIAA Curve) Tape — ± 2 db from 50 Hz to 15 KHz (7½ IPS NAB Curve)
Distortion:	Under 1% total harmonic distortion for an output of 2 volts at 1 KHz in phono, flat and tape positions
Channel Separation:	50 db or better at 1 KHz
Channel Balance:	Channels matched to within 2 db at 1 KHz
Dimensions:	5½" Wide x 2¾" High x 4½" Deep
Weight:	1¾ lbs.
MODEL M64 Preamplifier	..... \$34.00

STYLUS FORCE GAUGE

SHURE SFG-2



Low-cost, precision stylus force gauge is a must for the serious audiophile. Detects excessive or insufficient tracking force; allows precise resetting of stylus force to maintain optimum trackability and sharply reduce wear on records and stylus tip. Especially valuable when cartridges are switched. Accuracy to within 1/10th of a gram in ½ to 1½ gram primary operating range; extended range to 3 grams. The SFG-2 uses friction-free, stainless steel pivot points and easy-to-read reference bars in a permanently accurate "balance" system—no springs to weaken or wear out. Special tilted mirror reflects reference bar positions for effortless, accurate reading. Dynamic measurement is made with the tone arm in actual playing position.

MODEL SFG-2 Stylus Force Gauge \$4.95

GENUINE SHURE REPLACEMENT STYLI

CHECK YOUR SHURE STYLUS PERIODICALLY

True, it's unfortunate . . . and unfortunately, it's true; the diamond tip of ANY high fidelity stylus eventually wears out. Some sooner, some later. The new ultra-lightweight tracking force cartridges (¾ to 1½ grams) extend diamond tip life many times. But even they need periodic inspection. Depending upon the degree of wear, a worn stylus will (at the very least) appreciably accelerate record wear—or it can actually damage a record beyond redemption, in a single playing!

SHURE PERFORMANCE DEPENDS ON A GENUINE SHURE STYLUS

The superior performance of all Shure cartridges depends upon the Shure Stereo Dynetic Stylus Assembly. An inferior stylus replacement will audibly detract from and significantly reduce the cartridge's performance and increase record wear. Obviously, if an imitation Shure Stereo Dynetic Stylus is used, we cannot guarantee that the cartridge will perform to published specifications. Accept no substitute. Look for this wording:

"This Stereo Dynetic Stylus is precision manufactured by Shure Brothers Inc."

HOW TO UPGRADE OLDER SHURE CARTRIDGES WITH A NEW STYLUS

It is possible to actually upgrade your cartridge by using a higher compliance stylus assembly which tracks at lighter force, or by using an elliptical stylus in place of a conical stylus for reduction of IM, harmonic and tracing distortion. Here are some examples of improvements: M3D or M7D . . . Substitute N21D stylus for greater compliance, lighter tracking (2½ grams maximum).

Any M44 Cartridge . . . Substitute N55E stylus for greater compliance and lighter tracking (at ¾ to 2 grams). For tracking at 1¾ to 4 grams use the N44E stylus.

REPLACEMENT DIAMOND STYLI FOR OTHER SHURE CARTRIDGES

MODEL N1 Stylus. .0007" spherical tip radius. Fits M1 cartridge	..... \$23.00
MODEL N22D Stylus. .0005" spherical tip radius. Fits M22, M7/N21D, M3D/N21D, M3D and M7D cartridges	..... \$24.75
MODEL N44-1 Stylus. .001" spherical tip radius. For mono L.P.'s. Fits M44 Series, M55E and V-15 Type I cartridges	..... \$10.00
MODEL N75C. .0006" spherical tip. For 3 to 5 grams tracking. Fits M71 and M75 series	..... \$10.00
MODEL N75EJ. .0007" x .0004" elliptical tip radius. For 1½ to 3 grams tracking. Fits M71 and M75 series	..... \$19.50
MODEL N77 Stylus. .0007" spherical tip radius. Fits M77 cartridge	..... \$11.50
MODEL N92G Stylus. .0006" spherical tip radius. Fits M91, M92, M93 series	..... \$19.00
MODEL VN2E Stylus. Bi-radial elliptical tip. Fits V-15 Type I	..... \$25.00

STYLI FOR 78 RPM CARTRIDGES

If you have a large collection of 78 RPM records, you can equip the M31E, M32E, any M44 series cartridge, M55E, M75 series, M91, M92, M93 series, or V-15 Type II cartridges with a special stylus for 78 RPM records.	
MODEL N32-3 Stylus. .0025" spherical tip radius. Fits the M31E and the M32E cartridges	..... \$10.00
MODEL N44-3 Stylus. .0025" spherical tip radius. Fits any M44 series, and the M55E cartridge	..... \$10.00
MODEL N75-3 Stylus. .0025" spherical tip radius. Fits the M75, M91, M92, M93 series and V-15 Type II cartridges	..... \$10.00

Shure Tone Arms

SHURE SME SERIES II

"the best pickup arm in the world"

The Shure-SME, Series II, the ultimate in independent tone arms, provides features and quality unattainable in any other tone arm. Manufactured to singularly close tolerances and standards by skilled British craftsmen. Utterly accurate adjustments are provided for every critical factor relating to perfect tracking, such as height, overhang, length, tracking force and bias (anti-skating). These arms accept cartridges weighing 3 to 17 grams and allow tracking forces from 1/4 of a gram to 5 grams to be used. Because the Shure-SME tone arms realize the full potential of the cartridge and the record, they are especially suited for use in combination with any Shure cartridge. Highly recommended for use in the very finest component high fidelity systems.



Some of its many features include:

- Virtually frictionless knife-edge bearings
- Wood-lined arm puts resonances outside recorded range
- Effective "anti-skating" bias adjuster counterweight
- Hydraulic cueing device

MODEL 3009 for 12" recordings	..... \$117.50
MODEL 3009HE (horizontal cable entry)	..... \$123.75
MODEL 3012 for 16" recordings	..... \$128.00
MODEL S2 SME lightweight shell	..... \$ 7.50
Mounting boards for installing Shure-SME arms on Thorens TD-124 turntables.	
MODEL A39M for mounting Models 3009 and 3009HE	..... \$15.00
MODEL A30M for mounting Model 3012	..... \$15.00

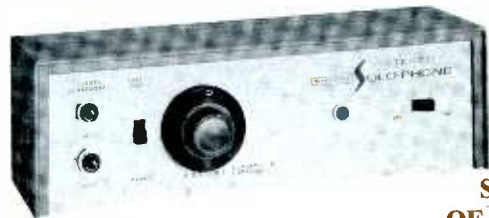
SHURE PROFESSIONAL TONE ARM

A quality arm at an unexpectedly low price. Full range of adjustments for static and dynamic balance, cartridge overhang, arm height, etc. Exceptionally easy to install from the top of the motorboard.



MODEL M232 for 12" recordings	..... \$32.75
MODEL M236 for 16" recordings	..... \$35.00
MODEL A23H extra plug in head	..... \$ 3.00

Shure Solo-Phone® Headphone Amplifiers



**MODEL SA-1
FOR USE
WITH THE
SOUND SOURCE
OF YOUR CHOICE**

The SA-1 was specifically designed for private headphone listening. The Solo-Phone is a small, all-transistor pre-amplifier/amplifier, that will deliver the depth and "presence" of high fidelity stereo—in private—from whichever sound source you choose to connect to it: record player, tape recorder or AM/FM tuner. True-to-performance sound is assured by its broad frequency response and exceptionally low distortion, including the difficult low frequencies. Handsome walnut finish with beige face plate.

VERSATILE . . .

Tape, record changer or tuner . . . you can easily vary the sound source. You also can use the Solo-Phone amplifier with one or two sets of headphones, or even with high efficiency speakers, for low-volume background music. Each stereo channel can be adjusted separately to achieve proper balance. U.L. listed for commercial applications. Weighs just 2 lbs.

MODEL SA-1 SOLO-PHONE AMPLIFIER:	
105-125 V., AC., 10 1/4" x 3 1/2" x 3". Less Headphones	..... Only \$48.00
MODEL SA-1F SOLO-PHONE FOR PANEL MOUNTING.	
Less Headphones	..... \$57.00



**MODEL SA-10
COMPLETE
SELF-CONTAINED
SOLO-PHONE SYSTEM**

An exciting new concept in superior quality, private high fidelity listening. It is a completely self-contained record playing system that combines a Garrard 4-speed automatic turntable with a Shure all-transistor Solo-Phone amplifier and the Shure M44C Stereo Dynetic Cartridge.

Plug in one or two sets of headphones and you can listen to your favorite recordings or language lessons . . . without disturbing others.

Easy to set up and to use. Simply plug it into a wall outlet, plug in your headphones and you're ready to enjoy! It will play 16, 33 1/3, 45 and 78 r.p.m.; 7", 10" or 12" records; stereophonically or monophonically. Only three controls: "on-off," volume and turntable speed selector. And you can adjust each stereo channel separately to achieve proper balance.

MODEL SA-10 SOLO-PHONE SYSTEM: 105-125 V., AC.,	
50-60 cyc. 8" x 17 1/2" x 13 3/4". Less Headphones	.. Only \$120.00
MODEL SA-10M SOLO-PHONE SYSTEM WITH 4-	
SPEED MANUAL TURNTABLE Less Headphones	.. \$120.00

FOR ADDITIONAL INFORMATION ON SHURE SOLO-PHONES, write for complete catalog No. AL291B.

SHURE BROTHERS INC.
222 Hartweg Ave., Evanston, Illinois 60204

AUTOMATIC AND MANUAL TURNTABLES		SHURE HIGH FIDELITY PHONOGRAPH CARTRIDGES			
MANUFACTURER	MODEL NUMBER	SUPER AND HIGH TRACKABILITY ELLIPTICAL STYLI	SUPER AND HIGH TRACKABILITY SPHERICAL STYLI	STANDARD ELLIPTICAL STYLI	STANDARD SPHERICAL STYLI
ACOUSTIC RESEARCH	XA, TA	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7
BSR	600	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7
	500A 400	M93E —	M75-6	M55E, M44E	M44-7
DUAL	1219, 1209 1212, 1019 1009F, 1009 1009SK, 1015 1015F	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7
	1010S, 1010 1010A	—	M75-6	M55E, M44E	M44-7
GARRARD	SL95, SL95B SL75, SL75B SL72B, LAB 80 LAB 80 MK II A70, 70 MK II	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7
	SL65, SL65B SL55, SL55B AT60, AT6 60 MK II	M93E	M75-6	M55E, M44E	M44-7
	A, A MK II, 40B RC-80, 40 MK II SP20, 50 50 MK II AUTO-SLIM	—	M75-6	M55E, M44E	M44-7
PERPETUUM-EBNER	PE2020 PE2018	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7
MIRACORD	770H, 750, 50H 40H, 630, 620 40, 18H, M10 M10F, M10H	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7
SONY	PS 1800	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7
THORENS	TD 150AB	V-15 Type II, M91E	V-15 II-7, M75-6	M55E, M44E	M44-7

RECOMMENDED TRACKING FORCES FOR CARTRIDGES LISTED ABOVE

SUPER AND HIGH TRACKABILITY ELLIPTICAL

V-15 Type II ¾-1½ grams
M91E ¾-1½ grams
M93E 1½-3 grams

STANDARD ELLIPTICAL

M55E ¾-2 grams
M44E 1¾-4 grams

SUPER AND HIGH TRACKABILITY SPHERICAL

V-15 II-7 ¾-1½ grams
M75-6 1½-3 grams

STANDARD SPHERICAL

M44-7 1½-3 grams

NOTE: For good performance and maximum economy, the Shure Model M3D Cartridge may be used with any of the units shown on the above chart.

SHURE REPLACEMENT STYLUS CHART

(All styli are diamond unless noted otherwise)

CARTRIDGE MODEL	STYLUS MODEL	Stylus Group	STYLUS RADIUS	STYLUS COLOR CODE	STYLUS FUNCTION	TRACKING FORCE
M1	N1	C	.0007"	Orange Dot	For Mono LP	1 -2
M2	N2		.0027"	White Dot	For 78 RPM	2 -3
M3D	N3D	B	.0007"	Gold Spade—Large Silver Shank	Stereo—Mono LP	3 -6
M3/N21D	N21D		.0007"	Gold Spade—Small Silver Shank	Stereo—Mono LP	1½-2½
M5D	N5D	C	.001"	Black Dot	For Mono LP	3 -6
M6S	N6S		.0027" Sapphire	Yellow Dot	For 78 RPM	3 -6
M7D	N3D	B	.0007"	Gold Spade—Large Silver Shank	Stereo—Mono LP	3 -6
M7/N21D	N21D		.0007"	Gold Spade—Small Silver Shank	Stereo—Mono LP	1½-2½
M8D	N3D	B	.0007"	Gold Spade—Large Silver Shank	Stereo—Mono LP	3 -6
M21	N21D		.0007"	Gold Spade—Small Silver Shank	Stereo—Mono LP	1½-2½
M22	N22D		.0005"	Silver Spade—Silver Shank	Stereo	¾-1½
M31E	N31E	G	*.0002" x .0007"	Yellow	Stereo—Mono LP	1 -2
M32E	N32E		*.0004" x .0007"	Brown	Stereo—Mono LP	2½-5
M44-5	N44-5	A	.0005"	Red	Stereo	¾-1½
M44-7	N44-7		.0007"	White	Stereo—Mono LP	1½-3
M44C	N44C		.0007"	Light Blue	Stereo—Mono LP	3 -5
M44E	N44E		*.0004" x .0007"	Brown	Stereo—Mono LP	1½-4
M55E	N55E		*.0002" x .0007"	Yellow	Stereo—Mono LP	¾-2
M71MB	N75-6	E	.0006"	Beige	Stereo—Mono LP	1½-3
M71MC	N75C		.0006"	Blue	Stereo—Mono LP	3 -5
M71EMB	N75EJ		*.0004" x .0007"	Light Green	Stereo—Mono LP	1½-3
M75-6	N75-6		.0006"	Beige	Stereo—Mono LP	1½-3
M75E	N75E		*.0002" x .0007"	Yellow	Stereo—Mono LP	¾-1½
M75G	N75G		.0006"	Gray	Stereo—Mono LP	¾-1½
M77	N77	D	.0007"	Black	Stereo—Mono LP	3 -6
M80E, -D, -D19	N55E	A	*.0002" x .0007"	Yellow	Stereo—Mono LP	¾-1½
M91E	N91E	H	*.0002" x .0007"	Black	Stereo—Mono LP	¾-1½
M92E	N92E		*.0002" x .0007"	Yellow	Stereo—Mono LP	¾-1½
M92G	N92G		.0006"	Gray	Stereo—Mono LP	¾-1½
M93E	N93E		*.0004" x .0007"	Light Green	Stereo—Mono LP	1½-3
M98/A	N44-7	A	.0007"	White	Stereo—Mono LP	1½-3
M99/A, AT6, M10	N99	D	.0007"	Gray	Stereo—Mono LP	1½-3
V-15	VN2E	A	*.0002" x .0007"	Black	Stereo—Mono LP	¾-1½
V-15 Type II	VN15E	F	*.0002" x .0007"	Black	Stereo—Mono LP	¾-1½
V-15 II-7	VN7		.0007"	Gray	Stereo—Mono LP	¾-1½

*ELLIPTICAL

NOTE: FOR UNITS NOT LISTED. REPLACE CARTRIDGE

STYLI FOR MONAURAL RECORDS

M44 Series, M55E, M80 Series	N44-1	A	.001" Diamond	Blue	For Mono LP	1½-3
M98/A, V-15	N44-3		.0025" Diamond	Green	For 78 RPM	1½-3
M31E, M32E	N32-3	G	.0025" Diamond	Green	For 78 RPM	2½-5
M33, M77 Series	N33-1	D	.001" Diamond	Blue	For Mono LP	1½-3
M99 Series	N78		.0025" Diamond	Green	For 78 RPM	3 -6
V-15 Type II, M75, M91, M92, M93 Series	N75-3	E	.0025" Diamond	Green	For 78 RPM	1½-3

STYLUS INTERCHANGEABILITY

Styli for M31E and M32E Cartridges are interchangeable.

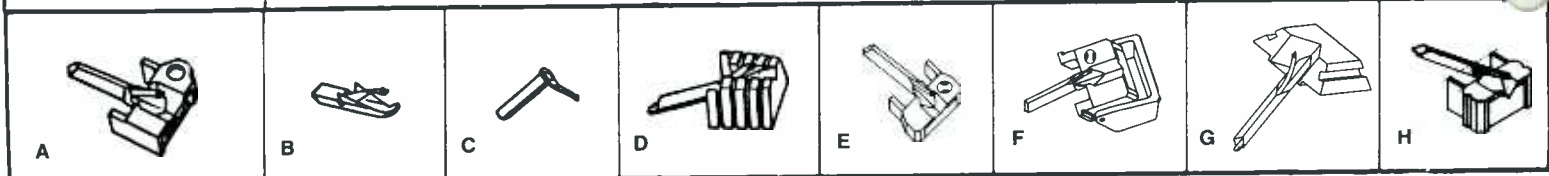
Styli for M33 Series and M77 Cartridges are interchangeable.

Styli for M44 Series, M55E, M80 Series, M98/A, and V-15 Cartridges are interchangeable. EXCEPTION: VN2E Stylus can be used ONLY in the V-15 Cartridge.

Styli for M75 Series may be used with V-15 Type II, M91, M92 and M93 Series Cartridges. NOTE: THE VN15E and VN7 Styli may ONLY be used in the V-15 Type II Cartridges.

The N91E, N92E, N92G and N93E Styli are interchangeable but may only be used in the M91E, M92E, M92G and M93E Cartridges.

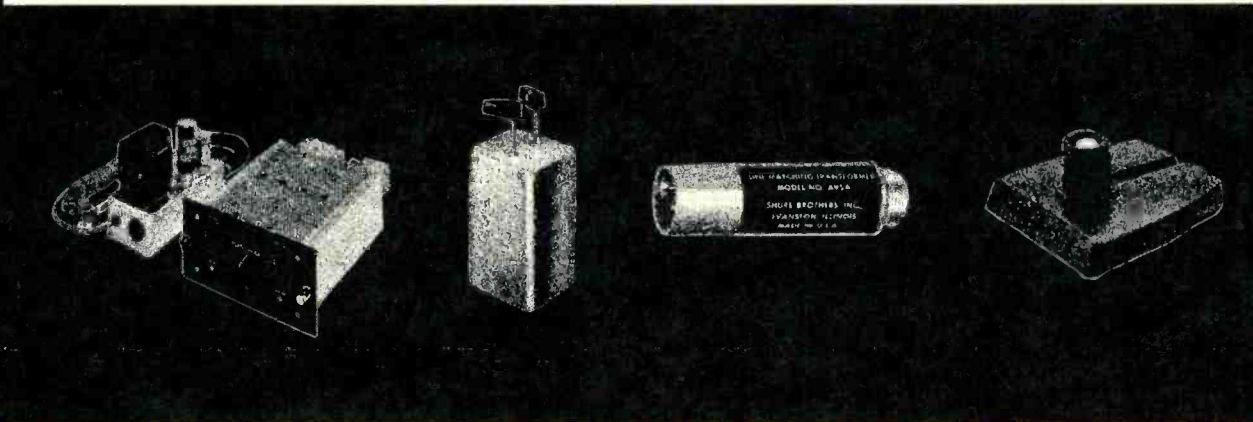
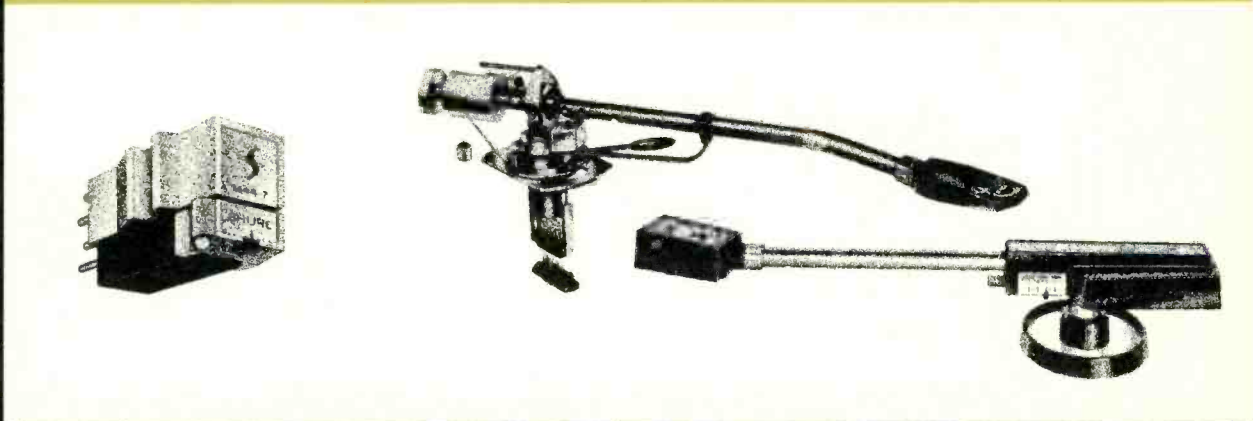
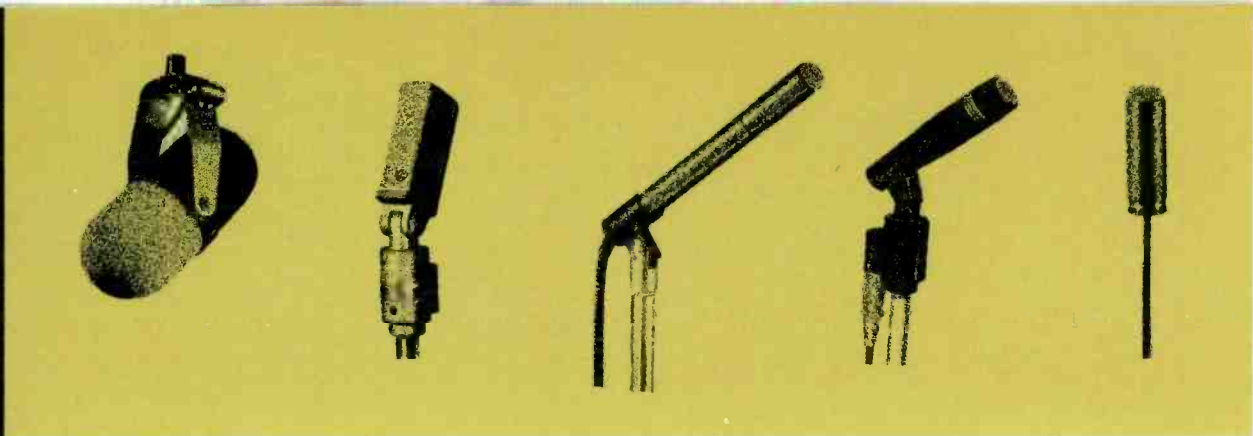
Styli for M3D, M3/N21D, M7D, M7/N21D, M8D, M21, and M22 are interchangeable.



technical data for

SHURE

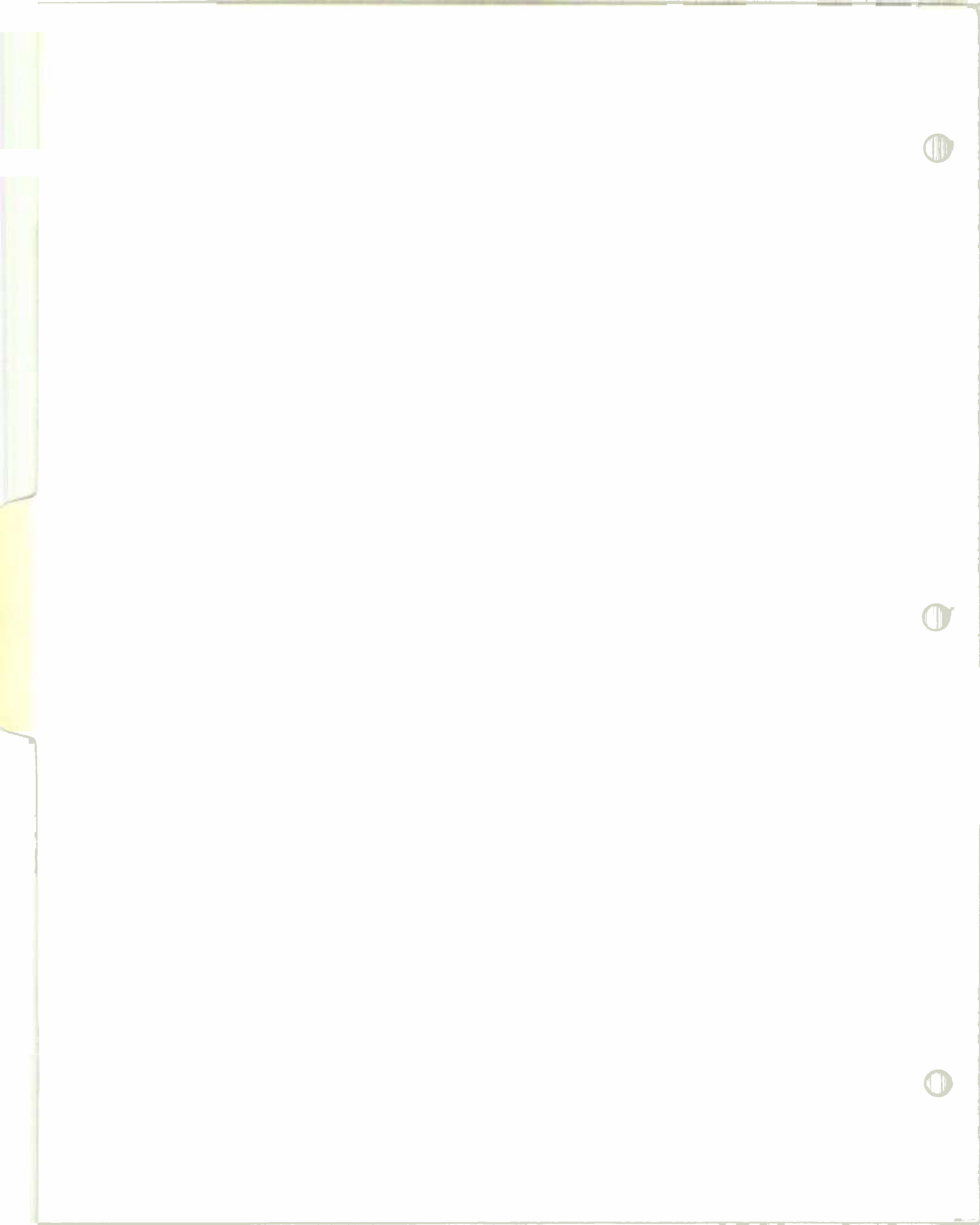
PROFESSIONAL PRODUCTS



SPECIAL PRODUCTS

For Your Information on other Shure Products

For further information contact: **R. W. Carr, Manager**
Professional Products Division
Shure Brothers, Incorporated
222 Hartrey Avenue, Evanston, Illinois
Phone: DA 8-9000





General

The Shure Model M675 Broadcast Production Master is designed to be used as an accessory to the Shure Model M67 (or M67-2E) Professional Microphone Mixer to significantly broaden the scope of applications for the M67 in the professional field. When used with an M67, it provides additional magnetic phono and line inputs with cue provision for previewing the material supplied to these added inputs.

The combination of the M67 and the M675 Broadcast Production Master provides a complete, compact console permitting mixing of a number of microphones, high level sources (such as tape or tape cartridge machines) and turntables. By making an internal jumper change, the two phono inputs may be used for tape head or high impedance microphone inputs. In special applications the M675 can also be used with the M63 Audio Master.

Features

- Provides a complete compact portable production console when used with Model M67 Professional Microphone Mixers.
- Adds four channels with cue provision, when used with the M67.
- Powered by either internal batteries (popular 9V type) or by M67. Can also provide battery voltage for powering M67.
- Operator can hear program material at a reduced level during cuing.
- Wide flat frequency response and low distortion.
- Extremely low noise and RF susceptibility.
- Four balanced line inputs with individual gain controls.
- Two line inputs switchable to magnetic phono inputs (RIAA equalization).
- Convertible line inputs are switchable at front panel.
- Two line inputs are switchable between high impedance, bridging, or 600 ohm terminating.
- Front panel 600 ohm headphone output jack for program monitor and cue. Rear panel headphone output jack for program monitor.
- External 8 ohm speaker output jack for monitoring program and cue, with provision for external muting.
- Internal monitor speaker for program and cue.
- All connections are phase indicated.
- Compact, lightweight.
- Stacking hardware included for mounting M675 to M67.

SPECIFICATIONS

PERFORMANCE:

Frequency Response:

Program Channel (measured at M67 output):

phono: ± 2 db of standard RIAA

line: ± 2 db, 30–20 KHz

Monitor Channel: response tailored to -5 db @ 40 Hz, -3 db @ 15 KHz.

Gain at 1 KHz:

A. Program Channel:

Input	Mix Bus Output (with 3.5K load)	M67 Output
Phono	+13.5 ± 2 db	+83.5 ± 2 db
Line 1, 2	-29 ± 2 db	+41 ± 2 db
Line 3, 4 bridge	-29 ± 2 db	+41 ± 2 db
Line 3, 4 terminate	-35 ± 2 db	+35 ± 2 db

NOTE: Gain to Mix Bus output will be approximately 13 db higher than shown above if loaded with high impedance (50K).

B. Monitor Channel (to 8 ohm speaker output loaded with 8 ohms):

Input	Condition	Gain
Headphone cable (from M67)	No pots in cue	+13 ± 2 db
Phono	This input only in "cue"	+49 ± 2 db
Line 1 or 2	"	+7.5 ± 2 db
Line 3 or 4, bridge	"	+7.5 ± 2 db
Line 3 or 4, terminate	"	+1.5 ± 2 db

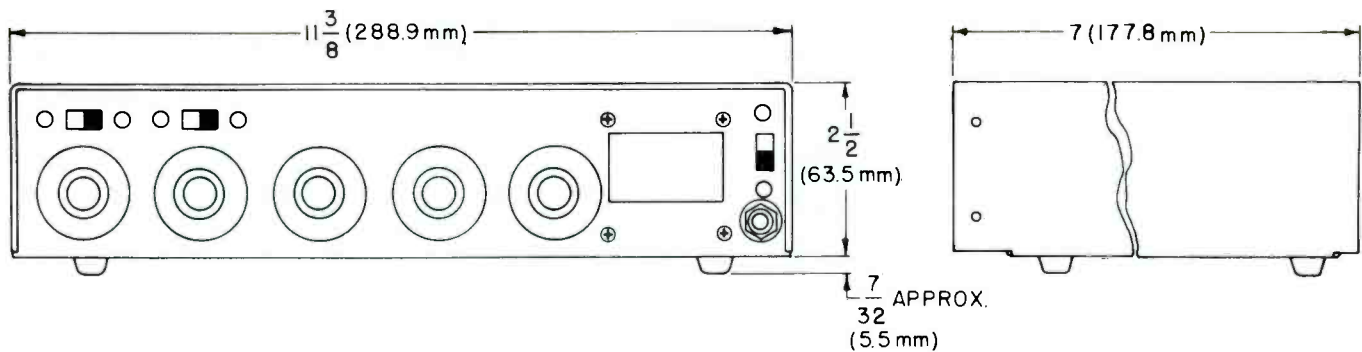
NOTE: Monitor channel gain to 600 ohm output loaded by 600 ohms is 19 db higher than gain shown in above table.

NOTE: Connection of M675 to M67 will reduce gain on M67's inputs by 3 db.

Noise:

Phono: measured at Mix bus output, at least 71 db below 10 mV input, 20–20 KHz. Measured at M67 output, noise depends upon M67 master gain control. With M67 master gain at "5½" (-20 db) noise output of M67 will be -50 dbV maximum.

Line: will not add to noise of M67.



Distortion:

Program Channel: (measured at Mix Bus output)

Phono: Less than 1% THD with input level of 35 mV, 30 Hz–20 KHz.

Line: Less than 1% THD with input level of +18 dbm, 30 Hz–20 KHz.

Monitor Channel: measured at 8 ohm speaker output with 8 ohm load. Less than 1.0% THD with output level of .56 volts to 8 ohms (40 mW) 100 Hz–15 KHz. Less than 2% THD with level of .31 volts at 40 Hz.

Control Interaction:

Under 1½ db with any control combination.

Inputs:

Input	Impedance		Input Clipping
	Designed for Use With	Actual (Internal)	
Phono	Magnetic phono cartridges	25K ohms* +350 pF	90 mV
Line Bridging	Less than 10K ohms	75K ohms ±10%	Over +16 dbV (6.3 VRMS)
Line Terminated	600 ohms	600 ohms ±10%	Over +18 dbM (6.3 VRMS)
Monitor Input (via headphone plug)	M67 headphone jack	1000 ohms ±20%	Over +8 dbV (2.5 VRMS) Corresponds to +18 dbM output from M67

*NOTE: The input impedance is set for 25K which is the correct load for a stereo cartridge operating with the L & R channels parallel (monophonic mode). If an input impedance of 47K is desired, the 47K resistors (R226, R227) across the phono input jacks may be removed.

Minimum Common Mode Rejection:

80 db with line input of 10 volts at 100 Hz.

Outputs:

Output	Impedance		Output Clipping Level
	Designed For Use With	Actual (Internal)	
Mix Bus	M67 Mix Bus (3.5K load) or higher	13K ohms ±20%	---
Front Panel Headphone Jack	600 ohms or greater	70 ohms ±10%	+17 dbV (7 VRMS)
Rear Panel Headphone Jack	Low High (See "Headphone" section)	5K ohms ±20% 1.1K ohms ±20%	Same as M67
8 ohm Speaker Output	8 ohms or greater	4 ohms max.	-2dbV (0.8 V; 80 mW)

Overload and Shorting Protection:

Shorting the outputs will produce no damage. Overload of phono inputs up to 3 volts will produce no damage.

Operating Voltage:

27 VDC nominal supply from either internal supply comprised of six 9 V type 216 batteries or from the associated M67 or M63 Audio Master. Minimum supply is 21.5 VDC; maximum is 35.0 VDC.

CONTROLS, CONNECTIONS AND OPERATIONS

INPUTS

Line:

The four line inputs (Cannon XL-3-13 type connector) are located on the rear panel and designated "Line 1" through "Line 4." Inputs are balanced (internal transformer, mumetal shielded) and connections are Pins 2 and 3 "hot," Pin 1 "ground."

Line 3 and Line 4 may be either 600 ohm line termination or bridging, the choice being made by the appropriate position of the "Bridge-Terminate" switches above the Line 3 and Line 4 input connectors. To obtain "Line" operation for the Line 1 and Line 2 inputs, the corresponding "Line-Phono" switch above the Input 1 and Input 2 controls on the front panel must be in the "Line" position.

Impedances and operating signal levels are shown in the "Input Specifications" Section.

Phono:

The two phono inputs (RCA type phono jack) are located on the rear panel and designated "Phono 1" and "Phono 2." To obtain "Phono" operation for the Phono 1 and Phono 2 inputs, the corresponding "Line-Phono" switch above the Input 1 and Input 2 controls on the front panel, must be in the "Phono" position.

The nominal "Phono" input impedance is 25K ohms resistive, 330 pf capacitive. In order to change the resistive input to 47K ohms, remove the 47K ohm resistors at "Phono" input terminals (R226, R227).

When phono inputs are not being used, both "Line-Phono" switches should be left in "Line" to conserve battery life.

OUTPUTS

Mix Bus:

The Mix Bus output is a shielded cable extending from the rear of the M675 cabinet and terminated with a phono plug. The Mix Bus output carries the mixed signals to the Mix Bus connection of the M67 or M63.

Front Panel Headphone Jack:

This jack provides both program and cue material to 600 ohm headphones. The "Monitor" control on the front panel is used to adjust this headphone level. The internal (or external) 8 ohm speaker is muted when a plug is inserted into this jack.

Rear Panel 600 Ohm Headphone Jack:

This is a two-position jack for monitoring the output of the M67, when the "Headphone" cable at rear of M675 chassis is connected to the M67 "Headphone" jack. The two-position phone jack is used to provide a choice of level. Normally, a single circuit plug should be used. If inserted only partially to the first detent, the output level will be less than when pushed fully in. If stereo phones are used, the two-position plug may be inserted fully and the output will appear in both phones.

This jack is an extension of the 2-level headphone jack of the M67, and hence, it carries program material only and its level is not controlled by the monitor level control on the front panel.

While intended primarily for 600 ohm to 2K ohm headphones, this jack may be used with 8 ohm to 50K ohm headphones, with resultant variation in level. Crystal phones may also be used.

The "Tip" connections of the headphone plugs and the two phono inputs are in phase with Pin 3 of all input connectors on both the M675 and M67, and with the tip of the Mix Bus connector.

Rear Panel 8 Ohm Output Speaker Jack:

This jack is for an 8 ohm high efficiency speaker or for 8 ohm high quality headphones and provides both program and cue material. The internal speaker on the front panel is muted when the phone plug is inserted into this jack. Use of the front panel headphone jack, in turn, will mute the internal (or external) speaker. A mono (2 circuit) plug should normally be used. If a stereo (3 circuit) plug is used, external muting of the internal speaker is possible. See schematic.

Monitor Speaker:

The internal speaker is activated unless either the external 8 ohm Output Jack or the Front Panel 600 ohm Headphone Jack is used. It monitors both program and cue material.

CONTROLS

Individual Input Gain Controls:

Front panel controls designated "Input 1" through "Input 4" are the individual gain controls for correspondingly numbered inputs. Note that the input connectors are located on the rear panel directly behind their corresponding control.

The Input 1 and Input 2 controls may be used to control either "Line 1-Phono 1" or "Line 2-Phono 2" inputs, respectively, depending upon the position of the "Line-Phono" switch located immediately above the Input 1 and Input 2 controls.

NOTE: The Line-Phono switches above Controls 1 and 2 are intended as SET-UP CONTROLS, not operating controls. To conserve battery life, these switches also control supply voltage to the phono preamplifiers. Hence, the line-phono switches should not be thrown while "on the air" unless the input controls are both fully CCW ("0") to avoid introducing switching noise in the program material. If phono inputs are not being used, both of these switches should be switched to "line" to conserve battery life.

Monitor Gain Control:

This control is used to adjust the level of the front panel monitor speaker, the front panel Headphone jack, and the rear panel speaker jack. (See Cue Operation below.)

Cue Operation:

The M675 "Input" controls are in the Cue position when rotated fully counter-clockwise and past the detent.

With no M675 Input Controls in the "Cue" position, the monitor amplifier receives a program feed via the connection to the M67 headphone output. The "Monitor" gain control can then be used to adjust the level of this signal which appears across the front panel monitor speaker, the front panel Headphone jack, and the rear panel speaker jack.

When one or more M675 Input controls are turned to "Cue" (fully counter-clockwise), the program feed to the monitor amplifier is attenuated by 19 to 31 db. The Cue material is then routed to the monitor amplifier, overriding the program material. When all Input controls are returned to normal (not in cue), program feed is again applied at normal level to the monitor amplifier. This provision allows monitoring of program material at a low level while simultaneously cuing.

Talk-Back Operation:

To hear talk-back material originating at the opposite end of a two-way line connected to the M67 line output, turn all input pots on the M675 out of cue

and turn up the monitor amp volume control. The M67 master volume control may be turned down if necessary.

D.C. Power

D.C. Power is supplied by either the M675 Broadcast Production Master or the associated Model M67 Professional Microphone Mixer. The M675 will power the M67 when using batteries, and the M67 will power the M675 when A.C. is used.

The D.C. Power connection between the M675 and M67 is made via the red and black wires identified as "30 VDC" on rear panel of M67. The Heyco connector on the red wire is inserted into the red Heyco receptacle on M67 chassis; the Heyco connector on the black wire is inserted into the black Heyco receptacle on M67 chassis.

When the M675 is not connected to an M67, the Heyco connectors on the red and black wires should be connected respectively to the red and black "30 Volts D.C." Heyco receptacles on rear panel of M675. This practice eliminates the possibility of shorting out the M675 battery power supply through accidental contact of Heyco connectors on the red and black wires.

When batteries are in place in the M675, and it is connected to an A.C. operated M67, Automatic Power Change-Over will occur if the A.C. line voltage fails. The batteries will then power both the M67 and the M675.

ON-OFF Power Switch:

The on-off slide switch is located to the right of the monitor speaker. This switch controls *ONLY* the internal M675 battery supply. Therefore, it is not necessary for this switch to be on if an external

source (or M67) is used to supply power to the M675. To retain automatic switchover features if M67 A.C. fails, this switch *MUST* be on. Whenever the unit is not in use, and batteries are in place, the M675 power switch should be off.

Battery Replacement:

The M675 contains a battery supply consisting of six 9V transistor radio batteries (Burgess 2U6, Eveready #216 or equivalent are recommended). Access to the steel, leak-resistant battery compartment is on the bottom panel of the M675. To remove the battery compartment, each of the two locking screws should be given a 1/4 turn CCW. The battery assembly may then be removed. The six 9V batteries are snapped into position on the printed circuit board contained in the compartment cover. The entire compartment is removable from the M675 by disconnecting the snap connector (attached to the leads leaving the cover) from the M675 receptacle. When the M675 is stacked with an M67 Mixer, the M675 should be below the M67 to retain access to this compartment.

Battery Check:

The nominal voltage available from the complement of six 9V batteries is 27.0 volts. Initially, new batteries may provide a supply voltage of up to 30.5 volts. Minimum acceptable battery voltage is considered to be 21.5 volts.

The battery-check function of the M67 may be used to indicate battery condition when the M67 and M675 are used together. "0" on the M67 VU meter indicates a marginal battery condition.

For best performance on battery operation at temperatures below 40°F, change batteries when the Battery Check meter reading is +1.0 VU or lower. This is due to the operating characteristics of carbon zinc batteries at low temperatures.

Current Drain and Battery Life:

Condition	Approximate Current Drain	Approximate Battery Life
M675 only, "phono-line" in "line," monitor level down	1 mA	over 300 hrs
M675 only, "phono-line" in "phono," monitor level down	4 mA	170 hrs
M675 + M67, "phono-line" in "line," M67 @ +4 dbM	5 mA	140 hrs
M675 + M67, "phono-line" in "phono," M67 @ +4 dbM	8 mA	85 hrs
M675 + M67, "phono-line" in "line," M67 @ +4 dbM, M675 monitor speaker at 10 mw	7 mA	100 hrs
M675 + M67, "phono-line" in "phono," M67 @ +4 dbM, M675 monitor speaker at 10 mw	10 mA	65 hrs

NOTE: Due to operating characteristics of carbon-zinc batteries at low temperatures, the useful operating life will be noticeably shorter at lower than normal room temperatures. See Battery Check Instructions.

Connection to M67:

Stacking hardware is included for mounting the M67 on top of the M675 (see illustration). The plug on the

Headphones output cable at the rear of M675 is to be inserted fully into the M67 Headphones jack. The phono type plug on the Mix Bus cable at the rear of the M675 chassis is inserted into the Mix Bus jack (Phono type) on the M67 chassis. If rack mounting is desired, the M67 and M675 can each be mounted in A68R rack mount accessories. The connection cables on the M675 are of sufficient length to reach the M67 in this case.

RF Susceptibility:

When using M675-M67 combination in a high RF location, RF pickup may occur due to the grounding system of the Mix Bus on early M67s. If this difficulty should occur, it may be easily remedied by shorting the ground connection of the M67 Mix Bus input jack to chassis. To make this modification, which should be performed by qualified service personnel only, disconnect AC power from the M67 and remove M67 cover. Connect a short wire from the ground lug of the Mix Bus jack to the nearest chassis point. The ground lug of mic. input connector #2 or #3 may be used. The ground lug is the large lug closest to the cover. This wire should be as short as possible.

Conversion of Phono Inputs to Tape (NAB) or Flat:

Inputs 1 and 2 may be converted from RIAA equalization to tape (7½ i.p.s. NAB) or flat. The modification should be performed by qualified service personnel only.

1. Disconnect M675 from M67.
2. Remove four Phillips Head Screws retaining cover—one on front, one on back, two on bottom.
3. Remove cover.
4. Refer to Figure 00 of Printed Circuit Assembly B1. Note the jumpers on the printed circuit assembly.
5. Remove jumpers from Pin C to Pin E (Channel 1) and Pin S to Pin V (Channel 2).
6. Replace jumpers to achieve desired equalization. For Channel 1, jumper C to D for "flat," or B to D for "tape." For Channel 2, jumper S to T for "flat" or R to T for "tape."
7. DO NOT remove any jumpers inserted through the actual printed circuit board. Only alter jumpers between pins mentioned above.
8. Replace cover.

Specifications for Tape and Flat Equalization:

Gain in flat = 6.5 db to Mix Bus output, Gain in Tape (7½ i.p.s.) = 16.0 db to Mix Bus output.

Response in flat is ±2 db, 30–20 KHz.

Response in tape is ±2 db of the 7½ i.p.s. NAB curve from 50 Hz to 15 KHz.

Distortion: under 1.0% with tape input of 26 mV or flat input of 78 mV.

Input Clipping Level: Tape: 90 mV; Flat: 225 mV.

DESCRIPTION OF CIRCUITRY (Refer to Schematic)

Input Circuitry:

Line inputs 1 and 2 are transformer coupled to line/phono switches 1 and 2. Phono inputs are amplified by the two phono preamplifiers consisting of Q₁ and Q₃ for channel 1 and Q₂ and Q₄ for channel 2. In the phono preamps, equalization is

provided in the feedback path from the collector of Q₃ (Q₄) to the emitter of Q₁ (Q₂). For channel 1 phono equalization, gain is determined by the ratio of the R7-C6, R9-C10 combination versus R13. The outputs of the phono preamps also drive the line/phono switches. Setting a line/phono switch to phono will, in addition to transferring the associated input volume control, apply DC voltage to the preamplifier power supply terminal. Either switch will apply power to both phono preamplifiers.

Line inputs 3 and 4 are directly transformer coupled to input volume controls 3 and 4. Bridge/terminate switches on these two inputs switch a 600 ohm terminating resistor off of or onto the input of the transformer.

The outputs of the four input pots are summed via 33K build-out resistors and carried via shielded cable to the Mix Bus input of the associated M67.

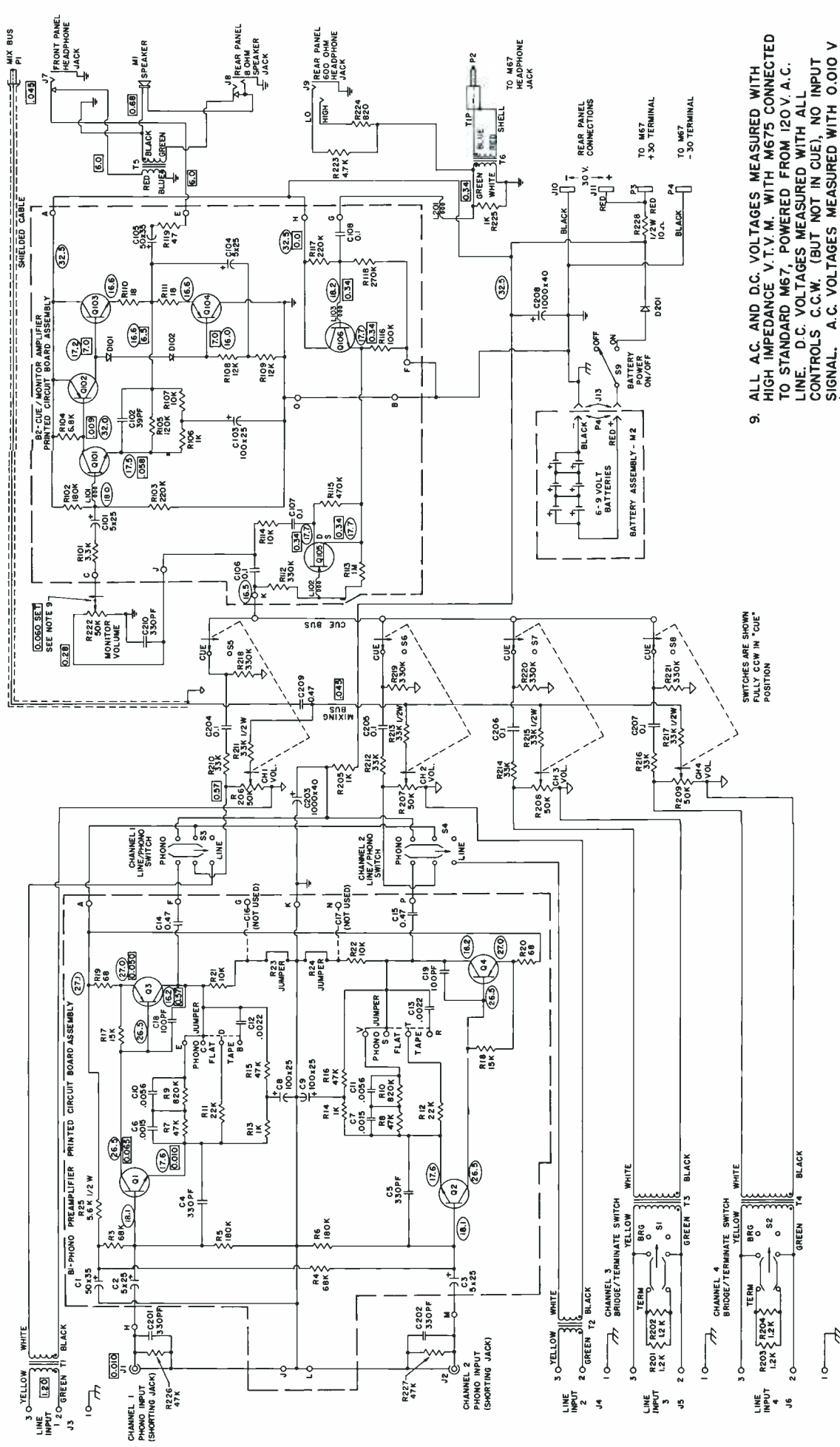
Monitor-Cue Circuitry:

The phone plug and cable at rear of the M675 are plugged into the associated M67 headphone output. Program material appearing at the M67 output is brought via this cable to the M675 where it is transformer coupled into emitter follower Q106. The output of the follower is applied to FET Q105, which serves only as a variable attenuator. With no input pots in cue, the FET is "on" and presents a low impedance in parallel with R115 (470K). The output of the FET (Drain) drives the monitor volume control. When any pots are in cue, their associated 330K resistor (R218-221) is switched to the cue bus which, thru R112 (330K) turns the FET off. Hence, the resistance of the FET in shunt with R115 is now very high, and the program material fed to the monitor volume pot is reduced in level by 19 to 31 db. At the same time, the cue material for the channel in cue is fed to the cue bus and hence to the top of the monitor volume control (for channel 1 the path is R210, C204, C106).

The monitor amplifier is a complementary symmetry amplifier similar to many hi-fi power amplifiers. The gain of the stage is 40 db, determined by the ratio of R105 to R106. The idle current of the stage is approximately 1 mA. The output of the monitor amp drives J7 directly. J7 is transformer coupled to J8 and the internal 2" speaker.

Guarantee:

The Shure Model M675 Broadcast Production Master is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential to carefully repack the unit and return it to the factory, or, if outside the United States, to your dealer or authorized Shure Service Center for repair. Our guarantee is voided if the basic assembly has been modified other than so suggested in this sheet or if the unit has been subjected to unreasonably rough handling.



- NOTES:
1. ARROWS ON POTS INDICATE C.W. ROTATION.
 2. ARROWS ON SWITCHES INDICATE TO LEFT.
 3. ALL FIXED RESISTORS IN OHMS, 1/4 WATT COMPOSITION TYPE, ±10%, UNLESS OTHERWISE SPECIFIED. K=1,000, M=1,000,000.
 4. ALL CAPACITORS IN MFD, 50 VOLT OR GREATER, UNLESS OTHERWISE SPECIFIED.
 5. ALL LEAD PAIRS TO INPUT TRANSFORMERS T1-T4 ARE TWISTED; YELLOW WITH GREEN AND BLACK WITH WHITE.
 6. GROUNDS: \uparrow CHASSIS GROUND \equiv CIRCUIT GROUND \rightarrow MIX BUS GROUND
 7. PARTS INSIDE DOTTED LINES ARE ON PRINTED CIRCUIT BOARD ASSEMBLIES.
 8. \square DENOTES A.C. MEASUREMENTS. \square DENOTES D.C. MEASUREMENTS
 9. ALL A.C. AND D.C. VOLTAGES MEASURED WITH HIGH IMPEDANCE V.T.V.M. WITH M675 CONNECTED TO STANDARD M67, POWERED FROM 120 V.A.C. LINE. D.C. VOLTAGES MEASURED WITH ALL CONTROLS C.C.W. (BUT NOT IN CUE), NO INPUT SIGNAL. A.C. VOLTAGES MEASURED WITH 0.010 V (10 MV) 1KHZ AT PHONO INPUT (OR 1.2 V.A.C. AT BRIDGING LINE INPUT), ONE INPUT CHANNEL FULLY C.W., OTHER INPUTS FULLY C.C.W. BUT NOT IN CUE. M67 MASTER ADJUSTED TO GIVE "0 VU" ON +4 DBM SCALE, M67 LINE OUT TERMINATED IN 600 OHMS. MONITOR VOLUME ON M675 SET TO PRODUCE 0.050 V.A.C. AT ITS ROTOR (APPROX. "7" ON SCALE). TO CHECK CUE CIRCUIT OPERATION, MEASURE SIGNAL AT PIN "E" OF CUE/MONITOR BOARD. SIGNAL = 6 VOLTS. IF ONE INPUT CONTROL IS SWITCHED TO CUE (NOT INPUT BEING DRIVEN), LEVEL AT PIN "E" SHOULD DROP TO 0.54 V.A.C.
 10. VOLTAGES SHOWN ARE TYPICAL AND MAY VARY ±20%.



SHURE

NEW!



The Model M675 Broadcast Production Master can be stacked with any of the Shure M67 Series* Microphone Mixers or the Shure M63 Series* Audio Masters to get total audio control in a system that is less than 6" high, less than 8" deep, and less than 12" wide.



Model M675 Broadcast Production Master

A TOTALLY NEW APPROACH TO BROADCAST SYSTEMS FLEXIBILITY

The Shure M675 Broadcast Production Master was designed for use with the Shure M67 Series* Professional Microphone Mixers. Together they make up what is quite likely the world's smallest-size, lowest-cost, professional-quality broadcast console. The M675-M67 permits the mixing of a number of microphones, high level sources (such as tape or tape cartridge machines and phone lines), and turntables. Among its most notable features are *extremely low noise, low RF susceptibility, wide frequency response. Distortion is less than 1%!*

The M675-M67 provides "cueable" magnetic phono and line inputs for greater equipment flexibility at lower cost in all of these broadcast, studio and remote assignments and functions:

PRODUCTION STUDIO CONSOLE

A total of eight inputs, four with cuing.

COMPLETE AUDIO CONSOLE

For both in-studio and remote assignments.

COMPLETE CATV CONSOLE

Gives you complete audio control—with monitoring and cuing provision—over the audio portions of CATV broadcasts.

STANDBY CONSOLE

Functions as a complete standby console in any broadcasting operation.

CUE AMPLIFIER

For amplified cuing during sports, interviews, and special events broadcasts.

TAPE DUPLICATION AND EQUALIZATION

Use with the Shure M63 Series* Audio Masters when microphones are not part of the input.

*Includes models for use with 240 V \pm 10% A.C. 50/60 cycle power lines.

See Other Side for Practical Application Ideas for Your Station



Model M675 Broadcast Production Master

CAPABILITIES

INPUT PROVISIONS

Working with the M67, the M675 gives you four high-level, balanced-line inputs, each with its own switchable "Cue" mode. Two of the inputs are convertible through front-panel slide switches to magnetic phono inputs (RIAA equalization), and the other two line inputs are switchable between high impedance bridging and 600 ohm terminating line inputs. A simple internal jumper change converts the two phono inputs to high impedance inputs for microphones or tape heads. In addition, the M67 gives you four micro-

OUTPUT PROVISIONS

There are four monitoring facilities provided by the M675: (1) an internal speaker built into the front panel; (2) a rear-panel, eight ohm speaker output jack with provision for external muting; (3) a front-panel headphone jack that provides an automatic muting of the output from the internal or external speaker when a headphone

CUE PROVISIONS

When the gain control for any of the four M675 channels is switched to its "Cue" mode, program material at the monitor outputs is automatically attenuated by approximately 20 db (not completely muted), and the cue material is heard above it so the engineer can

FAILSAFE POWER SUPPLY

When A.C. power is used, the M67 supplies power to the M675; for battery operation, the M675 uses six 9V transistor batteries (self-contained) to supply power to the M67. In the event of an A.C.

phone inputs, one of which is switchable to line. Thus the M675-M67 combination permits the mixing of several microphones, high level sources such as tape machines, phone lines, and turntables.

The M675 may also be used with the Shure M63 Series Audio Masters. Through the M63's variable treble and bass tone controls, and its continuously variable high-pass and low-pass (6 db-per-octave) filters, you can get an almost infinite number of different response curves for response shaping or equalization.

plug is inserted, and (4) a rear-panel headphone output jack which enables the announcer to monitor program material *only*. (A monitor gain control built into the front panel governs the output levels of the internal speaker, the rear-panel external speaker jack, and the front-panel headphone jack.)

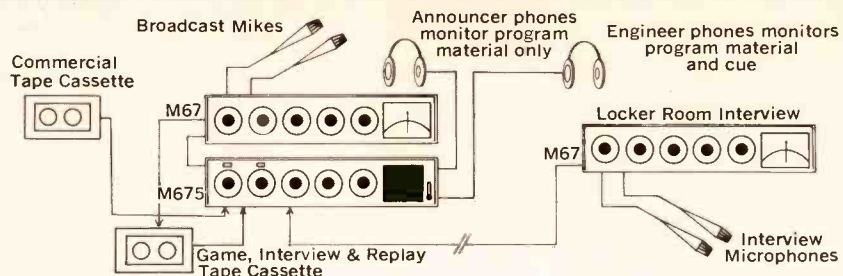
monitor program material at all times, even during cuing. Cue-up sounds cannot be accidentally fed into the program amplifier. Because the M675 uses FET switching (no relays), there are no mechanical cuing noises.

power failure, switchover to battery power is made instantly, automatically and noiselessly. The M67's built-in battery check switch may be used to verify condition of the batteries located in the M675.

EXAMPLES OF HOW TO USE THE M675 BROADCAST PRODUCTION MASTER

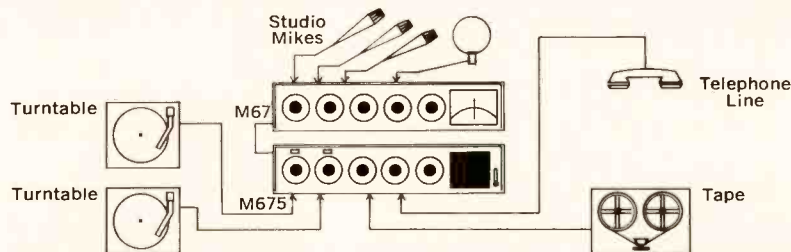
REMOTE SPORTS CONSOLE

A complete and remarkably versatile remote console set-up for sports broadcasts is shown at the right. The total cost for this flexibility is a small fraction of the cost for more complex—but no more effective—"custom" remote consoles. The M675 and M67 provide complete audio integration and control over the live and tape recorded portions of game play-by-play and locker room interviews. "Instant Replay" and commercial tapes are constantly monitored by and cued by the engineer through headphones, while the program announcer monitors program material only.



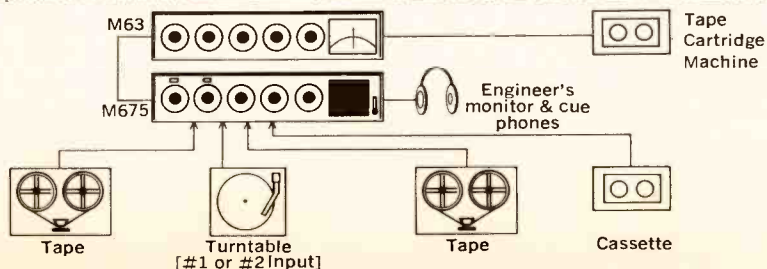
PRODUCTION/STANDBY/CATV CONSOLE

The diagram at the right shows how the M675 teams up with the M67 Mixer to meet all the demands of a production console, a broadcast standby console, or a complete CATV audio console. The M67 accepts four microphone inputs, while the M675 handles all cued program sources: turntables, tape machines and phone lines. The engineer hears the program material through the built-in loudspeaker or through headphones, and to cue material from any source, he simply switches the M675 input to "Cue" (which attenuates program material by about 20 db), and cues the source he needs.



TAPE DUPLICATING AND EQUALIZING

The M675 can be used with the Shure M63 Audio Master to mix various material sources into a single master tape. Cue is provided on each input. Source material is shaped or equalized by the M63, so that differences in level, balance and roll-off from the various sources are minimized. The result is uniform audio tonal balance on the master tape—regardless of the number of sources involved. The engineer monitors and cues through either the built-in loudspeaker or through headphones. The same set-up is ideally suited for tape duplication.





May, 1971

.. TWO NEW PROBLEM-SOLVERS ..

THE SHURE S53P AND S55P"DISTANT PICKUP" MICROPHONE ISOLATION STANDSTHE PROBLEM

It has always been far easier to obtain microphone pickup at close range than from a distance. The problems of distant pickup have been feedback and poor sound quality.

The feedback problem has been greatly minimized through the use of uni-directional microphones and column speakers, but no one really has known why the distant-pickup sound sometimes has had an unpleasant "hollow" quality.

But now, through extensive engineering research, Shure introduces a new concept to help solve this problem!

THE SOLUTION

The annoying "hollow" quality sometimes associated with distant pickups is caused by direct sound and reflected sound cancelling each other. By locating the microphone close to the floor, the two sound paths coincide, resulting in the same natural quality of sound which is associated with close microphone pickup. (See attached copy of Data Sheet for explanation.)

THE PROBLEM-SOLVING PRODUCTS

The Shure Models S53P and S55P Distant Pickup Microphone Isolation Stands make it possible to put this new concept to practical use--and at the same time provide excellent shock isolation from floor vibrations.

A SHURE EXCLUSIVE

The Shure Model S53P is designed especially for the Model SM53 Unidirectional Microphone. The Shure Model S55P is designed for use with the Shure Models 545, 548, 565, SM57, and SM58. The S53P and S55P WILL NOT properly accommodate microphones manufactured by any company other than Shure.

Note: The Model S55P is not recommended for microphones with self-contained swivel adapters (such as the 55S or 545S) or microphones that have On-Off switches in the handle (such as the 545SD or 565SD).

(Please see next page.)



PRICING

<u>Model</u>	<u>List</u>	<u>Net</u>	<u>60% Off</u>
S53P	\$28.00	\$16.80	\$11.20
S55P	28.00	16.80	11.20

AVAILABILITY

Units are available from stock for immediate delivery.

ANOTHER EXAMPLE OF PROBLEM-SOLVING ENGINEERING FROM SHURE ... SO ...

... next time someone comes to you with the problem of how to pick up an orchestra, stage play, or chorus, suggest a Model S53P or S55P Stand and an appropriate Shure unidirectional dynamic microphone.



R. W. Ponto
Sales Manager

RWP:IR
Enc.



“DISTANT PICKUP” MICROPHONE ISOLATION STAND



The Shure Model S53P and S55P are designed specifically for “distant pickup” microphone situations, where the distance from source to microphone is greater than the height of the source from the floor. When a conventional microphone stand is used as in Fig. 1a, reflections from the floor will arrive out of phase at the microphone, and cancel out certain groups of tones. If the microphone is placed on the floor, as in 1b, these cancellations cannot occur, and the tonal balance is similar to a close microphone technique.

To be effective, this stand must support the microphone as close to the floor as possible without touching (approximately 1/8 inch). It must also provide excellent shock isolation, so that floor vibrations are not introduced into the microphone. The S53P and S55P fulfill these requirements.

The Shure Model S53P is designed especially for the Model SM53 Unidirectional Microphone. The Shure Model S55P is designed for use with the Models 545, 548, 565, SM57, and SM58. (NOTE: The Model S55P is not recommended for microphones with switches mounted in the handle).

The S53P and S55P Isolation Mounts are of rugged black plastic, rubber, and stainless steel construction which will withstand the high temperatures of stage and television lights. The legs of the S53P and S55P are spread apart to form a tripod microphone stand and may be neatly folded together, making the entire stand a size which can easily be carried in a brief case.

INSTALLATION

1. Evenly spread the stainless steel legs of S53P or S55P so as to form a tripod microphone stand.
2. Slip cable end of microphone into isolation mount, using a twisting motion on the microphone for ease of installation.
3. Insert the microphone into the isolation mount to a point where microphone is held firmly enough to prevent its falling out. Attach cable to microphone connector.
4. Adjust swivel so that grille of microphone is approximately 1/8" off floor; aim stand to direction of source.

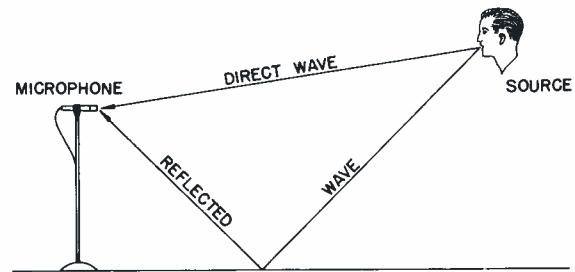


FIGURE 1a

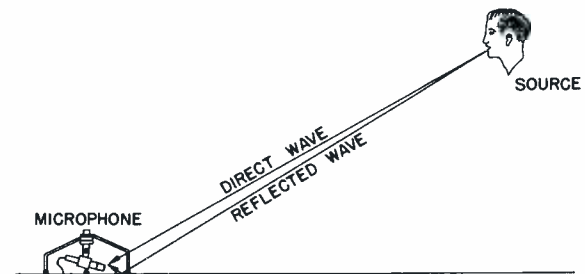
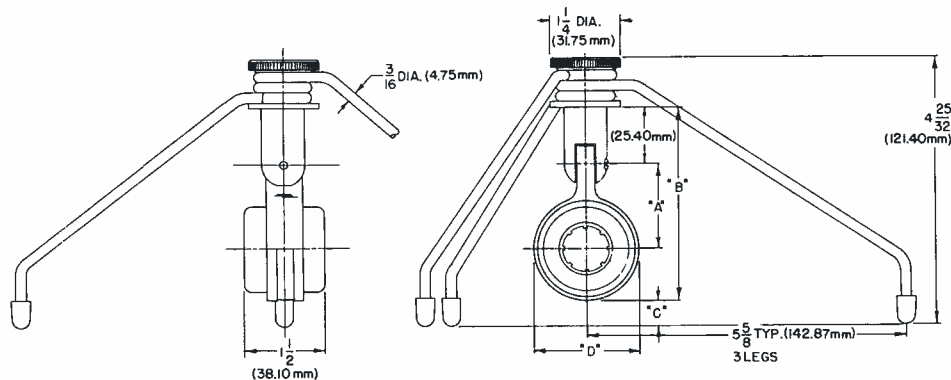


FIGURE 1b

GUARANTEE

The isolation mounts are guaranteed against defects in material and workmanship for one year from date of shipment from factory.



MODEL NO.	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"
S53P	1/2 (38.10 mm)	3.410 (86.60 mm)	1/2 (12.70 mm)	1.820 (46.20 mm)
S55P	1 5/8 (41.25 mm)	3.660 (92.90 mm)	1/4 (6.35 mm)	2.070 (52.58 mm)

OVERALL DIMENSIONS

FIGURE 2





July, 1971

NEW!THE SHURE M675 BROADCAST PRODUCTION MASTERINTRODUCING ... A NEW CONCEPT ... AND A NEW PRODUCTPREDICTING ... NEW SALES, NEW PROFITS FOR YOU!

The M675 is designed to be used in conjunction with the extremely popular Shure M67 - the mixer that has become a "standard" of the broadcast, recording, and professional audio industries.

Together, the M675 and M67 become what is probably the world's:

- * Smallest Size
- * Highly Flexible
- * Lowest Cost - Professional Quality

BROADCAST PRODUCTION CONSOLE!

The M67/M675 Console has the following outstanding features:

1. Cuing on all M675 inputs by either:
 - . Internal loudspeaker.
 - . Headphones.
 - . External loudspeaker.
2. Eight inputs:
 - . Four microphone inputs - one switchable to line.
 - . Four line inputs - two switchable to RIAA.
3. Program monitor with automatic fade during cuing.
4. Self-contained battery supply.

The M675 can also be used with the Shure M63 Audio Master for special purposes such as tape mastering and duplicating.

(Please see next page.)



The conversion of the M67 or M63 to a production console is very simple. The M675 comes equipped with:

- . Three permanently attached cables that plug into the M67 or M63.
- . A stacking kit that firmly holds the M67 or M63 on top of the M675.
- . A snap-in, integral battery compartment that holds six standard 9-volt batteries and will supply power to the M67 or M63 for battery operation or noiseless automatic switch-over in case of AC power failure.

NOTE: The M67 or M63 provides power to the M675 when operated from 117-volt AC lines.

In fact, it is not possible to even begin to list all of the uses that the M675's versatility and flexibility will permit. The applications are only limited by the imagination of its users.

Probably the most surprising thing about the M675 is its cost:

<u>List</u>	<u>User Net</u>	<u>60%</u>	<u>60-10%</u>
\$250.00	\$150.00	\$100.00	\$90.00

This means that a complete M67/M675 Broadcast Production Console will cost only \$312.00 user net ... and yet will provide the functions, quality, features, and flexibility of production consoles costing up to ten times more and of much greater size!

The application flier (enclosed) lists many uses of M67/M675 and M63/M675 combinations. The enclosed data sheet gives detailed information on the unit. Remember ... since the M675 is an "add-on" unit to be used with the Models M67 or M63, every customer who has purchased the M67 or M63 is a potential customer for the M675. Order your initial stock of this outstanding product now.



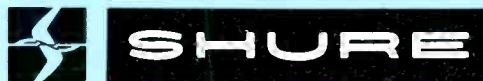
R. W. Ponto
Sales Manager

RWP:IR
Encs.

P.S. Special introductory offer: All orders for the M675 received through August 20, 1971, regardless of quantity, will receive the maximum discount (60-10%).



new!...the
"PREVENTIVE"
PROBLEM SOLVER



Model M62V Level-Loc[®]

AUDIO LEVEL CONTROLLER WITH VARIABLE INPUT LEVEL CONTROL

The Shure Model M62V Level-Loc is a low-cost, versatile audio level controller designed specifically for paging, P.A., and tape recording applications. It reduces an overly strong input signal by as much as 100 times — automatically and instantly — to keep actual sound output at a predetermined maximum level. The M62V features a variable input level control and can accept and attenuate signals from any source (regardless of level) including microphones, tape recorders, tuners, and telephone lines. Its output is at microphone level or a constant 1 volt. Use the Model M62V to solve any of these difficult sound problems.

**PREVENTS
CLOSE-UP BLASTING**

The M62V instantly and automatically reduces the unintelligible "blast" of sound from a speaker who moves too close to the microphone or shouts to make a point.

**PREVENTS
"FADE-OUT"**

The M62V affords great freedom of movement for the speaker. Even extreme "bobbing and weaving" speakers won't fade out. Output is always smooth, uniform and intelligible.

**PREVENTS
"ROLLER-COASTER" SOUND LEVELS**

Even when several different speakers with varying voice levels and speaking habits use the same microphone, the M62V keeps output level uniform.

**PREVENTS
FEEDBACK BUILD-UP**

The M62V, although it cannot completely suppress feedback, will keep feedback from becoming excessively and painfully loud. Also reduces noise caused by extreme microphone shock and vibration.

**PREVENTS
OVERLOADING TAPE RECORDERS OR
POWER AMPLIFIERS**

An M62V added ahead of a power amplifier or tape recorder limits driving voltage, so the system can be run without overloading or clipping.

**AUTOMATICALLY FADES BACKGROUND
MUSIC DURING PAGING**

The M62V can easily be set up to automatically reduce the level of background music in a P.A. system while you are paging.

LIST PRICE: \$100.00

see other side for technical information and features



M62V LEVEL-LOC AUDIO LEVEL CONTROLLER

TECHNICAL INFORMATION

WHAT IT IS: The M62V Level-Loc is especially designed to keep electrical output from a microphone or other program source locked at a predetermined maximum level—even though the input signal varies considerably above a predetermined threshold (input level where locking action begins). It is a transistorized variable gain preamplifier which cannot increase the strength of a signal, but when very large signals are applied can reduce them virtually instantly by as much as 100 times (40 db). All this without significant distortion! It is battery powered, or it can take power from an auxiliary D.C. power supply, or an auxiliary power output as on the Shure Model M67-M68 Series Mixers or M63 Audio Master.

WHAT IT DOES: The M62V Level-Loc has the effect of creating SOUND CONTROL ZONES that keep signals coming from the microphone or other input source through the Level-Loc at a pre-

determined maximum level so that output from the P.A. system is always smooth, intelligible, and comfortable to the ear—regardless of shouting, overly close talking, loud musical passages, or speakers moving around. Both a high or low impedance microphone output and an auxiliary high level, high impedance output (one volt) allow you to feed mixers, amplifiers, and tape recorders.

The Model M62V Level-Loc fixes a maximum output level without significant distortion and without introducing transients into the program material.

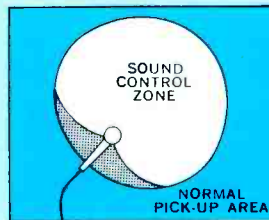
WHAT IT WILL NOT DO: The Model M62V Level-Loc will not correct an extreme condition such as a speaker moving three to four feet from a microphone, since it does not build up volume but rather "locks" it at a predetermined maximum level.

LEVEL-LOC FEATURES FOR VERSATILITY

Variable Sound Control Zones You can create any one of three "Sound Control Zones" at the microphone that will determine the distance at which gain reduction (Level-Loc action) will begin. Setting the *Distance Selector Switch* on the front of the Level-Loc at 12", for example, will result in reductions in gain when the microphone user speaks closer than 12" from the microphone. Other distance settings are 6" and 18" from the microphone. A master ON-OFF switch enables you to bypass the Level-Loc when de-

sirable—without any reduction in level from the microphone output.

NOTE: THE AUX. OUTPUT DOES NOT OPERATE WITH THE SWITCH IN "BYPASS" POSITION.

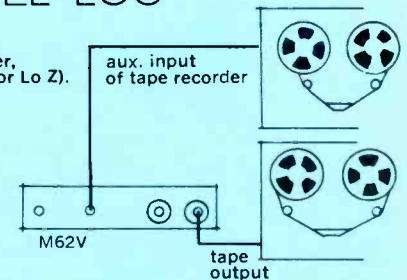
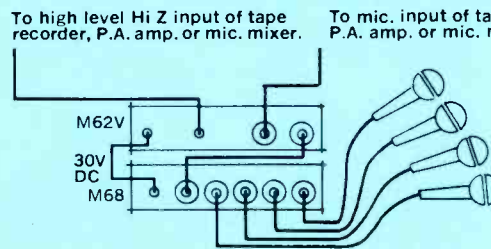
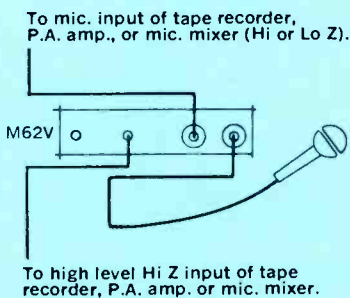


New! Input Level Control A variable input level volume control, operated by a knob on the front panel, functions as a vernier control to allow fine adjustments of input threshold that occur between the preset levels controlled by the Distance Selector Switch. The input Level Control operates as an input attenuator for signals that are higher than normal microphone levels, such as preamplified and amplified signals, and signals from tuners or tape recorders; therefore you can feed signals of any level—from microphone

level to high level—into the M62V.

New! Auxiliary High Level Output A high level, high impedance auxiliary output, in addition to a dual impedance microphone level output, allows you to drive any high impedance amplifier, mixer or tape recorder input requiring one volt or less. By controlling the maximum signal fed to a tape recorder, tape overload and distortion are eliminated. This output can never go above one volt.

HOW TO USE THE MODEL M62V LEVEL-LOC



WITH ONE MICROPHONE
Any low or high impedance dynamic or ribbon microphone may be plugged into the Cannon XL-3-13 type input receptacle without the need for an external transformer. Two outputs are then possible: a Mic Level High or Low Impedance and/or an Auxiliary High Level, High Impedance output to feed a signal to any high level, high impedance (10,000 ohms or more) input device. A self-contained 9-volt battery supplies the power.

WITH SEVERAL MICROPHONES AND A SHURE M68 MIXER
Several microphones may be plugged into a Shure M68 Series Mixer, and the Mixer plugged into the M62V Level-Loc. All inputs to the mixer will then be controlled by the Level-Loc. If only one microphone is to be controlled by the Level-Loc, it can be plugged into the Level-Loc, and the Level-Loc plugged into the M68 Mixer. Remaining microphones can then be plugged directly into the Mixer. In this configuration only the microphone plugged into the Level-Loc will be controlled. All other inputs to the mixer are unaffected. In either application, the Mixer can also power the Level-Loc, eliminating the need for a battery.

WITH TWO TAPE RECORDERS MAKING DUPLICATE TAPES
The M62V Level-Loc upgrades recording systems by limiting the input to the recorder to one volt maximum, thus preventing tape overloading and distortion. A high level, high impedance signal from the recorder playing the tape to be duplicated is fed into the M62V Level-Loc. The threshold, or level where Level-Loc action begins, is controlled by the input Level Control. The auxiliary high level, high impedance output of the Level-Loc can then be fed to the second recorder. Its output is a maximum of 1-volt; therefore the duplicate tape can be recorded without overload or distortion.

THE SUPER STARS

HAVE

SWITCHED



the 5th DIMENSION



When the fabulous 5th Dimension launches into "Aquarius/Let The Sunshine In," audiences are treated to the best of the "good vibes." But the "Fifth" will be the first to tell you that there's more to a live concert than meets the ear. They've told us that they've never heard so many sophisticated club-goers comment on the superior capabilities of their sound system. When the sound engineer and the entertainment director of one of New York's largest and newest hotels heard the 5th Dimension through a Shure Vocal Master in the hotel theatre-lounge, they said the unit was a "Revolutionary exhibition of sound"—and immediately requested a Vocal Master system for their super-size main ballroom!

CARPENTERS



When a group with a string of smash hits under its belt hits the tour trail, the problem they face is usually this common one: "How do we get recording studio control over the numbers we have to do live?" For Karen and Richard Carpenter and their group, Carpenters, duplicating the recorded sound of "Ticket To Ride," "Close To You" and "We've Only Just Begun" was easy. Their move? To the Shure Vocal Master sound system! The Vocal Master gives them 300 watts of peak penetrating power with a control console that's made to order for fine-tuning any sound. Now even the largest audiences hear everything Carpenters lay down—just like they hear it on records!



SERGIO MENDES and BRASIL '66

The magnificent Mendes sound bowls everybody over—music lovers and professional sound men alike. Case in point: when Sergio and his group used their Vocal Master in concert at a California college, the school's sound engineer and auditorium manager stated that the sound was superior to the school's built-in theatre system which cost many times as much—and now they are making the switch to the Shure Vocal Master, too!



the ASSOCIATION

Nothing is tougher than projecting the live sound of The Association with recording studio quality—especially in school gyms and auditoriums where so many musical happenings take place. Whether they're into a hard rock mind-blower, one of their own patented ballads, or exploring some totally new musical territory, The Association *sounds* like The Association wherever they perform—compliments of their ever-reliable Vocal Master!



the DELLS

The young group with aspirations for success on the Soul Music Scene should take a tip from the Dells, five guys who are already there: don't make a move without a sound system you know and trust! The Dells made their move to the Shure Vocal Master and today, *they* won't make a move without it! Why? Because the Dells have definite ideas about how they should sound—and the Vocal Master definitely gives them just what they're after!

A GUIDE TO THE VOCAL MASTER® . . . THE ONE THEY'RE ALL TALKING ABOUT

The Vocal Master is a complete vocal arrangement and projection system, featuring a Control Console (with high impedance microphone inputs) and two Speaker Columns, especially designed for Penetrating Power over the entire vocal range.

The Vocal Master delivers up to 300 watts of available vocal power and is conservatively rated at 100 watts RMS* continuous. The console has six input channels, each with its own individual volume, treble, bass, and reverb in-out (and auxiliary echo) controls.

Each input channel accepts a standard phone plug, and has a slide selector switch for either microphone or instrument for best sound amplification.

It accepts all high-quality, high impedance dynamic or ribbon microphones (a special plug-in accessory transformer adapts it for use with low impedance microphones).

It can also be used with electrified instruments, tape recorders, echo devices, remote reverb switches, and any of the Shure Microphone Mixers (when additional input channels are desired).

Master controls (which may be used without disturbing individual settings) include a master volume control, master reverb in-out switch, master reverb intensity control, and master reverb treble and bass controls. Four anti-feedback switches, covering critical segments of the complete audio range, give you additional sound control. The Vocal Master also has a thermal overload indicator light (special circuitry automatically shuts the unit off if unusually high circuit-damaging temperatures are reached). The entire control panel is illuminated for use on dimly lit stages.

The Control Console is short circuit-proof and open circuit-proof. If it is switched on without a speaker column connected, the console will not be damaged. This is exclusive with the Shure Vocal Master.

It comes complete with interconnecting cables. The Vocal Master is guaranteed for one year and is Underwriters' Laboratories, Inc., listed. A complete line of custom-designed accessories is available for the Vocal Master, including traveling covers, speaker and console stands, and plug-in transformers that adapt your Vocal Master for use with microphones of different impedances.

*To an eight-ohm load (2 VA300-S speaker columns)

VOCAL MASTER SPECIFICATIONS

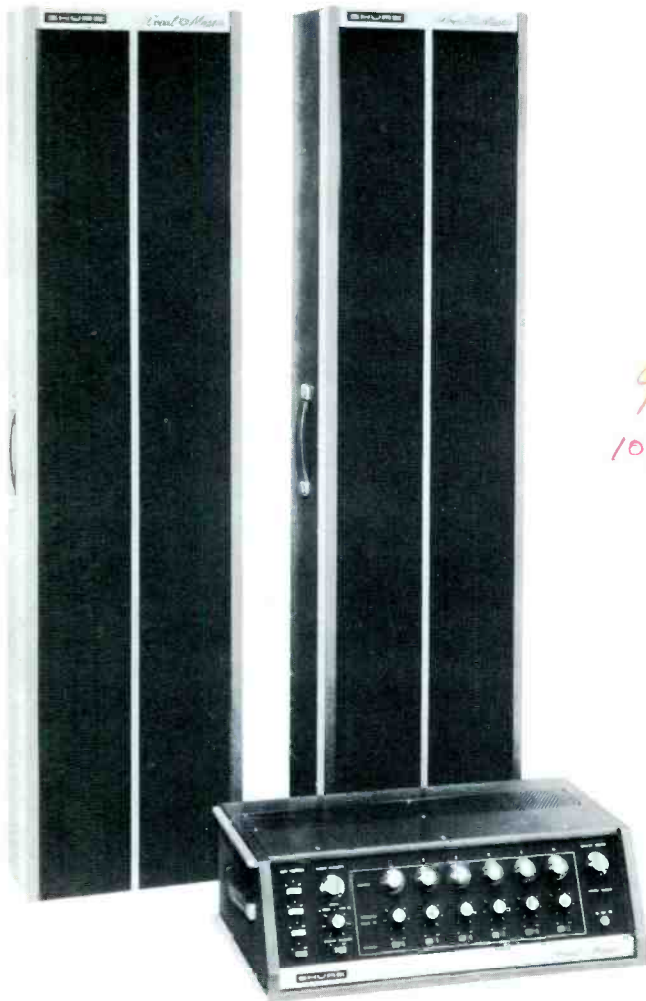
- Model VA300 Consists of a Model VA300-C Control Console (with high impedance microphone inputs) and two Model VA300-S Speaker columns.
- Model VA302 Consists of a Model VA302-C Control Console (with low impedance microphone inputs) and two Model VA300-S Speaker columns.
- Model VA302E Same as Model VA302 except for 120 or 240 V. AC, 50-60 Hz and listed by the C.S.A. testing laboratories as approved.

Both Models VA300 and VA302 are Underwriters' Laboratories, Inc., listed.

	VA300	VA302 & VA302E
Power Output	100 Watts R.M.S. Continuous* 300 Watts Peak Available Voice Power*	
Gain	60 db ("Mic" Input Level)* 49 db ("Inst" Input Level)*	80 db (Input Attenuator Out)* 65 db (Input Attenuator In)*
Frequency Response	Flat \pm 2 db from 40 Hz to 20,000 Hz	
Input Impedance	60,000 Ohms ("Mic" Level) 120,000 Ohms ("Inst" Level)	Suitable for microphones having impedance of 50 to 600 Ohms.
Power Consumption & Requirements	400 Watts maximum. 120 V. AC, 60 Hz (Model VA302E — 120 or 240 V. AC, 50-60 Hz)	
Console Weight	38 lbs.	41 lbs.
Console Dimensions	8 $\frac{3}{8}$ " H. x 25" W. x 14 $\frac{1}{4}$ " D.	
Speaker** Column Impedance	16 Ohms	
Speaker** Column Weight & Dimensions	70 lbs. (including cable); 62 $\frac{3}{4}$ " H. x 15 $\frac{3}{4}$ " W. x 8 $\frac{3}{4}$ " D.	

*To an eight-ohm load (2 VA300-S Speaker columns)

**VA300-S Speaker



**POWER MASTER®
BOOSTER AMPLIFIER
MODELS PM300 AND PM300E**

Designed especially for use in conjunction with the Vocal Master Systems, the Power Master drives two additional VA300-S speakers or four VA301-S monitor speakers. It adds 100 watts RMS of fully useable, extra power to either the VA300 or VA302 Vocal Master Systems. Model PM300 — 120V. AC, 60 Hz; Model PM300E — 120 or 240V. AC, 50-60 Hz.



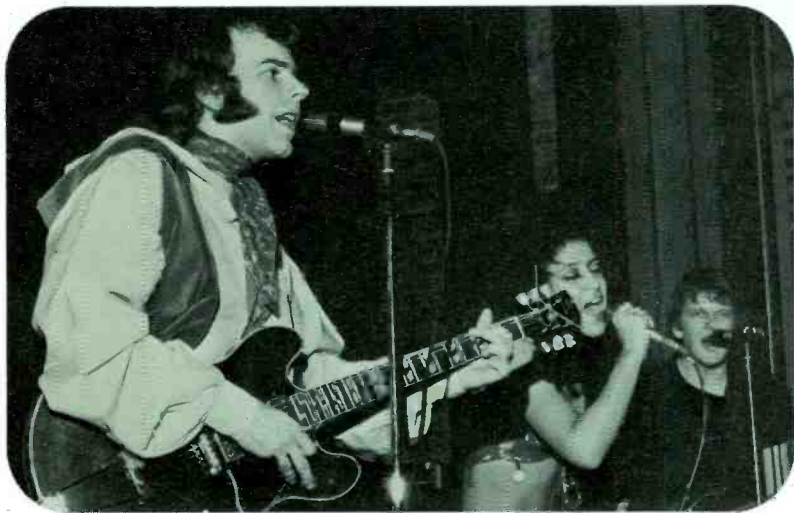
**MONITOR SPEAKER
MODEL VA301-S**

Developed especially for feedback-free monitoring applications right on stage, the VA301-S is directional, and features a built-in volume control that gives the performing group tight control over its output—and tight control over feedback.



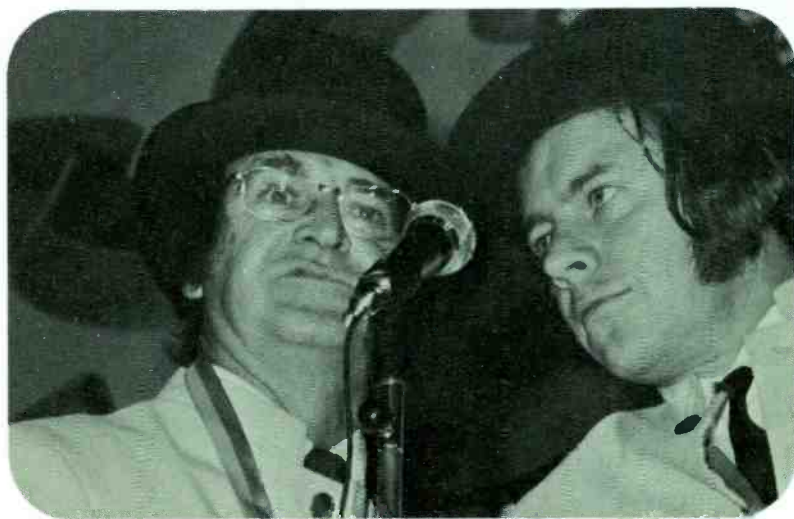
**PROFESSIONAL
ENTERTAINER
MICROPHONES**

Responsive, reliable Shure Professional Entertainer Microphones (preferred for their superb sound qualities by professional entertainers throughout the world) team up with your Vocal Master to give you flawless sound wherever you appear. Choose from the world-famous Unidyne® Series or the great-looking, great-sounding "ball-type" Shure Unisphere® Series.



the SAVAGE ROSE

Mystical. Occult. Ethereal. They all describe the hauntingly beautiful sound of The Savage Rose, one of Denmark's most important contributions to the contemporary music scene. The members' classical music backgrounds explain why audiences across Europe and the U.S. sat mesmerized through hundreds of hypnotic Rose performances on their recent tour. But the success of any Savage Rose performance depends on the ability of their sound gear to handle and transmit their sound with precisely the tonal color they're after. That's why The Savage Rose travels everywhere with their own Shure Vocal Master sound system!



HAZY OSTERWALD

The antics of Hazy Osterwald—singer, musician, all-around entertainer and Swiss night club impresario—have been a familiar treat to European club-goers and nightlife buffs for many years. When Hazy blows on stage and gets ready for one of his non-stop performances, his sound system better be ready too. His personal sound system is the Shure Vocal Master—and it was *built* ready! The Vocal Master Hazy carries offers him an infinite variety of tonal shadings—with the Penetrating Power to get his sound out to everyone in the room . . . and audiences across Europe are treated to one of the most impressive one-man shows ever!



JOHNNY MATHIS

The incomparable Johnny Mathis blew into the pop music scene like a breath of fresh air more than a decade ago. Then, his sound established him as one of only a handful of superstars. And today, his velvety smooth style has endeared him to more fans than ever. But one thing has changed: Johnny Mathis has taken to a new sound system made especially for vocals, and he says the system meets all of his in-concert demands with plenty left over. That system is the Shure Vocal Master!

TO THE FABULOUS



SHURE

VOCAL MASTER®

VOCAL ARRANGEMENT & PROJECTION SYSTEM

never before . . .
such penetrating power!

never before . . .
such control of vocal effects!

never before . . .
such control of feedback!

ESPECIALLY DEVELOPED FOR VOCALISTS

Today's audiences want live performances that sound as good as recordings. They want to hear the words. They are becoming increasingly intolerant of blurred, distorted vocals and irritating feedback. The wave of the future is the recognizable, intelligible lyric. Up to now, this has been virtually impossible in live performance because, outside of the recording studio, no equipment existed to effectively balance the vocalist against powerful hyper-amplified electrified instruments. Now Shure

has developed the Vocal Master system specifically to enable the vocalist to put himself into perspective with the rest of his group. Drawing upon over forty years' experience in the design of world-famous Shure microphones (the vocalist's real link with his audience), Shure has developed an unusually rugged and reliable sound system that answers *all* of the vocalist's amplification, projection, arrangement, balance, and anti-feedback control requirements.

BE HEARD — OVER THE INSTRUMENTS

Except at very low levels, running your voice through an electrified instrument's amplifier and speaker invariably destroys every shred of vocal character and intelligibility. The Vocal Master is designed to maximize the sound

specifically within the frequency and dynamic ranges of the singing voice. You can hold your own against the instruments without straining or shouting. The audience will hear the real you, and understand every word.

UNLIMITED SOUNDS! DIFFERENT SOUNDS!

Now you're not chained to the limitations of a musical instrument sound system, an inadequate built-in "house" system, or a P.A. system designed for speaking voices. You can compensate for different room acoustics, different instrumental backings, different balances

when group singing. You can invent new sounds. You give yourself the same degree of control and security as when you're in the hands of a recording studio sound engineer who balances and mixes you into the total sound from your own separate tape track.

GREATEST FEEDBACK CONTROL — EVER

The four Anti-Feedback Switches can help you overcome the number one enemy of a good performance: Feedback. This is an especially vexing problem when you are working close to the loudspeakers and the

loudness of the music is high. These switches operate four special filters which help you eliminate feedback problems.

PENETRATING POWER IS THE KEY TO VOCAL PROJECTION

The Vocal Master is superior to conventional sound systems in its ability to get the sound to the back of big rooms without overwhelming the audience up front. We call this "PENETRATING POWER." It is the result of a perfect match between the human voice range, the Vocal Master Control Console, and its highly directional speaker columns. Extensive laboratory and field tests were carried out to measure the penetrating power of the Shure Vocal Master, as compared to conventional sound systems. The measurements were made with

equal power applied to both speaker systems. Sound pressure (or loudness, if you will) was then measured at specified distances from the loudspeakers. The ordinary systems dropped off sharply, while the Vocal Master maintained greater sound pressure (loudness) over the entire distance — and at 200 feet was nearly twice as loud as ordinary systems. *Conventional sound systems cannot approach the Vocal Master's ability to project vocals without "clipping" or deterioration of loudness.*

NOW!

*two new Vocal Master systems
with modular speakers
...for problem rooms
and problem dates*



Models VA303 & VA304 Vocal Master Sound Systems

The VA303 and VA304 Series Vocal Master systems are built around the famous Vocal Master Consoles, with all their amplification power, sound purity and vocal arrangement and feedback control. But instead of two standard VA300-S Speaker Columns, these new systems come with four "half-size," volume-controlled VA301-S Speaker Columns to give the increased flexibility of a modular speaker system without a significant reduction in Penetrating Power!

Use the VA303 or 304 Series sound systems to get the sound coverage you need in these difficult situations:

- Irregularly shaped rooms in which speaker placement of conventional columns provide inadequate coverage.
- Acoustically difficult rooms in which sound output of each speaker must be tightly controlled through a built-in speaker volume control to avoid serious feedback problems.
- Small, wide or shallow rooms in which the concentrated Penetrating Power of the standard Vocal Master Speaker Columns is not required.
- Handling and/or transportation situations which require smaller, lighter, easier-to-handle speaker columns.
- Installations in which a smaller speaker system is needed for wall-mounting or concealment.

ABOUT THE VA301-S SPEAKER COLUMN

Each VA301-S Speaker Column features directional output characteristics similar to the VA300-S Vocal-Master Speaker Columns, and uses the same high quality, super-reliable speakers (two 8" and one 10" cone for a total cone area of 179.07 inches). They also include a built-in volume control for tight control over sound output in a particular coverage area, and are built with the same exceptional ruggedness as the standard speaker columns to shrug off the abuses of repeated packing and rough handling.

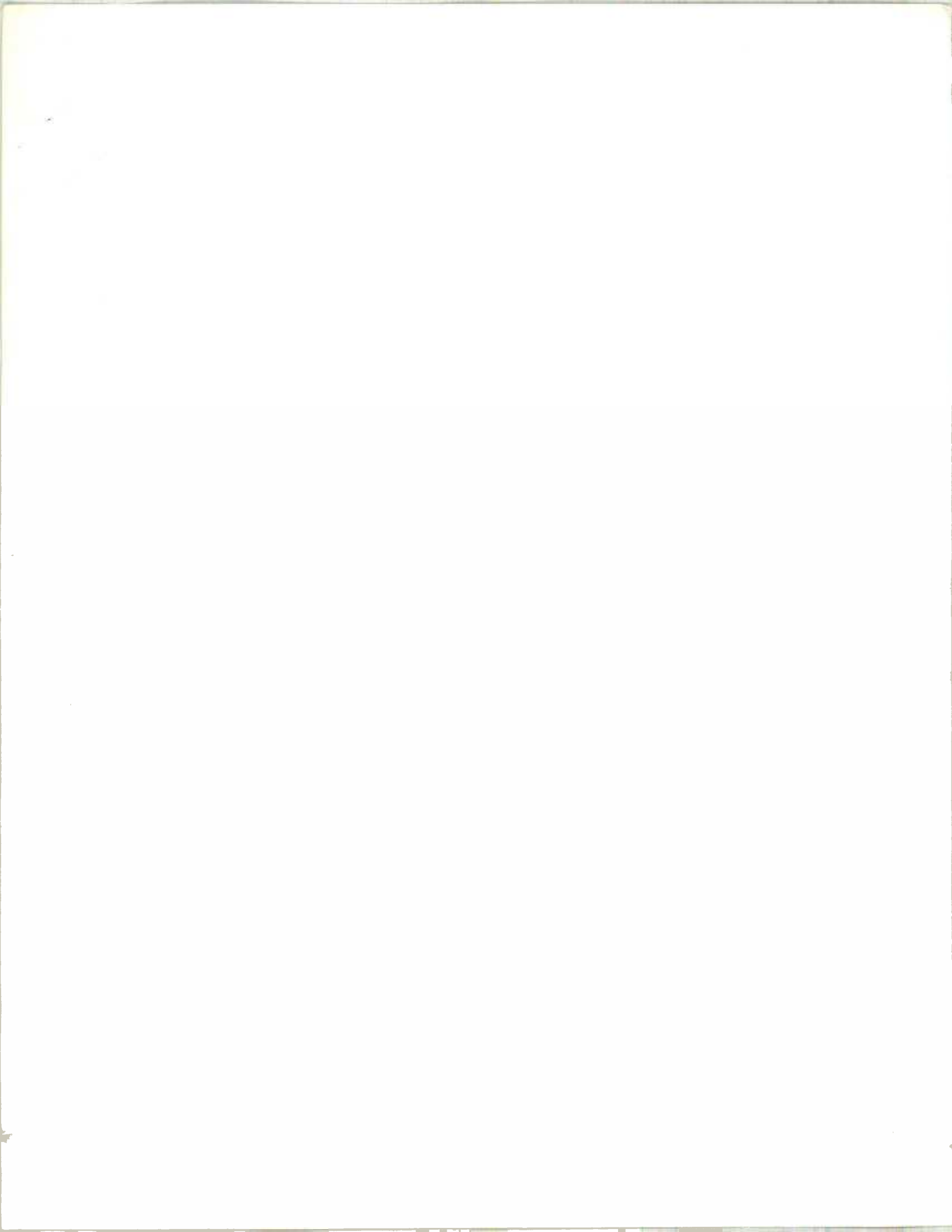
MODEL VA303 SYSTEM—Model VA300-C Vocal Master Console with high impedance microphone inputs, with four Model VA301-S Speaker Columns. 120 Volts A.C., 60 Hz. Underwriters' Laboratories, Inc., listed, and also listed by the C.S.A. Testing Laboratories as approved.

MODEL VA304 SYSTEM—Model VA302-C Control Console (with low impedance microphone inputs and an illuminated V.U. meter), with four Model VA301-S Speaker Columns. 120 Volts, 60 Hz. Underwriters' Laboratories, Inc., listed, and also listed by the C.S.A. Testing Laboratories as approved.

MODEL VA304-E SYSTEM—Same as Model VA304 above, but for 120 or 240 Volts, A.C., 50-60 Hz.

WRITE FOR COMPLETE SPECIFICATIONS

Shure Brothers Inc.
222 Hartrey Avenue, Evanston, Illinois 60204





General: The Shure Model M63 Audio Master is a unit designed to give maximum flexibility in the control of volume, bass response, treble response, and high and low frequency roll-off. The Model M63 works ideally as a Master Control Center when used in conjunction with the Shure Model M68 Series of Microphone Mixers.

The M63 provides a means to equalize sound systems for correction of room acoustics, to reduce feedback, to provide special sound effects, to reduce stand and stage noise and for tape recording.

The Audio Master features:

- Five types of outputs
 - 600 ohms balanced line level
 - High impedance, high level
 - High impedance microphone level
 - Low impedance microphone level, balanced
 - Headphone jack for monitoring
- Inputs for two driving sources
- A VU meter to monitor audio level
- Continuously variable high pass and low pass 6 db per octave filters
- Bass and treble tone controls

Controls, Connections and Operation INPUTS

The two high impedance inputs (phono jacks) marked HIGH LEVEL INPUTS are designed to accept high level signals from a microphone mixer (such as the Shure M68, M68RM, etc.), tape recorder, AM-FM tuner, or output from Shure Model A68P Phonograph Pre-amplifier (accessory).

To use with the Shure M68 Microphone Mixer series, connect the AUX. HIGH LEVEL OUTPUT on the mixer to the input of the M63 with a shielded cable having a male phono plug on each end (such as the Shure A68SC). Set the MASTER volume control on the mixer to approximately 6 and use the VOLUME control on the M63 to adjust the overall level.

Although not specifically designed for use with the Shure M67, it may be used in conjunction with the M67 in the following manner: connect a shielded single conductor cable with a 1/4" phono plug on one end and a phono plug on the other from the headphone output of the M67 to the M63 input. To obtain good volume control action from M63, install a 180-ohm resistor from tip to sleeve in the phono plug and use the M63 volume control to adjust output to desired level.

OUTPUTS

Microphone

The receptacle marked MICROPHONE LEVEL OUTPUT is a dual impedance output selected by the switch above the receptacle. This output is designed to work into a balanced 25 to 250 ohm input, or, with the MICROPHONE IMPEDANCE selector switch in the Hi position, into an unbalanced high impedance microphone input on an amplifier or tape recorder. The receptacle is a male three-pin Cannon XL-3-14 type connector (uses Cannon XL-3-11 mate, Shure Part No. 95A38, or Cannon XLR-3-11C mate, Shure Part No. 95A176). See Figure A for output receptacle connections.

Line

The line output (binding posts) is on the rear panel and is designated 600 OHM BALANCED LINE OUTPUT. These terminals are numbered "3" and "2" and are in phase with correspondingly numbered pins in the microphone output connector. The adjacent ground terminal corresponds to pin 1. While the line output may be used to drive lines of various impedances (150 ohms or greater), the VU meter is calibrated for use with a 600 ohm terminated line.

Auxiliary

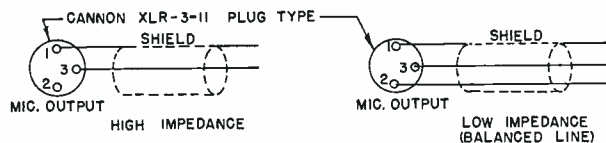
The phono jack marked AUXILIARY HI IMP OUTPUT is a high-impedance, high-level output designed primarily to feed a power amplifier requiring .5 to 2 volts, or the auxiliary or tuner input of an amplifier or tape recorder.

NOTE: The microphone, line and auxiliary outputs may be used simultaneously if desired, to provide an isolated PA feed or to drive different pieces of equipment.

Headphone output

The headphone output on the rear panel is designated HEADPHONES. A two-circuit phone jack is used to provide a choice of level for different headphone impedances. Normally, a single-circuit plug should be used. If inserted only partially (to the first detent), the available voltage is approximately 0.25 volts; the second position will provide approximately 0.50 volts across 1000-ohm headphones at +4 dbm (0 VU) line output. Crystal headphones may be used, but the level will be the same in either jack position.

If stereo phones are used, the two-circuit plug may be inserted completely (to second position) and output will appear in both phones.



MICROPHONE OUTPUT PLUG CONNECTION.
FIGURE A

SPECIFICATIONS

Specifications at 120 volts a.c., 60 Hz Line Voltage.

Frequency Response: ± 2 db from 20 to 20,000 Hz
(all controls flat)

Voltage Gain: (outputs terminated as noted, others open; volume and level control max.)

Line Output: 38.5 db (600 ohm load)

Aux. Output: 39.0 db (47 K ohm load)

Hi-Imp. Mic. Output: -1.0 db (33 K ohm load)

Lo-Imp. Mic. Output: -21.0 db (150 ohm load)

Tone Controls: Bass: $+14$, -19 db at 100 Hz Typ.
Treble: $+16$, -19 db at 10 K Hz Typ.

Filters: Hi-Cut and Lo-Cut 6 db per octave, continuously variable -3 db point.

Noise Output (Line with 600 ohm load):

Volume Control min.:

74 db below $+8$ dbm, 20 Hz -20 K Hz

81 db below $+8$ dbm, 300 Hz -20 K Hz

Volume Control max., 4.7 K ohm source:

68 db below $+8$ dbm, 20 Hz -20 K Hz

71 db below $+8$ dbm, 300 Hz -20 K Hz

Distortion: Under 1% T.H.D. at $+8$ dbm output

Clipping Level: $+18$ dbm (600 ohm load)

VU Meter: Calibrated for 600 ohm line termination.

○ VU = $+8$ dbm ± 1 db fixed; or

○ VU = $+4$ dbm; output may be attenuated by 20 db.

Inputs: Two, mixing. Impedance 50 K ohms nominal. No amplification precedes VOLUME control, so that high-level input signals cannot cause overloading.

Outputs:

600 ohm line: Balanced and floating, 150 ohms minimum load, 125 ohms actual internal impedance. Will operate with up to 100 ma. D.C. through transformer for driving telephone lines.

Auxiliary Hi-Imp.: Unbalanced, 4.7 K ohms internal impedance. For driving high-level, high impedance inputs.

Microphone Hi-Imp.: Unbalanced, 1 K ohm internal impedance. For driving medium-level high impedance microphone inputs.

Microphone Lo-Imp.: Balanced, 0.5 ohm internal impedance. For driving low-level 25 to 250 ohm microphone inputs.

Headphone: Two-level, for 600 to 2,000 ohm headphones. Crystal headphones may be used.

Operating Voltage:

AC Operation 120 volts $\pm 10\%$, 50 to 60 Hz.

DC Operation: 30 volts, 20 ma. max. at $+8$ dbm output.

UL and CSA Approval:

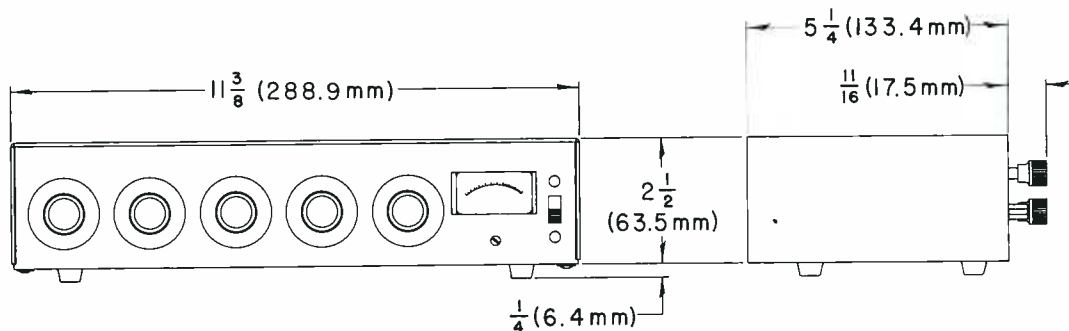
The M63 is Underwriter's Laboratories and Canadian Standards Association approved for use in commercial applications.

Overall Dimensions: See Figure "B."

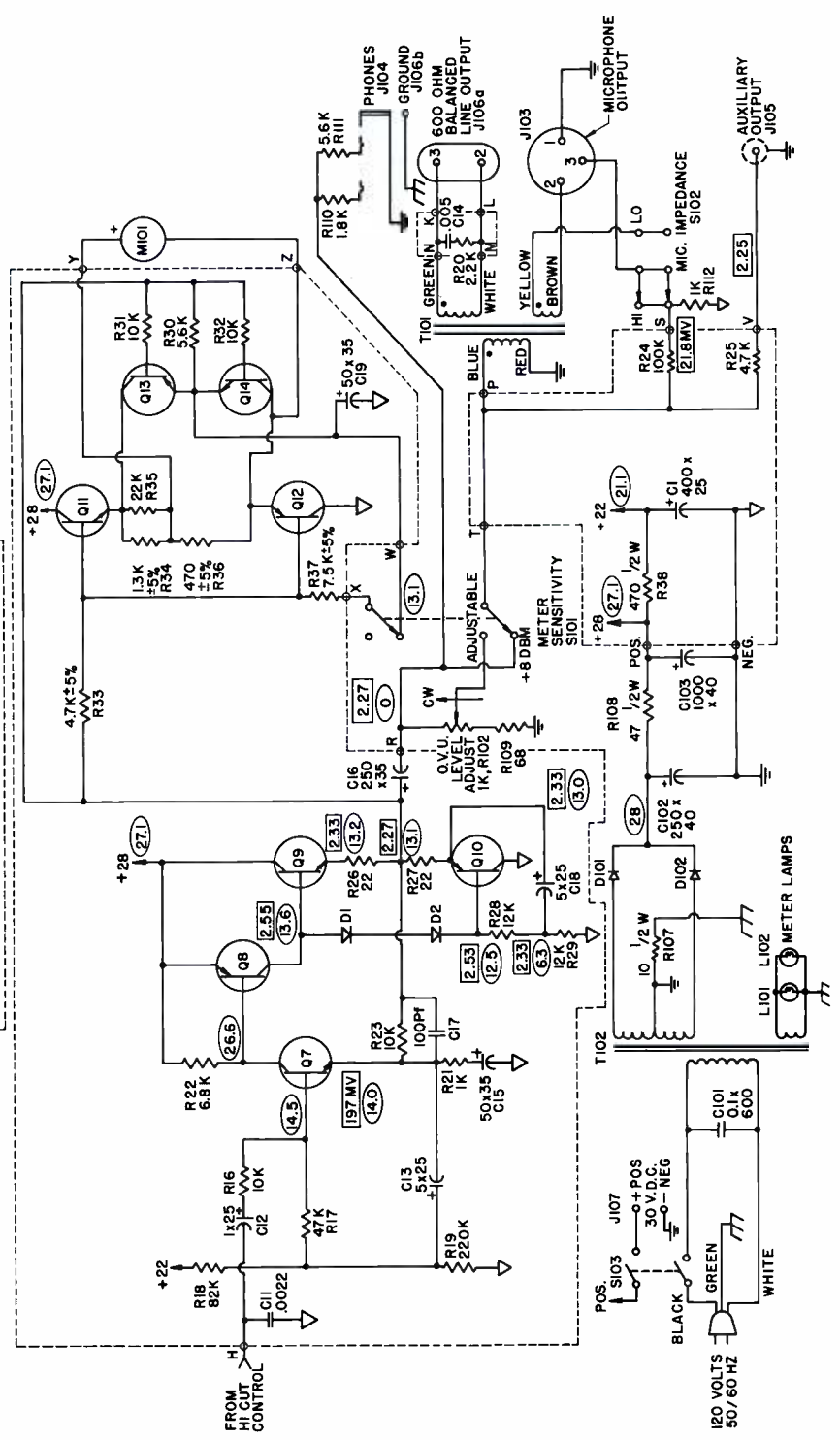
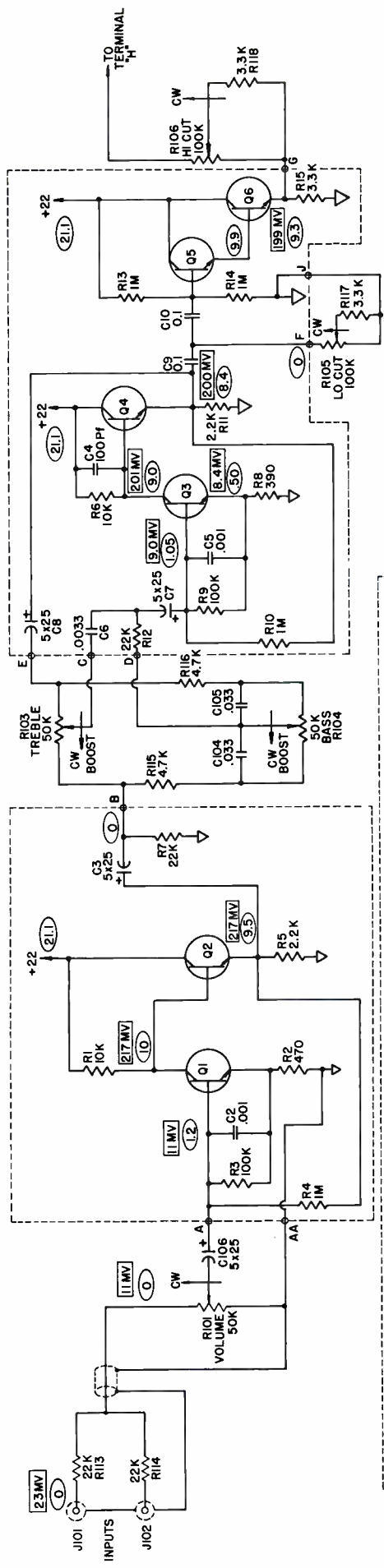
Weight: 3 lbs. 2 ozs.

Operating Temperature: 20°F to 135°F.

Guarantee: The Shure Audio Master is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential that you carefully repack the unit and return it to the factory or, if outside of the United States, to your dealer or authorized Shure Service Center for repair. Our guarantee is voided if the basic assembly has been opened or subjected to unreasonably rough handling.



OVERALL DIMENSIONS
FIGURE B



- NOTES:
1. ALL CAPACITORS IN M64 AND 100 VOLTS OR MORE UNLESS OTHERWISE SHOWN. ELECTROLYTIC CAPACITORS SHOWN IN M64 x VOLTS.
 2. ALL RESISTORS 10%, 1/4 WATT UNLESS OTHERWISE SHOWN.
 3. THE FOLLOWING SYMBOLS DENOTE:
 - CHASSIS GROUND
 - GROUND
 - WIRING BOARD
 - P.C. BOARD
 - COMMON GROUND BUSES
 4. DENOTES A.C. VOLTAGES ALL VOLTAGES MEASURED WITH A.C. LINE = 120V, VOLUME CONTROL MAX. TONE CONTROLS FLAT, INPUT SUCH THAT UNIT IS DELIVERING 8DBM INTO 600 OHM LOAD AT 1KHZ. D.C. VOLTAGES MEASURED WITH 20K OHM / VOLT VOM. A.C. VOLTAGES MEASURED WITH MEGOHM A.C. V.M. VALUES ARE TYPICAL AND MAY VARY ±15%.
 5. ALL COMPONENTS AND CONNECTIONS ENCLOSED BY DASHED LINES ARE PARTS OF PRINTED CIRCUIT BOARD ASSEMBLY.

MODEL M63 AUDIO MASTER CIRCUIT DIAGRAM

VU METER

When the METER SENSITIVITY switch (on rear panel) is on the \bigcirc VU=8 dbm FIXED position, an output of 8 dbm on the 600 ohm line output (loaded with 600 ohms), reads \bigcirc VU on the meter. When the METER SENSITIVITY switch is in the \bigcirc VU VARIABLE position and the \bigcirc VU LEVEL ADJUST control is maximum (fully clockwise), an output of 4 dbm on the 600 ohm line output (loaded with 600 ohms) reads \bigcirc VU on the meter; at minimum position of the \bigcirc VU LEVEL ADJUST, fully counter clockwise, an output of approximately -20 dbm on the 600 ohm line output (terminated in 600 ohms) reads \bigcirc VU on the meter.

The variable position on the meter sensitivity switch allows the VU meter to read \bigcirc VU for outputs ranging from -20 dbm to +4 dbm (600 ohm line terminated), by adjusting the \bigcirc VU level adjust (screw driver adjustment on rear panel). To calibrate the VU meter properly in applications where a level other than the fixed level is needed, set the VOLUME control on the M63 until the meter deflects to the \bigcirc VU position on the *loudest* peaks, then adjust the \bigcirc VU LEVEL ADJUST control for the desired output signal level. The LEVEL ADJUST control attenuates all outputs simultaneously (except HEADPHONES), while the internal circuitry operates at the proper level to insure good signal-to-noise ratio.

ACCESSORY

30 volt D.C.

The rear panel jacks (located near power cord) provide 30 volt D.C. for accessories such as the Model A68P Phono Cartridge Preamplifier. These jacks also are used as a power input when using the A67B Battery Power Supply.

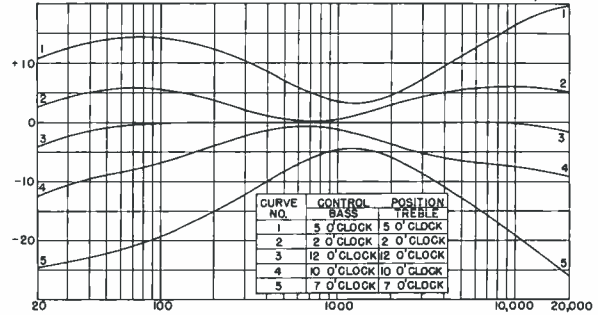
CONTROLS

Volume Control

Front panel control designated VOLUME controls overall output of both high level inputs and functions as a master volume control. When the input device has a volume control of its own, the best signal-to-noise ratio is obtained by turning up that control as high as possible without encountering distortion, keeping the M63 VOLUME control low.

Tone Controls

Front panel controls designated BASS and TREBLE are standard function tone controls having a response characteristic as shown in Figure C.

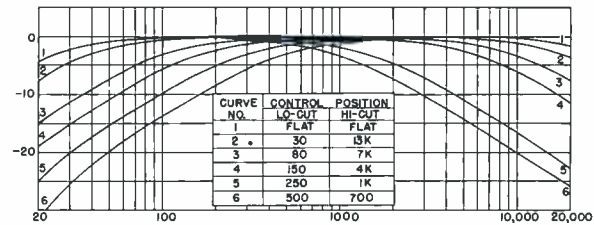


FREQUENCY IN HERTZ
FREQUENCY RESPONSE IN db—TONE CONTROL CURVES
LO-CUT AND HI-CUT SET ON FLAT POSITION..

FIGURE C

Filter Controls

Front panel controls designated LO CUT (Hz) and HI CUT (Hz) are continuously variable low pass and high pass filters (6 db per octave) with a typical response function as shown in Figure D.

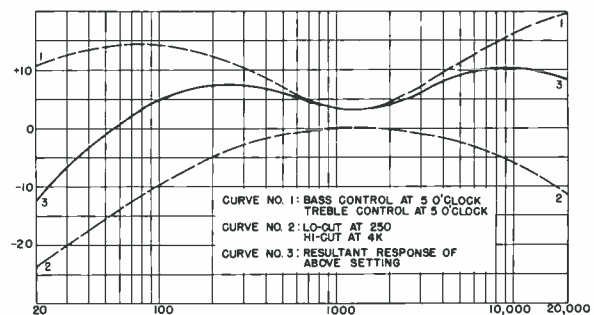


FREQUENCY IN HERTZ
FREQUENCY RESPONSE IN db—LO-CUT AND HI-CUT
CONTROL CURVES BASS AND TREBLE CONTROLS SET AT
12 O'CLOCK POSITION.

FIGURE D

Combining Tone and Filter Functions

The BASS and TREBLE control response characteristic and the LO CUT and HI CUT response characteristic may be combined to obtain a variety of overall curves, sometimes needed for special effects involving room acoustics, equipment equalization, etc. Figure E shows an example of combining these functions.



FREQUENCY IN HERTZ
FREQUENCY RESPONSE IN db—COMBINING TONE
CONTROL AND FILTER CURVES.

FIGURE E

In this case, the upper dashed lines show BASS and TREBLE control position; the lower dashed lines show HI CUT and LO CUT control settings. The solid curve is the combined resultant response of all settings. The resultant response is obtained by subtracting the lower curve (in db) from the upper set of curves. For instance, at 100 Hz the lower curve is 9 db below the 0 Reference line; subtract 9 db from the upper curve at 100 Hz (lowering it to 5 db **above** the 0 Reference).

The resultant curve shown might be typical of a sound system where low frequency noise was a problem (stage noise, etc.) and the room was relatively dead (heavily draped and carpeted). The low frequency roll off would keep objectionable thumping noises to a minimum, while the slight increase in response at 200 Hz will keep the system from sounding tinny. The rise in the high frequencies will add some presence so voices or music will have added clarity.

This is only one example of the response curves available with the M63. An individual calculation can be done in this manner for the other resultant curves.

OPTIONAL ACCESSORIES

A68P PHONO-PREAMPLIFIER

The A68P is a monaural pre-amp which may be used to convert an input of the M63 to an equalized phono input. It provides both equalization and preamplification, and is powered from the 30-volt DC power take-off provision.

A68S STACKING KIT

This accessory consists of brackets for vertical stacking of an M68 Series Mixer and an M63 (or any combination of Shure Mixers or Controllers). An interconnecting cable for combining units is included.

A68SC INTERCONNECTING CABLE

This cable is a 12" long single conductor shielded cable with a phono plug on each end for interconnecting an M63 and an M68 Series Mixer.

A68R RACK PANEL KIT

The kit consists of a 19"x3 1/2" precut rack panel and necessary hardware for rack mounting of the M63 with its cover in place.

A68L LOCKING PANEL

This panel fits within the front hood of the M63 cover and locks in place to prevent tampering with the front panel controls.

A67H HANDLE/TILT STAND

The A67H provides a convenient means of tilting the M63 to permit better panel visibility and greater ease of operation in some conditions. In the locked (tilt) position, the front panel will be elevated about 20°. In the free position, the A67H serves as a rugged carrying handle.

A67B BATTERY POWER SUPPLY

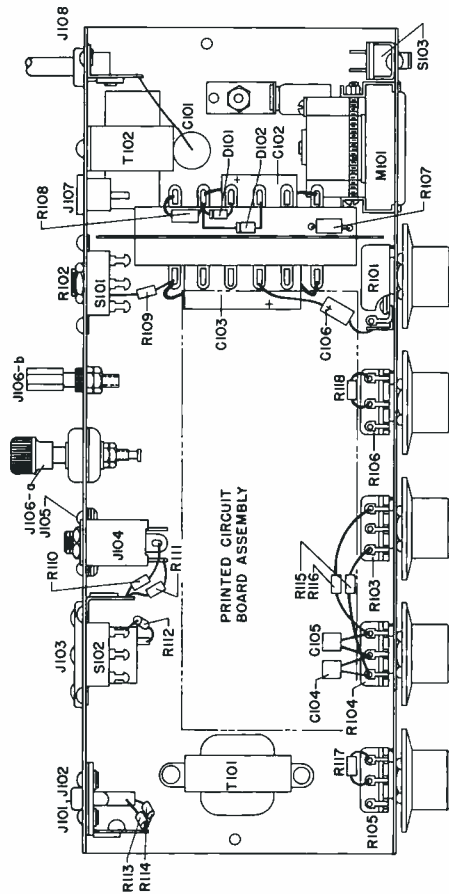
The A67B is designed to power the M63 either as the sole power source or as a standby safety during A.C. operation, providing automatic noiseless switchover in case of A.C. failure. Battery life is approximately 10 hours.

AC60 ATTACHÉ CARRYING CASE

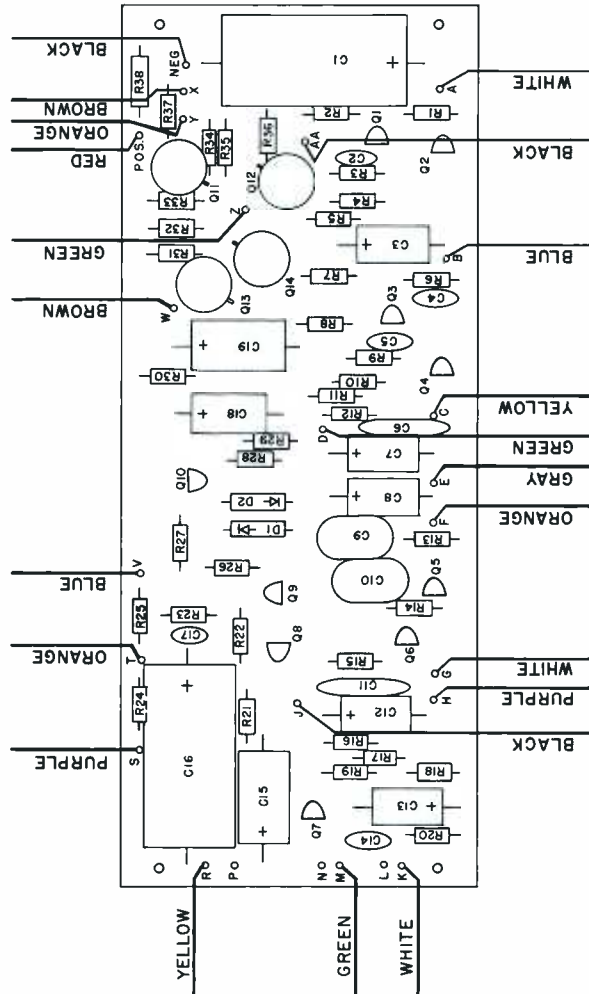
This case is compartmentalized and foam lined for an M63 and accessories.

LAMP REPLACEMENT

1. DISCONNECT A.C. CORD.
2. REMOVE 4 PHILLIPS HEAD SCREWS RETAINING COVER - ONE ON FRONT, ONE ON BACK, TWO ON BOTTOM.
3. REMOVE COVER.
4. REMOVE SCREW AND NUT BETWEEN VU METER BRACKETS.
5. GENTLY PUSH VU METER FROM FRONT AND LIFT UP CLEAR OF CHASSIS.
6. BRACKETS MAY FALL OUT. NOTE THEIR POSITION IN CUT OUT. BRACKETS ARE INTERCHANGEABLE.
7. REMOVE SCREWS RETAINING LAMP SOCKETS FROM UNDERSIDE OF CHASSIS. SOCKETS MAY NOW BE PUSHED CLEAR OF CHASSIS AND THE #47 LAMPS REPLACED. IT IS ADVISABLE TO REPLACE BOTH LAMPS WHEN 1 BURNS OUT.
8. REPLACE LAMP SOCKET AND LOOSELY FASTEN SCREWS.
9. PLACE 2 VU METER BRACKETS IN CUT-OUT, PUSHING THEM FIRMLY AGAINST SIDES OF CUT OUT.
10. SLIDE VU METER INTO CUTOUT. SHOULD LAMPS BE IN THE WAY, MOVE THEM. VU METER SHOULD FIT EASILY INTO CUT-OUT IF POSITIONED PROPERLY. DO NOT FORCE.
11. HOLDING VU METER FIRMLY AGAINST BACK SIDE OF CHASSIS FRONT PANEL, SQUEEZE BRACKETS AGAINST METER BODY. INSERT SCREW THROUGH HOLES IN BRACKETS AND SECURE WITH NUT. NUT GOES ON RIGHT SIDE OF METER. DO NOT OVER TIGHTEN. (SEE DIAGRAM FOR REPLACEMENT.)
12. CHECK POSITIONING OF LAMPS, AND TIGHTEN THEIR TWO MOUNTING SCREWS.
13. REPLACE COVER.



PARTS PLACEMENT



PRINTED CIRCUIT BOARD ASSEMBLY

ITEM	SHURE PART NO.	DESCRIPTION
D1, D2, D101, D102	86A404	DIODE, SILICON, IN4002 OR EQUIVALENT
L101, L102	95A466	LAMP, PILOT #47, 6.3 V.A.C.
M101	95A499	METER, 200 uA, D.C. F.S.
Q1-Q6*	86A327	NPN TRANSISTOR, SILICON SELECTED HIGH GAIN, LOW NOISE, SIMILAR TO MOTOROLA MPS 6521 OR T.I. 2N3711.
Q7	86A336	NPN TRANSISTOR, SILICON, T.I. TIS97
Q10** Q8	86A335	PNP TRANSISTOR, SILICON, T.I. TIS93
Q9**	86A334	NPN TRANSISTOR, SILICON, T.I. TIS92
Q11, Q14	86A343	NPN TRANSISTOR, GERMANIUM TYPE 2N1605A
Q12, Q13	86A342	PNP TRANSISTOR, GERMANIUM TYPE 2N4044
R101	46A021	POTENTIOMETER, 50K, AUDIO TAPER
R102	46A022	POTENTIOMETER, 1K, LINEAR TAPER
R103, R104	46A023	POTENTIOMETER, 50K, LINEAR TAPER
R105, R106	46A024	POTENTIOMETER, 100K, REVERSE AUDIO TAPER
S101, S102	55A54	SWITCH, SLIDE, D.P.D.T.
S103	55A67	SWITCH, SLIDE, D.P.D.T. 3 AMP.
T101	51A218	TRANSFORMER, OUTPUT
T102	51A219	TRANSFORMER, POWER

*TO INSURE LOW NOISE, FIGURE PURCHASE REPLACEMENTS FOR Q1-Q6 FROM SHURE BROTHERS, INCORPORATED.

**FOR REPLACEMENT, PURCHASE Q9 AND Q10 AS MATCHED PAIR TIS92M-TIS93M.

The SE20 is a two-channel solid state equalized preamplifier/line amplifier designed to provide the very highest quality disc reproduction for broadcast and recording studio applications. While primarily designed for stereo use, it may be very effectively utilized for two separate monaural channels.

Features include:

- Precise RIAA/NAB equalization.
- Completely solid state.
- High impedance inputs properly match almost all magnetic disc reproducers.
- Individual high and low frequency equalization trimmers on each channel.
- Individual channel level controls.
- Extremely low noise and RF susceptibility.
- Full line output capability.

SPECIFICATIONS

Frequency Response: RIAA/NAB disc playback characteristic within ± 1 db from 30 to 15,000 Hz. (NAB 1964 Disc Standard, recommended low frequency roll-off -6 db/octave, 3 db down at 20 Hz.)

Gain: 54 db, adjustable.

Distortion: Less than 0.5% THD at +20 dbm from 20 to 20,000 Hz.

Channel Separation: 10,000 Hz. 50 db minimum
1,000 Hz. 50 db minimum
100 Hz. 42 db minimum

Hum and Noise: At least 60 db below +6 dbm output (gain set for +6 dbm out with 5 mv in -32 to 18,000 Hz. band pass filter).

Input Impedance: 47,000 ohms.

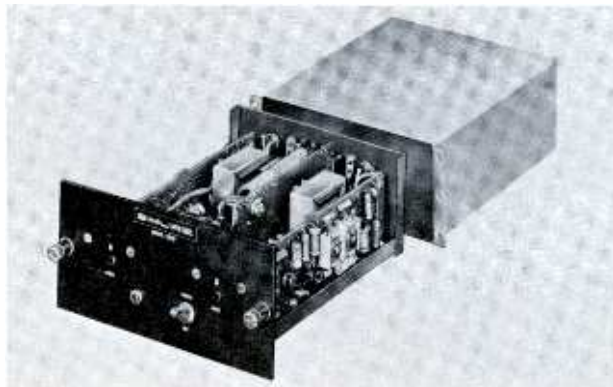


FIGURE A
MODEL SE20 WITH COVER



Output Impedance: For 600 or 150 ohm balanced line (Approximately 80 ohms actual)

Operating Temperature: Within 0.5 db of all specifications at 20 to 135°F.

Overall Dimensions: See Figure B.

Weight: 7 pounds, 10 ounces.

Operating Voltage: 120 volts $\pm 10\%$ at 50/60 Hz.
220 volts $\pm 10\%$ at 50/60 Hz. (See section on 220 volt operation)

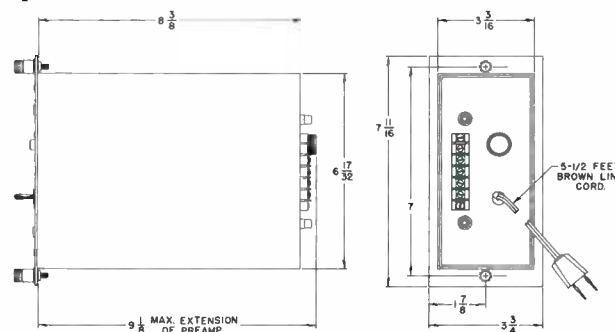


FIGURE B
OVERALL DIMENSIONS

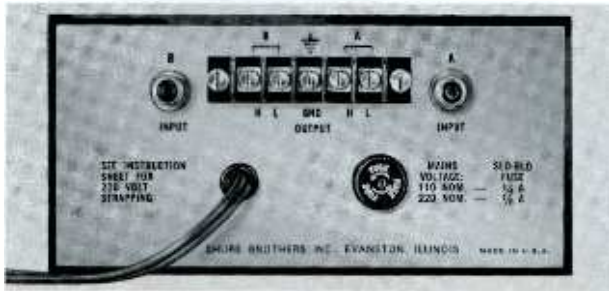
CONTROLS, CONNECTIONS, AND OPERATION

Inputs: Input jacks (phono type) are located on the rear panel and designated "A" and "B." Channel level controls and output terminals are correspondingly lettered. Any magnetic pickup designed for operation with a 47,000 ohm or higher input termination may be directly connected to these jacks.

The SE20 may be used either as a stereo preamplifier or as two separate monaural channels. If a stereo cartridge is to be used (with its channels paralleled) as a

monaural source to one channel of the SE20, the SE20 input should be shunted with a 47,000 ohm resistor or the high frequency trimmer should be readjusted for proper high frequency equalization.

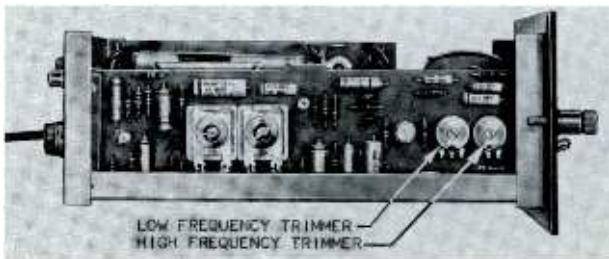
Outputs: Output terminals appear on the rear panel as shown in Figure C. Outputs are balanced and designed to feed a 150 ohm or 600 ohm line.



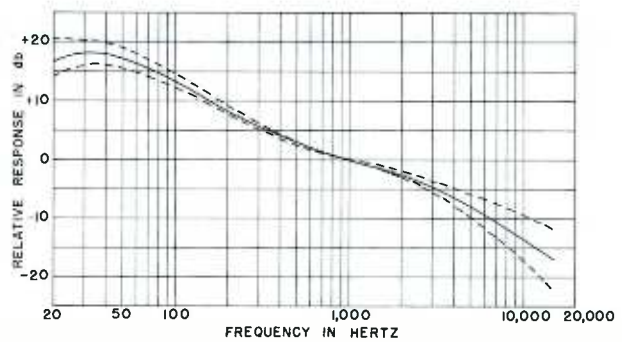
REAR PANEL
FIGURE C

Channel Level Controls: These controls are located on the front panel designated as "Channel A Level" and "Channel B Level." They are used to adjust the overall operating level of the SE20 and to balance the individual levels of the two channels.

Response Trimmers: To allow for balancing the response of the two channels of a stereo cartridge, or of two monaural cartridges, high and low frequency response trimmers are provided for each channel. Figure D shows the location of these controls and Figure E shows the range and character of the response change obtainable.



RESPONSE TRIMMERS
SIDE VIEW (COVER REMOVED)
FIGURE D

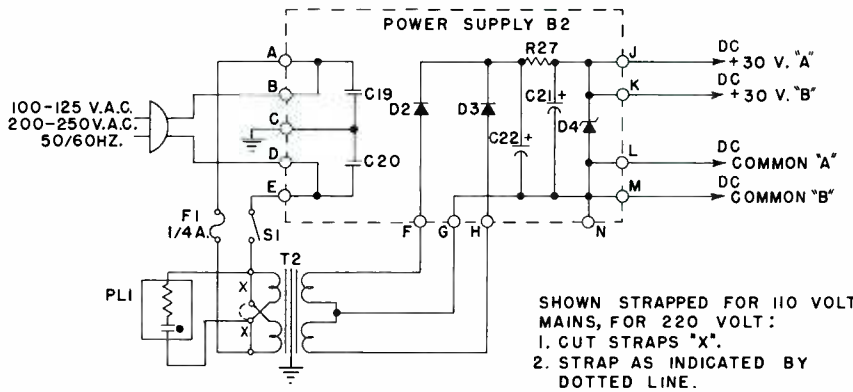
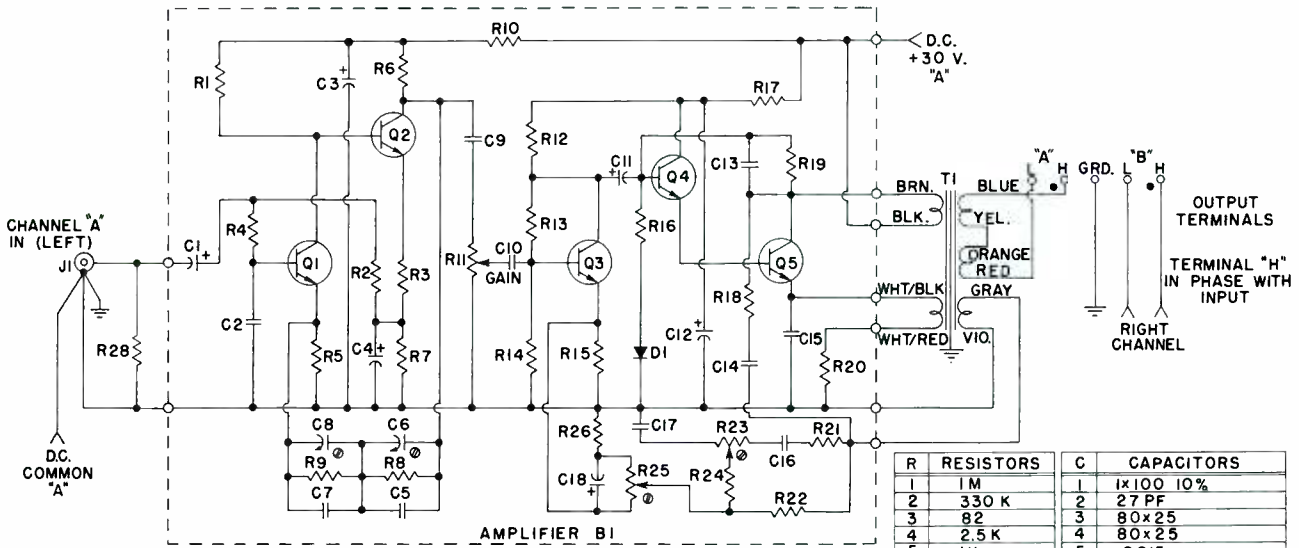


TYPICAL EFFECT OF RESPONSE TRIMMERS
FIGURE E

220 Volt Operation: The power transformer may be restrapped for operation with 220 volt A.C. supply. To make this change, see instructions on schematic for revising power transformer connections.

GUARANTEE

The SE20 Stereo Transcription Preamplifier is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential that you carefully repack the unit and return it to the factory for repair. Our guarantee is voided if the basic unit has been subjected to unreasonably rough handling or abuse.



STEREO TRANSISTORIZED TRANSCRIPTION PREAMPLIFIER

- NOTES:
- EQ TRIM. { 5KHZ-R23
30HZ-R25
 - CHANNEL 'A' IS SHOWN, CHANNEL 'B' IS IDENTICAL TO CHANNEL 'A'.
 - ALL RESISTORS 1/2 WATT, 5% CARBON COMPOSITION UNLESS SHOWN. POTENTIOMETERS 20% TOLERANCE.
 - ALL NON-ELECTROLYTIC CAPACITORS IN MFD. 10% AND 100 VOLTS OR MORE UNLESS SHOWN. ELECTROLYTIC CAPACITORS SHOWN IN MFDxVOLTS (TOLERANCE, -10 +50 UNLESS SHOWN).

R	RESISTORS	C	CAPACITORS
1	1M	1	1x100 10%
2	330 K	2	27 PF
3	82	3	80x25
4	2.5 K	4	80x25
5	1K	5	.0015
6	22 K	6	190 - 760PF
7	1K	7	.0068
8	36 K	8	190 - 760PF
9	560 K	9	.015
10	12 K	10	.022
11	50 K	11	1x40
12	68 K	12	80x25
13	2.7 MEG.	13	47 PF
14	560 K	14	.0047
15	1.5 K	15	.033
16	120K	16	.001
17	8.2 K	17	.022
18	560	18	1x100 10%
19	1.2 M	19	.01 20% 1000V
20	47	20	.01 20% 1000V
21	6.8 K	21	2100x30
22	12 K	22	2300x50
23	50 K		
24	1K	Q	TRANSISTORS
25	2.5 K	1	2N3391A
26	3.3 K	2	2N3391A
27	75.5W,WW	3	2N3391A
28	56K,1/4W,10%	4	2N3707
		5	2N3053
D	DIODES		
1	IN914	T	TRANSFORMERS
2	IN4002	1	SPECIAL TSE20-1
3	IN4002	2	SPECIAL TSE20-2
4	IN2989A		

MODEL SE20 STEREO TRANSCRIPTION PREAMPLIFIER SCHEMATIC



SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

**MODELS M64 AND M64-2E
STEREO PREAMPLIFIERS****GENERAL:**

The Shure Models M64 and M64-2E Stereo Preamplifiers are designed to furnish the voltage gain and equalization necessary to operate magnetic phono cartridges (such as the Shure Dynetic Cartridges), and tape playback heads with audio amplifiers that have no equalization. In addition, the units may be used without equalization for microphones or as buffer amplifiers.

Typical Applications:

- Conversion of stereo record playing systems from ceramic to magnetic cartridges.
- Preamplifier for microphones.
- Low gain buffer amplifier where long cable lengths are extended to a preamplifier input.

Advantages include complete freedom from microphonics, extremely low noise, the ability to use 50 feet or more of output cable, and years of maintenance-free performance. The operating temperature range is from 20°F (−6.7°C) to 135°F (57.2°C).

The Model M64 operates on 108-132 volts, 50/60 Hz power line, or from an auxiliary 24 to 36 volt DC supply such as the Shure Model A67B Battery Power Supply. The M64-2E is identical to the M64 except that it operates on a line voltage of 216-264 volts, 50/60 Hz.

The Model M64 and M64-2E feature a single 3-position slide switch for selecting equalization for Phono, Tape, or Flat. The Phono position provides the Standard RIAA Equalization for phono records. The Tape position provides the Standard 7½ IPS NAB Equalization for tape, and the Flat position provides a flat amplifier for microphones or as a buffer amplifier for magnetic phono cartridges when long lines or switching systems are necessary between the turntable and main equalized preamplifier. (NOTE: When used as a buffer amplifier, the Low Level Outputs should be used). The input and Output jacks will accept standard phono plugs. There are input jacks for Channel 1 and Channel 2; output jacks for Ch. 1 High Level, Ch. 1 Low Level, Ch. 2 High Level, and Ch. 2 Low Level.

**SPECIFICATIONS****Gain:**

Gain measured at 1 KHz with Input through 680 ohms and Output terminated in 47 K ohms:

Equalization Switch Position	High Level Output	Low Level Output
Flat	+27.5 db	+ 4.0 db
Phono	+34.5 db	+11.0 db
Tape	+37.0 db	+13.5 db

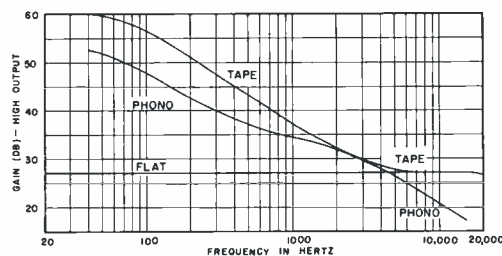
Frequency Response:

(See Typical Frequency Response Table—Figure A)

Flat: ± 2 db from 20 Hz to 20 KHz

Phono: ± 2 db of the Standard RIAA curve from 40 Hz to 15 KHz

Tape: ± 2 db of the 7½ IPS NAB curve from 50 Hz to 15 KHz



**FREQUENCY RESPONSE
FIGURE A**

Distortion:

Under 1% Total Harmonic Distortion for an output of 2 volts at 1 KHz in Phono, Tape or Flat positions. In the Phono position the total Harmonic Distortion is less than 1% at 30 Hz with 2 volts output.

Clipping Level:

The maximum input levels at 1 KHz without clipping are:

Phono and Tape: 100 mv
Flat: 250 mv

Channel Separation:

50 db or better at 1 KHz

Channel Balance:

Channels matched within 2 db at 1 KHz

Hum and Noise:

Phono: Better than 71 db below 10 millivolt input from 20 Hz to 20 KHz

Flat: Better than 64 db below 10 millivolt input from 20 Hz to 20 KHz

Operating Voltage:

M64: 120 volts \pm 10%, 50/60 Hz or 30 volts \pm 20% DC. The M64 is UL and CSA approved for use in commercial applications.

M64-2E: 240 volts \pm 10%, 50/60 Hz or 30 volts \pm 20% DC.

Battery Operation:

The M64 and M64-2E may be powered by three Eveready 216 Batteries in series or equivalent power source connected to 30 V.D.C. jacks. Battery life is over 100 hours. The Shure Model A67B power supply, or power jacks on Shure's Models M63, M67, or M68, may be connected to the 30 V.D.C. jacks to power the M64 or M64-2E.

Input Impedance:

Resistance is 50,000 ohms at 1 KHz

Capacitance is 350 pf

Output Impedance:

High Level: Less than 1000 ohms at 1 KHz (minimum recommended load is 22,000 ohms)

Low Level: 600 ohms (any load on Low Level output will not affect input clipping level)

Dimensions:

See Figure B

Weight:

1 $\frac{3}{4}$ pounds (794 grams)

Power Consumption:

5 watts

Temperature Range:

Operating: 20°F to 135°F

Storage: -20°F to 160°F

Installation:

The M64 and M64-2E Preamplifier may be mounted to an amplifier chassis or cabinet by means of screws passed through mounting slots at base of M64 and M64-2E Preamplifier chassis. The Preamplifiers can be mounted in any position for normal operation, but for best results, the Preamplifiers should be located away from motors or other hum producing power sources and away from intense heat sources. Should hum be a problem in a given system or installation, one or more of the power

plugs may be reversed to reduce hum. If the turntable has a grounding wire, this wire may be connected to the "GROUND" screw on the Preamplifier to reduce hum pickup.

CAUTION:

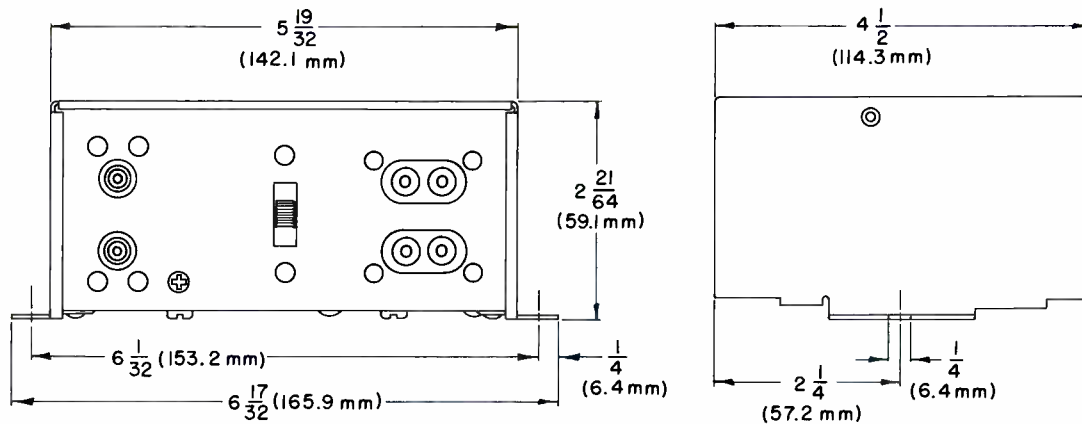
The use of the M64 and M64-2E Stereo Preamplifier with power amplifiers of the transformerless (AC-DC) type may result in a shock hazard. A suitable power line isolation transformer should be used with such equipment.

Connections:

- a. Set selector switch to the desired function. This automatically selects the proper equalization (frequency response) for both channels.
- b. For the equalized Phono (RIAA) or Tape (NAB) position, connect the signal leads from the phono cartridge or tape head to the jacks marked "Channel 1 Input" and "Channel 2 Input." * For the Flat position using two separate high impedance microphones, connect the cable from one high impedance microphone to jack marked "Channel 1 Input." The cable from the other high impedance microphone should be connected to the jack marked "Channel 2 Input." For single high impedance microphone applications connect to either Channel 1 or Channel 2. NOTE: If low impedance microphones are to be used, a suitable input transformer such as the Shure A95A should be used. Attention must be given to information contained in the data sheets of the phono cartridges, tape heads, or microphones regarding their connections, phasing and grounding.
- c. Connect Ch. 1 and Ch. 2 (High Level or Low Level) output jacks to the corresponding input jacks of the power amplifier, preamplifier, tape recorder or mixer. † If it is found necessary to ground the M64 or M64-2E Preamplifier chassis, ground connection may be made to the "GROUND" screw on the Preamplifier chassis.

* The Flat position may be used for high impedance microphones, or for phono cartridge or tape head buffering applications in which the output of the M64 or M64-2E is connected to an equalized amplifier input.

† The High Level outputs may be connected to high-level auxiliary inputs, and the Low Level outputs may be connected to low-level microphone inputs (or equalized phono or tape head inputs in buffering applications).



OVERALL DIMENSIONS

FIGURE B

- d. If AC power operated, insert the M64 or M64-2E power line cord into a proper power outlet, preferably one controlled by the power amplifier's On-Off switch. Be sure power switch on M64 or M64-2E is in the "On" position when remotely turned "On" & "Off".

Balanced Line Output:

For professional low impedance balanced line use, such as broadcast systems or recording consoles, an external line matching transformer (Shure Model A95A) may be added to each High Level output of the M64 or M64-2E. The resultant output level will be approximately -32 dbm. If a higher output level is necessary (-20 dbm) the following change can be made by qualified service personnel only, which will increase the output level by approximately 12 db.

1. Unplug the AC line cord before removing cover.
2. Remove the three large Phillips head screws that hold the case cover in place.
3. Lift off cover.
4. Remove the two smaller Phillips screws that hold the internal shield and the printed circuit board in place.
5. Lift the printed circuit board assembly straight up until 1 K resistors R13 and R14 are accessible. (See Figure C) Note R13 and R14 are raised on longer leads than the other resistors for ease of identification.
6. Solder 330 ohm $\frac{1}{4}$ watt resistors across (in parallel with) the extended lead wires of R13 and R14 (330 ohm resistor across the 1000

ohm resistor). The extra lead length of R13 and R14 makes this very easy and it is not necessary to alter the printed circuit board or its components.

7. Remount the printed circuit board assembly and replace the cover, being careful not to pinch any wires when closing up the unit.

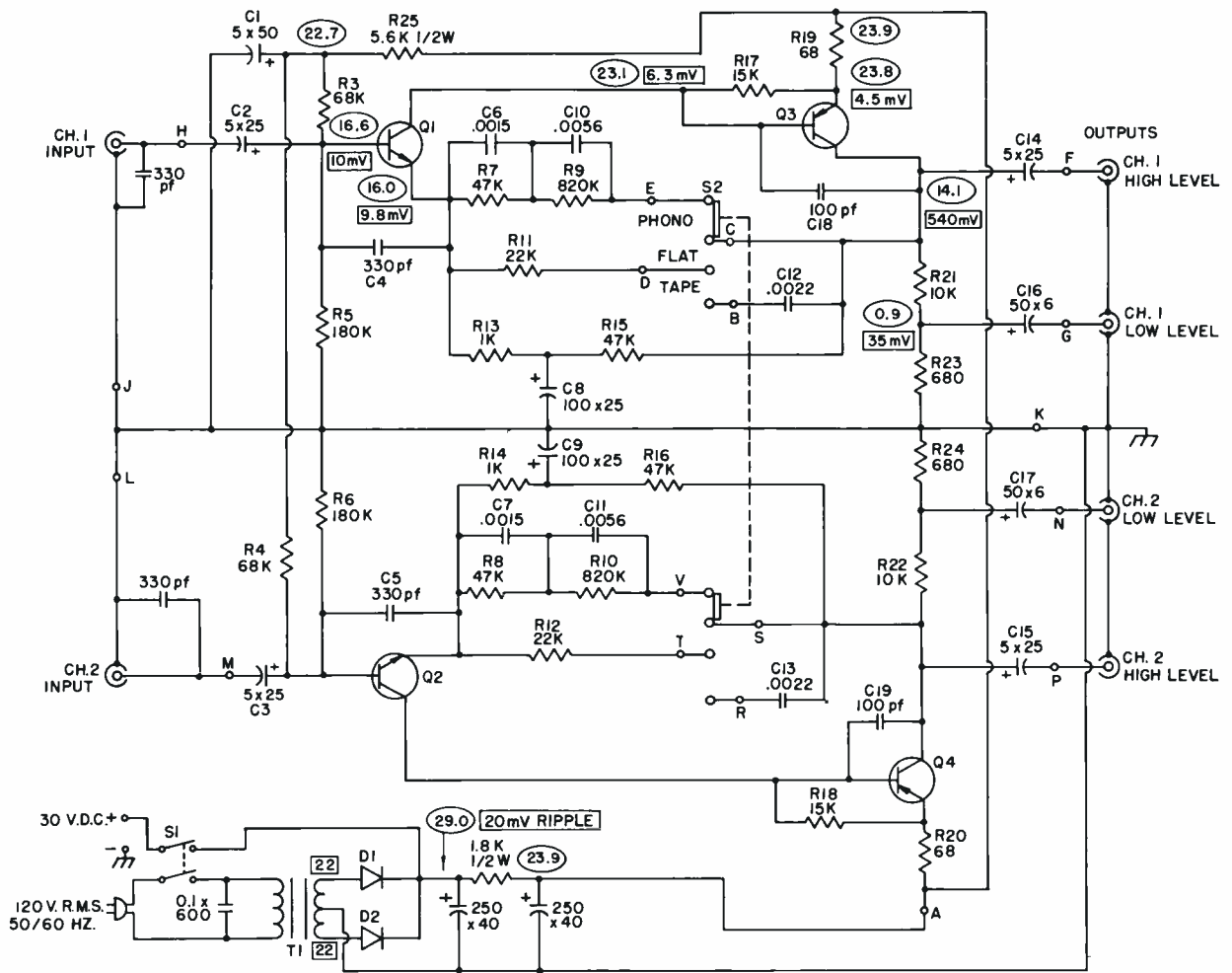
NOTE: This change will decrease the input clipping level of the preamplifier to about 25 mv so that if high output cartridges or very highly modulated records are used the pre-amplifier may tend to clip on loud passages. If the gain increase desired is less than 12 db, the following resistors can be used in parallel with R13 and R14 instead of the 330 ohm resistors:

- for 3 db, use 2.2 K ohms
- for 6 db, use 1 K ohms
- for 9 db, use 560 ohms

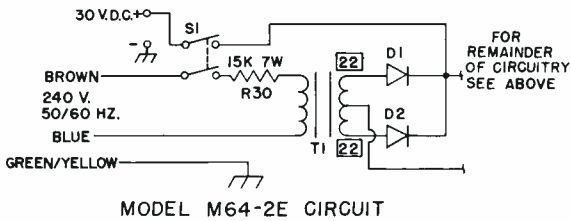
Guarantee:

The Shure Model M64 and M64-2E Stereo Preamplifiers are guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential to carefully repack the unit and return it to the factory, or, if outside the United States, to your dealer or authorized Shure Service Center for repair. Our guarantee is voided if the basic assembly has been modified other than so suggested in this sheet or the unit has been subjected to unreasonably rough handling.

(See page 4 for Circuitry Diagram)



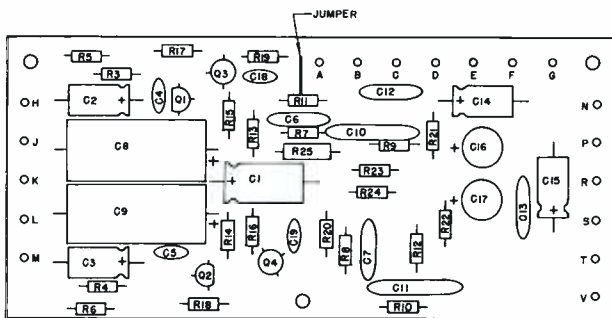
MODEL M64 CIRCUIT



MODEL M64-2E CIRCUIT

NOTES:

1. ALL CAPACITORS IN MFD AND 100 VOLTS OR MORE UNLESS OTHERWISE SHOWN. ELECTROLYTIC CAPACITORS SHOWN IN MFD x VOLTS.
2. ALL RESISTORS 10%, 1/4 WATT UNLESS OTHERWISE SHOWN.
3. THE FOLLOWING SYMBOL WITH LETTER DESIGNATION DENOTES A TERMINAL ON PRINTED CIRCUIT BOARD ASSEMBLY.
4. DENOTES A.C. VOLTAGES
 DENOTES D.C. VOLTAGES
 ALL VOLTAGES MEASURED WITH A.C. LINE = 120V, 60 HZ, PHONO EQUALIZATION, INPUT TO CHANNEL 1 = 10 MV RMS AT 1000 HZ. D.C. VOLTAGES MEASURED WITH 11 MEGOHM VTVM. A.C. VOLTAGES MEASURED WITH 1 MEGOHM VTVM. VOLTAGES ARE TYPICAL AND MAY VARY ±20%. CHANNEL 1 VOLTAGES ONLY SHOWN. CHANNEL 2 IS SIMILAR.



PRINTED CIRCUIT BOARD

PARTS LIST		
ITEM	SHURE PART NO.	DESCRIPTION
D1, D2	86A404	DIODE, SILICON, IN4002 OR EQUIVALENT
Q1, Q2	86A336	NPN TRANSISTOR, SILICON, T.I. TIS97
Q3, Q4	86A348	PNP TRANSISTOR, SILICON, CONTINENTAL DEVICES CS43079 OR MOTOROLA 2N5087
T1	51A212	TRANSFORMER, POWER
S1	55A67	SWITCH, SLIDE, DPDT
S2	55A62	SWITCH, SLIDE, DPDT

FIGURE C



The M67 is a transistorized microphone mixer/remote amplifier specifically designed for professional applications. The excellent performance and versatility of this complete, compact console make it an ideal choice for studio, remote, or original sound reinforcement use, and as an "add-on" mixer for expanding existing facilities. It is also ideally suited for use with tape recorders and VTR's to provide multiple microphone inputs.

The Model M67-2E Professional Microphone Mixer is similar to Model M67 except that it is designed to be connected to a 216-264 volt AC power line.

All information on the data sheet for the Model M67 applies, except for those references to AC operating voltage and power-line cord.

Features include:

- Wide, flat frequency response and low distortion at up to +18 dbm output.
- Extremely low noise and RF susceptibility.
- Four low impedance balanced-line microphone inputs with individual gain controls. Mumetal shielding on input transformers.
- Line input switchable for 600-ohms terminating, or bridging.
- Outputs, 600-ohm line and low impedance microphone level. Outputs may be used simultaneously.
- VU meter calibrated for +4 and +10 dbm with range switch. Illuminated with AC operation.
- Meter isolated from DC on line. Line output transformer unaffected by up to 100 ma DC.
- AC or battery operation (with accessory battery pack). Noiseless automatic switch-over to battery in event of AC line failure. Battery test provision.
- Low frequency roll-off switch on each channel.
- Two-level headphone monitor provision designed to accommodate 600 to 2,000 ohm headphones. Any headphones from 8 ohms to crystal may be used.
- Direct mix bus input for stacking units.
- Line output terminals phase indicated. All connections phased.
- Compact, lightweight.

GUARANTEE: The Shure Mixer is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential that you carefully repack the unit and return it to the factory or, if outside of the United States, to your dealer or authorized Shure Service Center for repair. Our guarantee is voided if the basic assembly has been subjected to unreasonably rough handling.



SPECIFICATIONS

PERFORMANCE

Frequency Response: ± 2 db from 20 to 20,000 Hz.

Gain: (Outputs terminated; line 600 ohms, microphone 150 ohms). Gain will decrease a maximum of 5 db with nearly exhausted battery.

Input	Output	
	Line	Microphone
Low Impedance Microphone (150 ohms)	90 db	30 db
Line, Bridging or Terminating	40 db	-20 db

Noise: Equivalent input noise: -129 dbV (low impedance microphone, 150 ohms—300 to 20,000 Hz.) into 600-ohm load, at full gain.

Equivalent input hum and noise: -125 dbV (low impedance microphone, 150 ohms—20-20,000 Hz.) into 600-ohm load, at full gain.

Distortion: Under 1% T.H.D. from 20 to 20,000 Hz. at +10 dbm out (0.5% Typical).

Control Interaction: Under 1 1/2 db with any control combination.

INPUTS

Input	Impedance		Input Clipping
	Designed for Use With	Actual (Internal)	
Microphone	25-600 ohms	800 ohms	-30 dbV (150 ohms)
Line, Bridging	Less than 10 K ohms	66 K ohms	Greater than +22 dbV
Line, Terminated	600 ohms	600 ohms	Greater than +24 dbm

Minimum Common Mode Rejection:

100 db with microphone input of 10 volts at 100 Hz.

OUTPUTS

Output	Impedance		Output Clipping Level
	Designed For Use With	Actual (Internal)	
Microphone	Any low impedance microphone input.	0.5 Ohms	6 mv, -44 dbV
Line	600-Ohm*	140 Ohms	+18 dbm

*Other line impedances may be used; however, the VU meter is calibrated for 600-Ohm line termination. See "VU Meter" Section on Page 3.

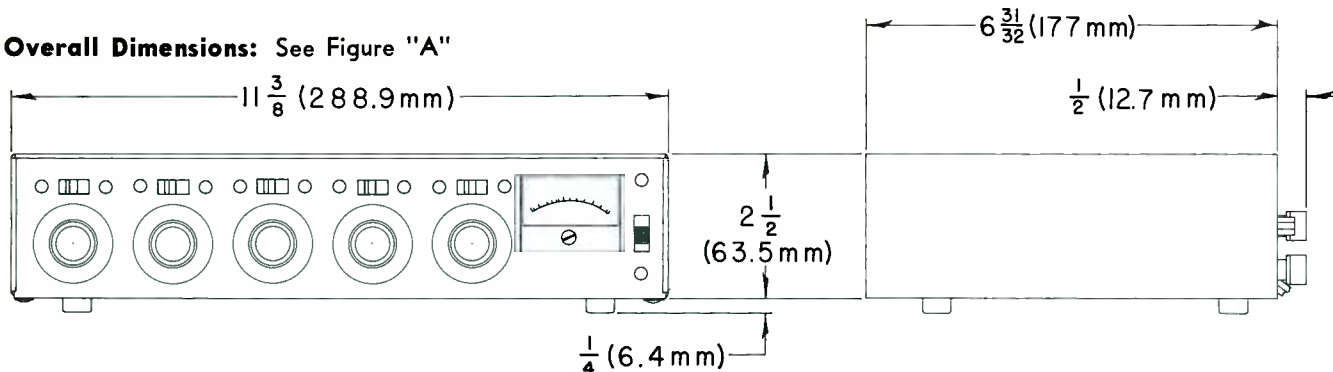
Headphone Output: See "Headphone" Section on Page 3.

Temperature Range:

Operating: 0°F to 135°F (-17.8°C to 57°C)

Storage: -20°F to 160°F (-29°C to 71°C)

Overall Dimensions: See Figure "A"



OVERALL DIMENSIONS — FIGURE A

Overload and Shorting Protection:

Shorting the outputs, even for prolonged periods, will produce no damage.

Microphone inputs will not be damaged by signals of up to 3 volts (100 times clipping level).

Operating Voltage:

MODEL M67:

AC Operation: 120 volts, $\pm 10\%$ at 50 to 60 Hz.

DC Operation: 30 volts, 6 ma. maximum drain for +10 dbm output.

MODEL M67-2E:

AC Operation: 240 volts, $\pm 10\%$ at 50 to 60 Hz.

DC Operation: 30 volts, 6 ma. maximum drain for +10 dbm output.

The Model M67-2E is supplied with a three-conductor power-line cord, but no plug. The power-line cord plug should be installed by a qualified person. The red lead should be connected to the "live" or "hot" terminal of the plug, and the black lead to the neutral terminal of the plug. The green lead is the grounding conductor and should be connected to the ground or earth terminal of the plug.

Weight: 4 lbs., 13 oz.

CONTROLS, CONNECTIONS AND OPERATIONS

INPUTS

Microphone:

The four microphone inputs (Cannon XL-3-13 type connector) are located on the rear panel and designated "Mic. 1" through "Mic. 4."

Inputs are balanced (internal transformer, mumetal shielded) and connections are Pins 2 and 3 "hot," Pin 1 "ground."

For microphone operation, the switches labeled "Mic. 1/Tone Osc." and "Mic. 4/Line" must be in the "Mic. 1" or "Mic. 4" position.

For impedance and clipping level see Table under Input Specifications.

Line:

The "Mic. 4" connector is also used as the Line Input Connector by switching the "Mic. 4/Line" switch to "Line."

Provision is made for either 600-ohm line termination or bridging, the choice being made by the appropriate position of the "Bridge/Terminate" switch above the input connector.

Either configuration is balanced and connections are

Pins 2 and 3 "hot" and Pin 1 "ground."

Impedances and operating signal levels are shown in the "Input Specifications" Section.

OUTPUTS

Microphone:

The microphone level output (Cannon XL-3-14 type connector) appears on the rear panel with the designation "Mic. Output." It is used for feeding a low impedance microphone line or the low impedance microphone input of an associated piece of equipment. This is a balanced output with Pin 1 "ground." Pins 2 and 3 are "hot," and are in phase with the corresponding pins of the input connectors.

Line:

The line output (binding posts) appears on the rear panel and is designated "Line Out." These terminals are numbered "3" and "2" and are in phase with correspondingly numbered pins in the input connectors. The adjacent ground terminal corresponds to Pin 1. While the line output may be used to drive lines of various impedances, the VU meter is calibrated for use with a 600-ohm terminated line.

The line output transformer will operate properly with up to 100 ma. DC flowing through the line. This feature allows use of ordinary "dialed-up" telephone lines with DC across them. (Since a slight increase in distortion may occur at high output levels with maximum DC current, operation at +4 dbm is recommended for this use.)

NOTE: The microphone and line outputs may be used simultaneously if desired, to provide an isolated PA feed or to drive different pieces of equipment.

CONTROLS

Individual Input Gain Controls:

Front panel controls designated "Mic. 1" through "Mic. 4" are the individual gain controls for correspondingly numbered inputs. Note that the input connectors are located on the rear panel directly behind their corresponding numbered control.

Control "Mic. 1" serves an additional function as the individual level control for the tone oscillator when the "Mic. 1/Tone Osc." switch is in the "Tone Osc." position.

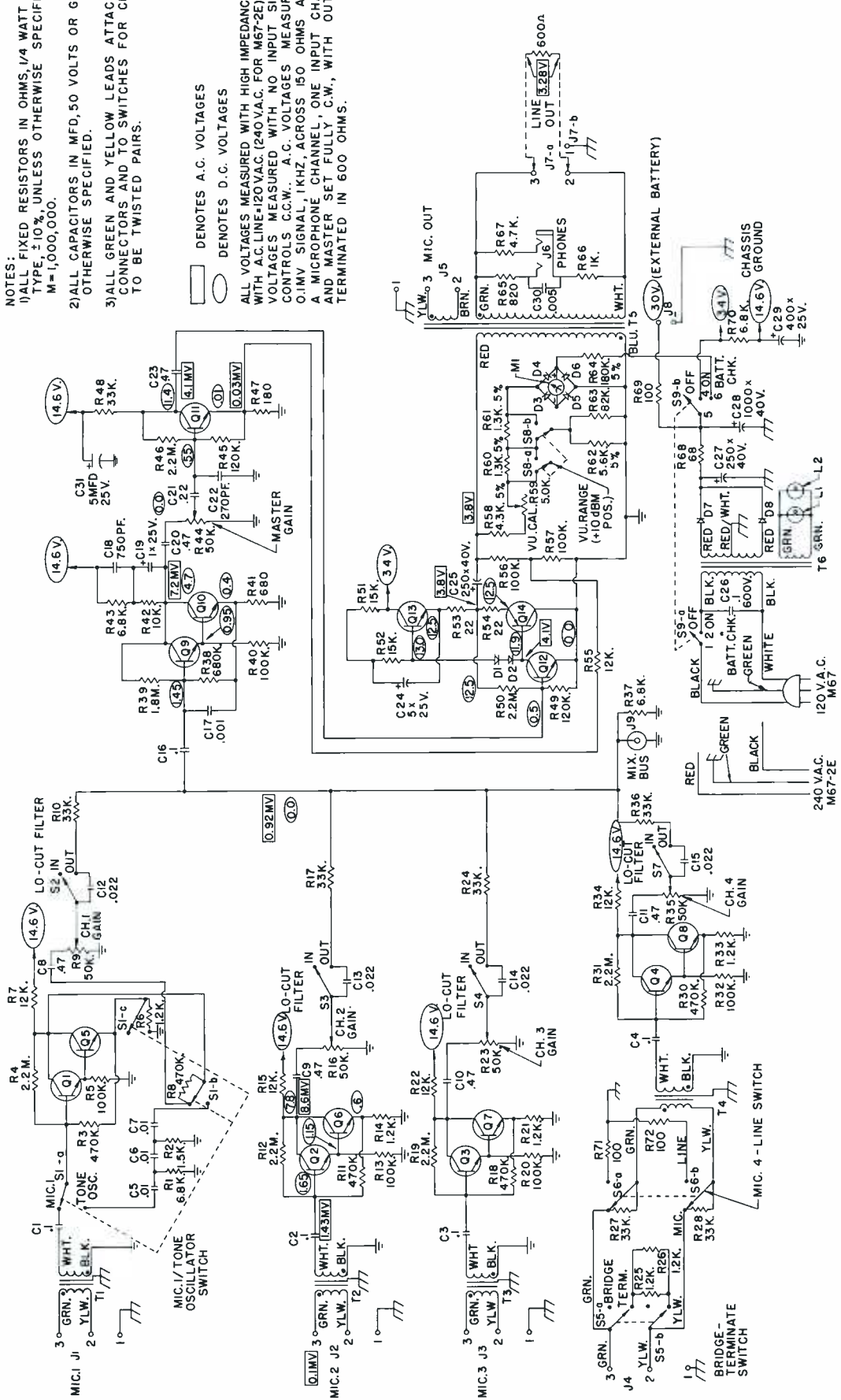
Control "Mic. 4" also serves as the individual gain control for the line input when the "Mic. 4/Line" switch is in the "Line" position.

NOTE: For best signal-to-noise ratio, the individual input controls should be operated at as high a setting as possible, consistent with maintaining adequate control range.

NOTES:
 1) ALL FIXED RESISTORS IN OHMS, 1/4 WATT COMPOSITION TYPE, ±10%, UNLESS OTHERWISE SPECIFIED. K=1000, M=1,000,000.
 2) ALL CAPACITORS IN MFD, 50 VOLTS OR GREATER, UNLESS OTHERWISE SPECIFIED.
 3) ALL GREEN AND YELLOW LEADS ATTACHED TO INPUT CONNECTORS AND TO SWITCHES FOR CHANNEL 4 ARE TO BE TWISTED PAIRS.

□ DENOTES A.C. VOLTAGES
 ○ DENOTES D.C. VOLTAGES

ALL VOLTAGES MEASURED WITH HIGH IMPEDANCE VTVM. WITH A.C. LINE=120V.A.C. (240V.A.C. FOR M67-2E). D.C. VOLTAGES MEASURED WITH NO INPUT SIGNAL. ALL CONTROLS C.C.W. A.C. VOLTAGES MEASURED WITH 0.1MV SIGNAL, 1KHZ. ACROSS 150 OHMS AT INPUT TO A MICROPHONE CHANNEL, ONE INPUT CHANNEL AND MASTER SET FULLY, C.W., WITH OUTPUT TERMINATED IN 600 OHMS.



MODELS M67 AND M67-2E PROFESSIONAL MICROPHONE MIXERS
 CIRCUIT DIAGRAM

Master Gain Control:

The front panel control designated "Master" is the master gain control and controls the overall output level of all the mixed sources (including signals which may be applied to the "Mix Bus" input).

VU METER

Range:

The VU meter is factory calibrated for use with a 600-ohm terminated line. The "VU Range Switch" above the master gain control selects either a +4 or +10 dbm output at 0 VU meter indication. (This switch changes the meter indication, and does not change the actual output level.) Microphone output levels are 60 db below line output.

The +4 range is recommended for normal use to provide 14 db margin from operating level to clipping level.

The VU meter is calibrated with no load on the headphone output. Low impedance (under 250 ohms) phones may have some loading effect and alter the VU calibrations slightly. If the use of such phones appears to be normal, (or if other than a 600-ohm terminated line is used) it may be desirable to recalibrate the VU meter by means of the "VU Cal." control (see Figure D.) (Range of this control is approximately ± 2 db.)

Illumination:

The VU meter is illuminated by two No. 47 lamps operating well under the normal ratings for a life expectancy of greater than 10,000 hours. The lamps are used only with AC operation. Consequently, when a battery supply is used as a safety stand-by, the illumination serves as a visual alarm if the AC is interrupted and the unit has switched to battery.

For lamp replacement instructions see Figure E.

DC Isolation:

The VU meter is connected on the primary side of the output transformer to assure protection from any DC level on the telephone line. (See OUTPUTS, LINE)

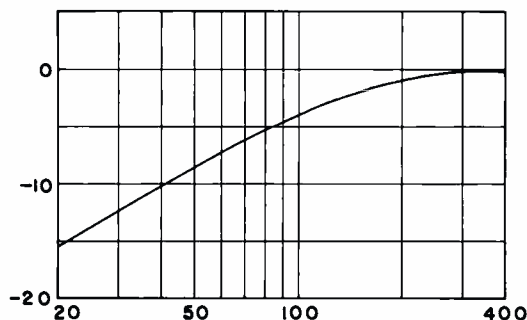
tone oscillator

A built-in tone oscillator is provided for line test and level checks. The tone oscillator is activated by setting the "Mic. 1/Tone Osc." switch (rear panel) to "Tone Osc." and may then be controlled in level by control "Mic. 1/Tone Osc." (on the front panel). The frequency is approximately 700 Hz. and the signal will appear on both line and microphone outputs as well as the headphone and mix bus connectors.

The oscillator should be switched off ("Mic. 1" position) when not actually in use.

LO-CUT FILTERS

These filters are activated by the switch above each of the individual channel level controls, and may be used individually with each control as needed. The typical response function is shown in Figure B. The "Mic. 4/Line" filter will operate with either microphone or line input.



TYPICAL LOW-CUT FILTER ACTION
FIGURE B

HEADPHONES

The headphone output appears on the rear panel and is designated "Headphones." A two-circuit phone jack is used to provide a choice of level for different headphone impedances. Normally, a single circuit plug should be used. If inserted only partially (to the first detent), the available voltage is approximately .18 volts into 1,000 ohms with +4 dbm out of the "Line Out" terminals. With the same operating conditions the second position will provide approximately .38 volts. These voltages are selected for normal operation with 600-ohm to 2,000-ohm headphones. Other headphone impedances may be used, but with a variation in the monitor level and the possibility of a slight amount of VU meter loading with very low impedance phones. (Maximum change is 0.5 db with headphone jack shorted.)

If stereo phones are used, the two-circuit plug may be inserted completely (to second position) and output will appear in both phones.

The "Tip" connection of the headphone plug will be in phase with Pin 3 of all input and output connectors, and with the tip of the mix jack.

MIX BUS

Direct access to the mixing bus is provided through the "Mix Bus" jack (phono type) on the rear panel. This provision is made primarily to facilitate "stacking" (or multing) of M67's to achieve additional input capacity without losing any inputs.

With two M67's, for example, the two mixing buses are directly connected, providing two independent masters and two isolated line amplifiers with eight individually controlled inputs. Since the buses are directly paralleled, a 6 db level drop will occur, but the VU meter indication will still be correct. Noise specifications are not adversely affected by this interconnection.

The input clipping level to the mixing bus is 0.2 volts through 3.5 K ohms. The gain from "mix bus" input to line output is 70 db, and from 150 ohm microphone to "mix bus" is 20 db.

To facilitate stacking, a hardware and cable kit is available as Shure Accessory Model A68S.

If other use of this provision is contemplated, it should be remembered that the "mix bus" terminal is connected directly to the mixing bus and operates at 3.5 K ohms impedance, hence connecting devices should have at least 3.5 K ohms internal impedance.

BATTERY OPERATION

Battery Supply

The M67 is designed so that it may be operated with an external battery or well filtered DC supply providing 30 Volts DC. Current drain is under 6 ma. at +10 dbm output level.

The DC input terminals are located adjacent to the power cord on the rear panel and are designated "30 Volts DC" "+" and "-".

The use of battery supplies designed for the M67 (see Accessory List) is recommended both for convenience in connecting and mounting and to permit use of the automatic power change-over feature.

Automatic Power Change-Over

When used with Shure accessory power supplies, the M67 may be operated from the AC power line with the battery supply connected. In this configuration, the unit will automatically switch to battery operation should AC voltage fall below a suitable level. This change-over is completely automatic, instantaneous, and completely noiseless. Should line power fail completely, the VU meter lamps will extinguish, providing a visual indication of the line failure. If use of a 30-volt DC supply other than Shure Battery Supplies is desired, the automatic change-over feature may be retained by connecting a suitable silicon diode (Shure RKC21) in series with the positive lead. The cathode (band) end connects to the +30-Volt DC terminal.

Battery Check

Battery condition may be determined by use of the "Battery Check" position of the main power switch adjacent to the VU meter. This check must be made with the AC line cord disconnected. The check procedure is as follows:

With the AC line cord disconnected, leave power switch in "ON" position for at least ten seconds (to discharge filter capacitors), then move switch up to "Battery Check." Observe reading on VU meter. A new battery will give about a +2VU indication. Battery condition is good if meter indication is above 0 VU (red end of scale). 0 VU or below indicates that battery must be replaced for proper operation.

For best performance on battery operation at temperatures below 40° F., change batteries when Battery Check meter reading is 1.0 VU or lower.

NOTE: This check interrupts power to the amplifiers, and therefore, should be made only when the unit is not in operation.

DC Power Take-Off

With AC operation, the "30-Volt DC" terminals are energized with polarity shown and may be used to power up to two additional M67's or other 30-volt DC low drain accessories.

ACCESSORIES

A67B Battery Supply

This unit is designed to power the M67 at full rated output. Battery life is approximately 70 hrs at +10 dbm and 85 hrs at +4 dbm output at 4 hours use per day. See temperature note below.

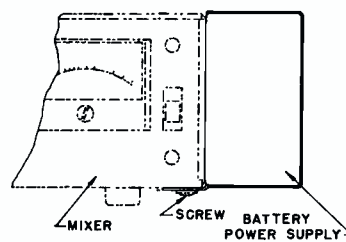
It may be used either as the sole power source or as a stand-by safety during AC operation, providing automatic, noiseless switchover in case of AC failure.

The housing is designed to attach to the M67 as shown in Figure C, and is attached by removing one of the M67 cover screws, positioning the battery supply over the hole, and fastening the two together with the screw.

The battery complement is three Eveready 216's or equivalent 9-volt batteries.

Earlier models of the A67B had a battery complement of three Burgess U20's, Eveready 413's or equivalent 30-volt battery.

NOTE: Due to changes in the operating characteristics of carbon-zinc batteries at low temperatures, the useful operating life will be noticeably shorter at lower than normal room temperatures. See Battery Check Instructions.



A67B INSTALLATION
FIGURE C

A67H Handle/Tilt Stand

The Model A67H is designed to provide a convenient means for tilting the M67 to permit better panel visibility and greater ease of operation. In the locked position the front panel is elevated 20°. In the free position, the A67H serves as a rugged carrying handle.

A68P Phono-Preamplifier

The A68P is a monaural pre-amp which may be used to convert the bridging line input of the M67 for use as an equalized phono input. It provides both equalization and preamplification, and is powered from the 30-volt DC power take-off provision. (The A68P is supplied with a phono plug which must be replaced with a Cannon XL3-12 type connector. Pin 3 center conductor, pins 2 and 1 shield)

A68S Stacking Kit

This accessory consists of brackets for vertical stacking of two M67's, and the interconnecting cable for the mix bus connections.

A68R Rack Panel Kit

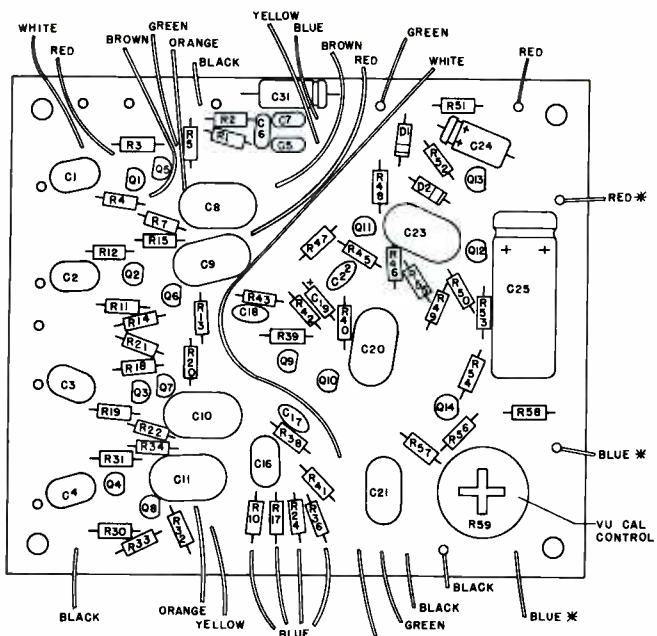
This kit consists of a 19"x3 1/2" precut rack panel and necessary hardware for rack mounting of the M67 with its cover in place.

A68L Locking Panel

This panel fits within the front hood of the M67 cover and locks in place to prevent tampering with the front panel controls.

AC60 Attache Carrying Case

This case is compartmentalized and foam lined for an M67 and accessories.



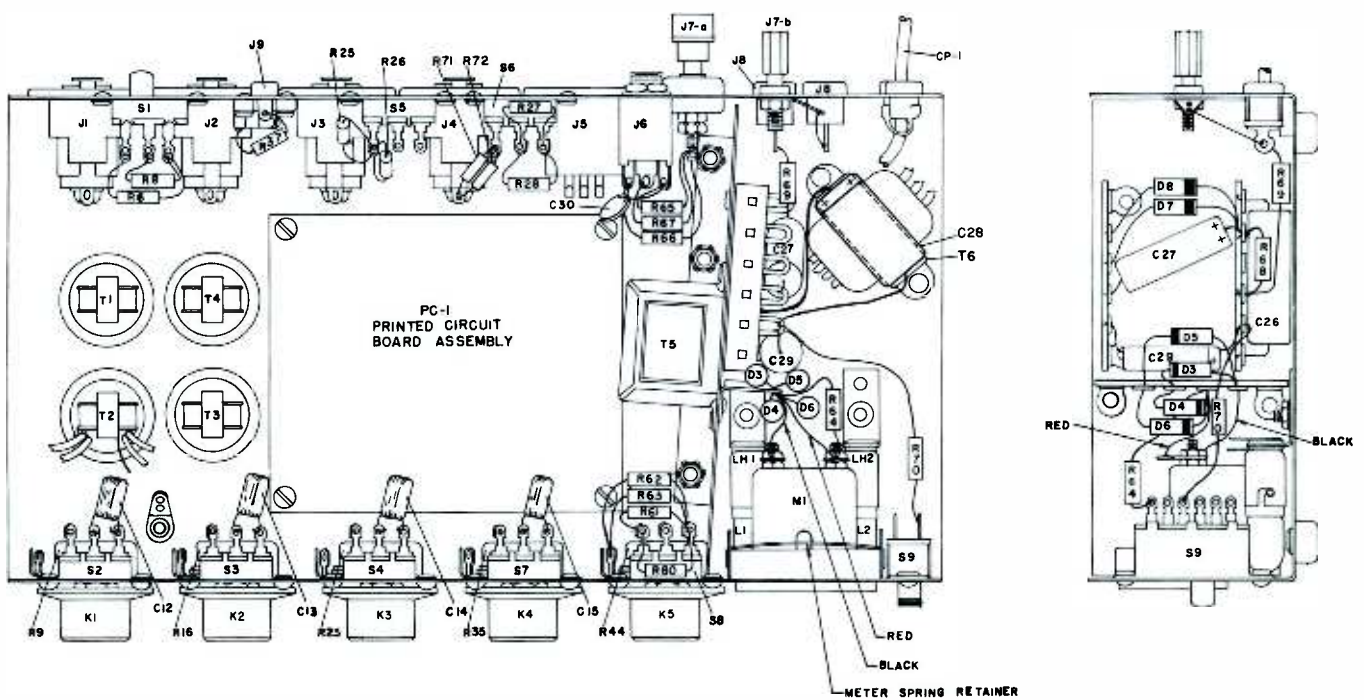
PRINTED CIRCUIT BOARD ASSEMBLY
FIGURE D

PARTS LIST			
ITEM	SHURE KIT NO.	QUANTITY IN KIT	DESCRIPTION
D1,D2,D7,D8	RKC21	4	DIODE, SILICON, IN4002 OR EQUIVALENT.
D3,D4,D5,D6	RKC19	4	DIODE, GERMANIUM, IN48 OR IN60.
L1,L2	RKC7	4	LAMP, PILOT #47, 6.3 V.A.C.
M1	RKC5	1	METER, D.C. 190 MICROAMPERE VU MOVEMENT.
Q1-Q11*	RKC9	4	NPN TRANSISTOR, 86A327, SILICON, SELECTED HIGH GAIN, LOW NOISE SIMILAR TO MOTOROLA 2N5088 OR TI 2N3711.**
Q12	RKC12	1	NPN TRANSISTOR, 86A336, SILICON, TEXAS INSTRUMENT T1S97.
Q13**	RKC65	1	NPN TRANSISTOR, 86A334, SILICON, TEXAS INSTRUMENT T1S92.**
Q14**	RKC66	1	PNP TRANSISTOR, 86A335, SILICON, TEXAS INSTRUMENT T1S93.**
R9,R18,R23,R28,R44	RKC3	1	POTENTIOMETER 50 K, AUDIO TAPER.
R59	RKC17	2	RHEOSTAT, 5.0 K ± 20%, LINEAR.
S1	RKC11	1	SWITCH, SLIDE, 3PDT.
S9	RKC64	1	SWITCH, SLIDE, DP3T.
S2-S8	RKC10	4	SWITCH, SLIDE, DPDT.
T1-T4	RKC8	1	TRANSFORMER AND SHIELD ASSEMBLY
T5	RKC18	1	TRANSFORMER, OUTPUT, 600 OHM TO 600 OHM, AND MIC.
T6	RKC15	1	TRANSFORMER, POWER. (M67)
	RKC16	1	TRANSFORMER, POWER. (M67-2E).
LH-1	RKC13	1	LAMPHOLDER AND BRACKET.
LH-2	RKC63	1	LAMPHOLDER AND BRACKET (GROUNDED).
PC-1	RKC14	1	PRINTED CIRCUIT BOARD.
CP1	RKC-2	1	POWER CORD AND PLUG ASSEMBLY (M67).
	RKC-1	1	POWER CORD (M67-2E).
NOT SHOWN	RKC20	1	CHASSIS COVER
K1-K4	RKC6	1	BLACK KNOB
K5	RKC67	1	GRAY KNOB

* TO INSURE LOW NOISE FIGURE, PURCHASE REPLACEMENTS FOR Q1-Q11 FROM SHURE BROTHERS, INCORPORATED.
** FOR REPLACEMENT, PURCHASE Q13 AND Q14 AS MATCHED PAIR T1S92M-T1S93M.

LAMP REPLACEMENT

1. DISCONNECT A.C. CORD.
2. REMOVE 4 PHILLIPS HEAD SCREWS RETAINING COVER - ONE ON FRONT, ONE ON BACK, TWO ON BOTTOM.
3. REMOVE COVER.
4. REMOVE SPRING RETAINER ON TOP OF VU METER. NOTE METHOD OF ASSEMBLY - EASILY REMOVED BY PUSHING DOWN SPRING AT ONE END ADJACENT TO ALUMINUM BRACKET.
5. GENTLY PUSH VU METER FROM FRONT AND LIFT UP CLEAR OF CHASSIS.
6. BRACKETS MAY FALL OUT. NOTE THEIR POSITION IN CUT-OUT. BRACKETS ARE INTERCHANGEABLE.
7. REMOVE SCREWS RETAINING LAMP SOCKETS FROM UNDERSIDE OF CHASSIS. SOCKETS MAY NOW BE PUSHED CLEAR OF CHASSIS AND NEW #47 LAMPS REPLACED. IT IS ADVISABLE TO REPLACE BOTH LAMPS WHEN 1 BURNS OUT.
8. REPLACE LAMP SOCKETS AND LOOSELY FASTEN SCREWS.
9. PLACE 2 VU METER BRACKETS IN CUT-OUT, PUSHING THEM FIRMLY AGAINST SIDES OF CUT-OUT.
10. SLIDE VU METER INTO CUT-OUT. SHOULD LAMPS BE IN THE WAY, MOVE THEM. VU METER SHOULD FIT EASILY INTO CUT-OUT IF POSITIONED PROPERLY. DO NOT FORCE.
11. HOLDING VU METER FIRMLY AGAINST BACK SIDE OF CHASSIS FRONT PANEL, SQUEEZE BRACKETS AGAINST METER BODY. LOOP ONE END OF SPRING CLIP IN NOTCH OF INSIDE BRACKET. END OF SPRING CLIP POINTS UP, NOT DOWN. HOOK SPRING CLIP OVER PLASTIC RETAINER ON METER, AND FORCE OTHER END OF SPRING CLIP DOWN UNTIL IT SNAPS IN OUTSIDE BRACKET.
12. CHECK POSITIONING OF LAMPS, AND TIGHTEN THEIR 2 MOUNTING SCREWS.
13. REPLACE COVER.



PARTS PLACEMENT
FIGURE E

SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

A95A LINE MATCHING TRANSFORMER

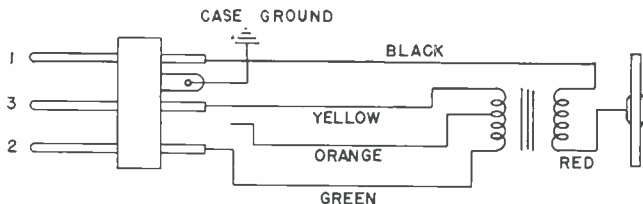
General: Model A95A is a high quality transformer which makes it feasible to run a microphone line from a low impedance microphone to a high impedance amplifier. This type of connection usually solves the problem of excessive high frequency loss and objectionable hum pickup when long lengths of microphone cable are necessary. The transformer can also be used to match high impedance microphones to low impedance inputs.

Model A95A matches 35-50 ohm and 150-250 ohm microphones to high impedance inputs and offers additional versatility when used in conjunction with Shure Dynamic, Ribbon, and Magnetic microphones.

The A95A Transformer is built into a compact, sturdy magnetic shield case, and is provided with mating input and output plugs for convenience in making connections.

Connections:

The internal connections of the A95A Matching Transformer are shown in Figure A.



CIRCUIT DIAGRAM

FIGURE A

For convenience in connecting the transformer, a plug of the Cannon XL-3-11 type is supplied for the input connection. Connect the two "hot" conductors of a balanced microphone line to pins 2 and 3; connect the shield to pin 1. For microphones with a separate shield and ground lead, connect both to pin 1. For unbalanced microphone line, connect "hot" conductor to pin 3 and connect shield or ground lead to pins 1 and 2.

An Amphenol MC1F Plug is supplied for the output connection from the transformer. Connect the "hot" terminal of the amplifier to the center of the plug, and connect the ground or shield from the amplifier chassis to the shell of the plug. To prevent excessive high frequency loss, a cable length of five feet or less is recommended at the output of the A95A Transformer.

Impedance Selection:

The Model A95A is supplied wired for 150-250 ohm microphone line. For use with 35-50 ohm line proceed as follows:

1. Remove male insert end of A95A transformer by turning screw in. (counter-clockwise).
2. Remove yellow lead from pin No. 3 and insulate bare wire of yellow lead with insulator from orange lead.
3. Solder orange lead to pin No. 3.
4. Re-assemble male insert into transformer housing and seat screw securely in place by turning out. (clockwise).

SPECIFICATIONS

Frequency Response:	20 to 20,000 Hz.
Input Impedance:	35-50 ohms and 150-250 ohms
Output Impedance:	High
Case:	Full magnetic shield Steel with Gray enamel
Case Diameter:	3/4" (19.1 mm)
Length:	2 1/2" (63.5 mm)
Net Weight:	2 1/2 ounces (71 grams)
Packaged Weight:	8 1/2 ounces (241 grams)

Guarantee: Each transformer is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, return the transformer to the factory for repair.

A15A
MICROPHONE
ATTENUATOR
(Yellow Nameplate)

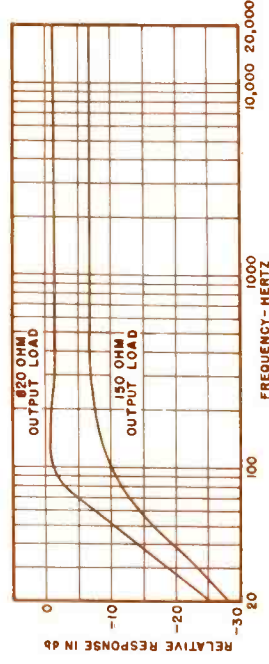
Prevents input overload. Ideal in applications where very strong signals are applied to a microphone input, as in feeding high level vocal or instrumental signals into microphone mixers; consoles or recorders; or in broadcasting sports remotes, etc. The Model A15A has an insertion loss of 15 db and an input and output impedance of 150 ohms. It is symmetrical, so it can be used in either direction.

A15PR
PHASE
REVERSER
(Red Nameplate)

Reverses the phase of a balanced line without modification of the equipment. Can also be used to reverse pin connections on High Z Cannon-type input if amplifier and microphone are wired differently. It is symmetrical and can be used in either direction.

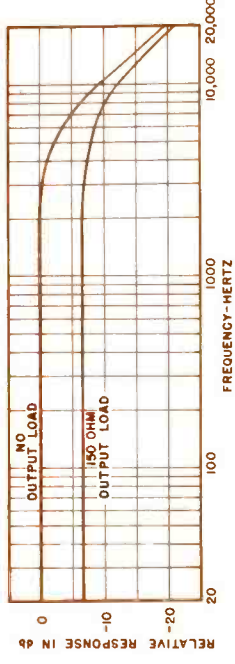
A15HP
HIGH PASS
FILTER
(Grey Nameplate)

Provides a low-frequency cut-off to reduce all types of unwanted low-frequency mechanical noises, such as boom, stand, or floor rumble; or electrical hum; or environmental sounds such as crowd noise, wind sounds, air conditioner rumble. Can also be used as an equalizer to create special effects. Slope is 12 db per octave, down 3 db at 100 Hz with 150 ohm load. One kHz loss is 0.5 db. maximum.



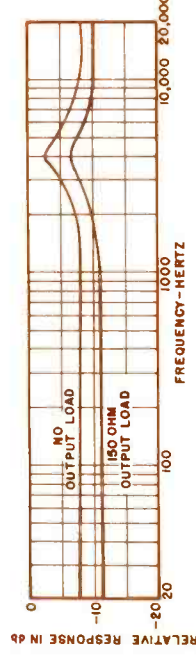
A15LP
LOW PASS
FILTER
(Green Nameplate)

Provides high-frequency cut-off to reduce effects of objectionable high-frequency noises. Useful for suppressing sibilance. Excellent for minimizing difficult "hiss," jingling, crinkling, whistling sounds. Can also be used as an equalizer to create special effects. Slope is 12 db per octave, down 4 db at 8 kHz with 150 ohm load. One kHz. loss is approximately 0.5 db.



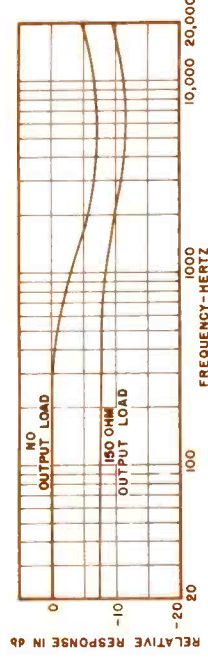
A15PA
PRESENCE
ADAPTER
(Orange Nameplate)

Adds controlled vocal or instrumental "presence" in recording, broadcast, and P.A. applications. Adds extra brilliance to sound systems. Improves voice range intelligibility. Provides a moderate response rise of 4 db in the 3 to 5 kHz region. Loss at 500 Hz. is 6 db with 150 ohm output load.



A15RS
RESPONSE
SHAPER
(Black Nameplate)

Provides excellent sibilance filtering in broadcasting, recording, and P.A. applications, and is useful in controlling some feedback conditions. It may also be used to flatten response in microphones which exhibit a rising characteristic in the 6 kHz region. It provides a 4 db dip in response in the 6 kHz region. One kHz loss is approximately 2 db (150 ohm output load).



A15LA
LINE INPUT
ADAPTER
(Blue Nameplate)

Converts balanced low impedance microphone input to line level input. Provides a simple means of using existing microphone level inputs for high level signals. It has a balanced bridging input (100,000 ohms). Attenuation is 50 db.

*NOTE: The output level of a 150 ohm source drops by 6 db when loaded with 150 ohms—which is the reason for the 6 db (approximate) difference in level between the response curves showing no output load and 150 ohm output load.

SHURE

PLUG-IN PROBLEM SOLVERS

"IN-LINE" MICROPHONE
ATTENUATORS, EQUALIZERS, AND ADAPTERS



Solve sound problems without time-consuming, permanent rewiring or reconNECTIONS! Shure "In-Line" microphone attenuators, equalizers and adapters are perfect for on-the-scene corrections and modifications in response and performance of microphones and sound systems.

They plug in and unplug in seconds to give you instant modifications!

The cost of Shure Plug-In Problem Solvers is so low, you can afford to keep them handy for all installations and applications.

COMMON APPLICATIONS

Input: Three pin female Cannon XL type connector*

Output: Three pin male Cannon XL type connector.*

Pin Connections: Balanced line in and out, Pin 2 and 3 "hot," Pin 1 shield and case.

Impedance: Units are intended to be driven from 150 ohm source except for: A15LA — up to 10,000 ohms; A15PR — any impedance.

When terminated with other impedances from 25 to 1,000 ohms, the level and response characteristics of all other units closely resemble those obtained with 150 ohm termination.

Case Material: Steel with professional grey finish.

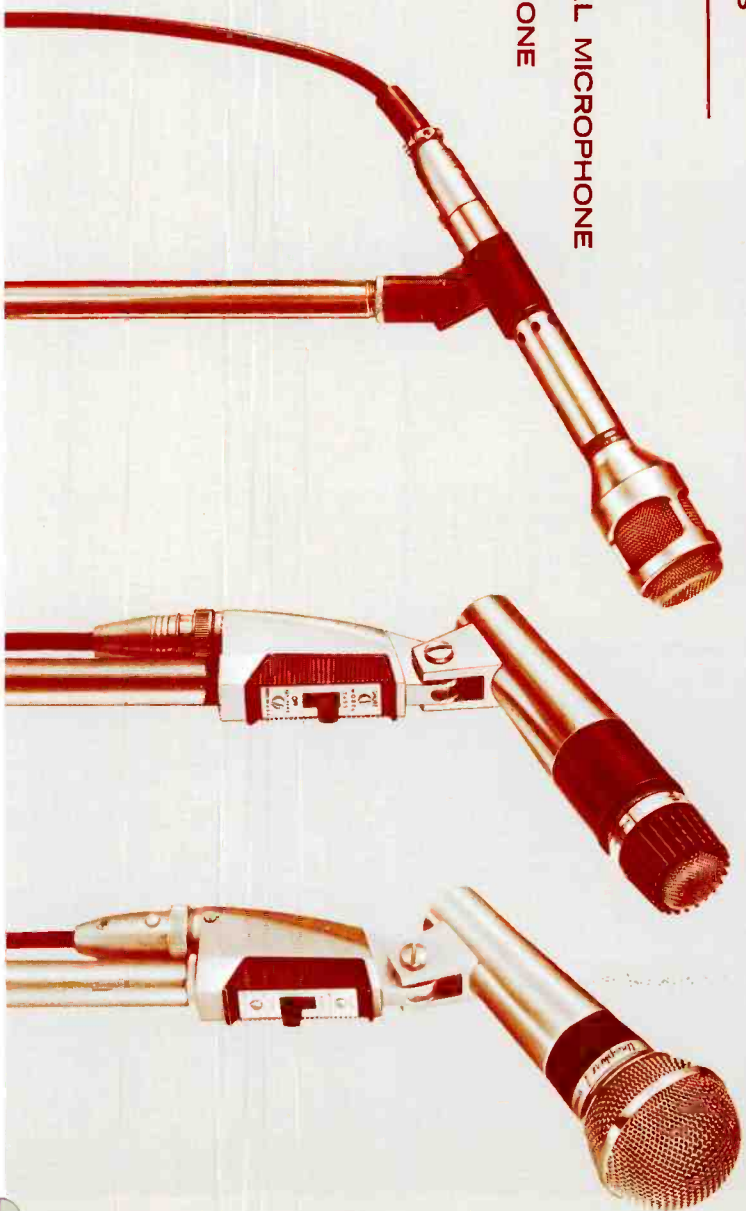
Dimensions: 1 1/2" long, 3/4" diameter.

*A15A and A15PR are symmetrical and can be used in either direction.

For information on the complete Shure lines of:

MICROPHONES

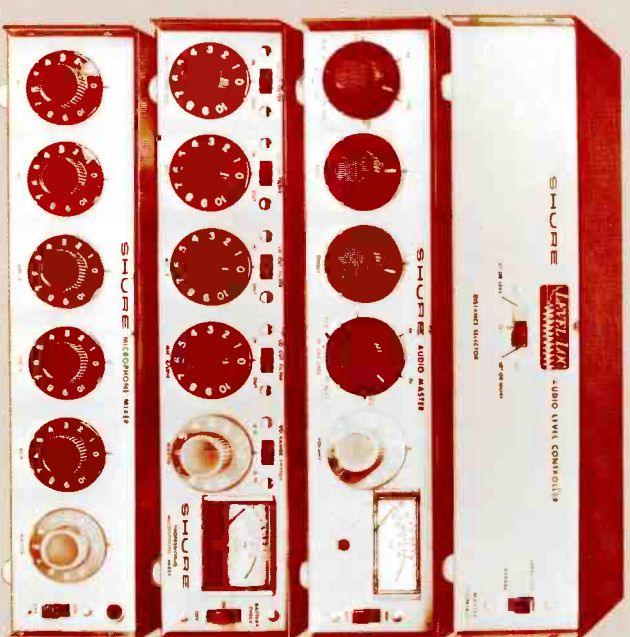
Write for Shure
PROFESSIONAL MICROPHONE
OR
P.A. MICROPHONE
CATALOG



MIXERS

and related circuitry
products

Write for the Shure
MIXER & RELATED
PRODUCTS CATALOG



MICROPHONE STANDS AND ACCESSORIES

**Model S39A Vibration Isolation Stand**

Ideal for use on table, desk, in the footlight area of a stage, for remote broadcasting (particularly for sporting events), conference tables, panels, and for all applications where vibration is a problem. The S39A provides maximum isolation from extreme mechanical vibrations by its capacity to absorb mechanical shock. The Model S39A Stand is designed for all Shure microphones and swivel adapter assemblies. An extension adapter is furnished to increase the height of certain microphones for cable connector clearance. Housing is textured black high impact plastic. Net Weight: 2 $\frac{1}{8}$ lbs.

**Model S33 Stands**

Modern design, heavy (2 $\frac{1}{2}$ lbs.) stand gives solid base for every professional microphone having standard $\frac{5}{8}$ " -27 thread. Low silhouette ideal for television use. Models S33B and S33P have screw that locks microphone to stand or can be omitted to offer unique quick-removal feature.

- Model S33B — Black Satin finish for general use
- Model S33P — Textured Charcoal finish to match Shure SM Series microphones
- Model S33C — With special mounting hardware for Model SM5 Boom Microphone



A25B



A57S

**Swivel Stand Adapters**

- Model A25B — Stand Adapter for Model SM 57 and other Shure 1" mounting diameter probe microphones. Tapped for $\frac{5}{8}$ " -27 stands. Lifetime locking swivel provides for tilting microphone 90° toward the source of sound.
- Model A57S — Stand Adapter for use with Shure $\frac{3}{4}$ " diameter microphones, Models 576 and 570S. Tapped for $\frac{5}{8}$ " -27 stands. Lifetime locking swivel provides for tilting microphone 90° toward the source of sound.
- Model A57B — Similar to A57S, but designed for use with Models 571 and 570.
- Model A57C — Similar to A57S, but designed for use with Model SM76.

"Flex-Grip" Lavalier Assembly

- Model A57L — For use with Shure microphones, Models 570, 570S, and 571. Adapter for mounting $\frac{5}{8}$ " -27 microphones and accessories to stands using $\frac{1}{2}$ " pipe thread available upon request at no charge.

For information on replacement microphone cartridges and cables for Shure Microphones or any other Service problem, write

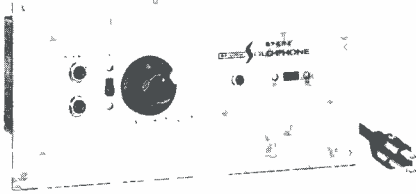
Service Department
SHURE BROTHERS INCORPORATED
8154 N. Ridgeway Avenue
Skokie, Illinois 60076



SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

**MODELS SA-1F AND SA-2FE SOLO-PHONE®
PANEL MOUNTED
STEREO HEADPHONE AMPLIFIERS**



The Shure Solo-Phone Stereo Amplifier is designed specifically for high fidelity listening with headphones. It provides sufficient amplification and equalization to use any fine quality magnetic phono cartridge (such as the Shure Stereo Dynetic). Additional inputs are available to plug in a multiplex FM tuner or a tape playback unit. Figure A shows a typical arrangement using a turntable with a magnetic cartridge and a tuner or a tape recorder.

The Solo-Phone is primarily designed for private high fidelity listening to records, FM, and tape in:

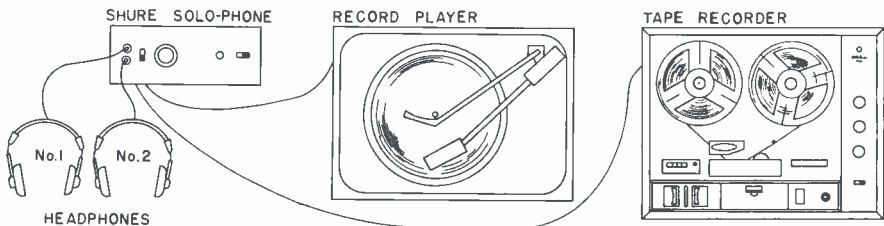
- School music libraries
- Classrooms
- Business and institutional libraries
- Music instruction schools
- Hospitals
- Religious reading rooms

The Solo-Phone can be used for special applications such as:

- Headphone isolation amplifier (monitoring while tape recording, etc.)
- Transcribing disc recordings using tape recorder.
- Ceramic microphone amplifier (connect to magnetic cartridge input).
- Special installations for the hard-of-hearing.
- Ideal for practicing—in private by players and students of electronic organs.

The SA-1F has:

- Underwriters Laboratory approval for use in commercial applications.
- A convenient 3 wire and 3 prong plug outlet (including ground) to meet stringent building code requirements.
- An 8 foot long line cord.



**TYPICAL SOLO-PHONE INSTALLATION
FIGURE A**

MOUNTING AND OPERATION

Mounting: The Model SA-1F and SA-2FE are recommended for panel or desk mounting where standard line cord and standard phono jack inputs are used. Refer to Figure B for panel mounting hole dimensions and panel cutout for amplifier. The Model SA-1F and SA-2FE Solo-Phones are not intended for wall mounting where various electrical codes require permanent wiring and connections. Make sure adequate clearance exists for input and output plugs.

Operation: A convenient switch on the front panel permits selection of program sources (Phono or Tape and Tuner). Two stereo headphone jacks are provided on the front panel, *permitting two sets of stereo headphones to be used at the same time.*

An On-Off switch and pilot light are provided on the front panel.

1. For the Phono position connect the signal leads from the phono cartridge to the jacks on the chassis marked "Magnetic Phono Input."
For the Tape or Tuner position, connect the signal leads from the tuner or tape player to the jacks on the bottom panel marked "Tape or Tuner Input." Attention must be given to the information in the phono, tape, or tuner equipment data sheets regarding their connections for "Right" or "Left" channel, phasing and grounding. Ground leads from the metal parts of the phono, tape, or tuner equipment, and the external ground may be connected to the screw below the magnetic phono input terminals.
2. Plug the headphones into the jack on the front panel. Set the selector switch to the desired function. (Phono or Tape and Tuner).
The volume control is a two-part control allowing separate adjustment of each stereo channel to achieve proper balance between channels. After each channel has been adjusted, simple over-all volume adjustments can be made by turning either part of the dual control.
3. Connect the Solo-Phone power line cord to the proper A.C. power outlet three wire receptacle. See Operating Voltage under Specifications.

The SA-1F is supplied with a three wire, three prong type plug. A two wire receptacle may be used by obtaining a standard three wire to two wire adapter. When using the adapters, be sure to make proper connections with the ground plug. These adapters are available at hardware stores and electrical supply houses.

The Model SA-2FE is supplied with a three-conductor power line cord, but no plug. The power line cord *plug* should be installed by a qualified person. The *brown* and *blue* leads of the power line cord should be connected to the "hot" or line voltage terminals. The *green/yellow* lead is the grounding conductor and should be connected to the ground or earth terminal of the plug.

In the Model SA-2FE either operating voltage is selected by a switch on the back panel. A switch lock plate is provided to prevent accidental switching to the 120-volt position. The Solo-Phone is shipped with operating voltage selector switch locked in the 210-240-volt position. The lock plate can be removed from the locking position by loosening (do not remove) the screw holding the lock plate, rotating the lock plate 90°, and re-tightening the screw.

CAUTION: Do Not Plug Power Line Cord of Model SA-2FE into 210-240 volts when switched to 120 volts.

4. A convenient 3 wire outlet is provided on the back of the SA-1F. This outlet is switched with the SA-1F power switch. The outlet can be used to supply up to 3 amperes to an associated tuner, record player, or tape recorder.

Guarantee: This Shure High Fidelity Component is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential that you carefully repack the unit and return it to the factory, or, if outside the United States, to your dealer or authorized Shure Service Center for repair. Our guarantee is voided if the basic assembly has been opened or subjected to unreasonably rough handling.

SPECIFICATIONS

Gain and Frequency Response:

Frequency	Phono Function*	Tape or Tuner Function
100 Hertz	+13 db +3,—2 db re: 1,000 Hertz level	+3,—2 db re. 1,000 Hertz level
1,000 Hertz	34 db ± 3 db 6 mv input pro- duces 300 mv output	7 db ± 3 db 150 mv input produces 340 mv output
10,000 Hertz	— 14 db ± 2 db re: 1,000 Hertz level	± 2 db re: 1,000 Hertz level

* Standard RIAA Equalization

Input Impedance: Phono — 47K ohms
Tuner —250K ohms

Range of Load: The unit shall operate satisfactorily using any earphones with impedances of 4 to 200 ohms. For optimum results, use earphones of 4 to 16 ohm impedance.

Channel Separation: 40 db minimum from 50 to 20,000 Hertz.

Power Output: 20 mw per channel.

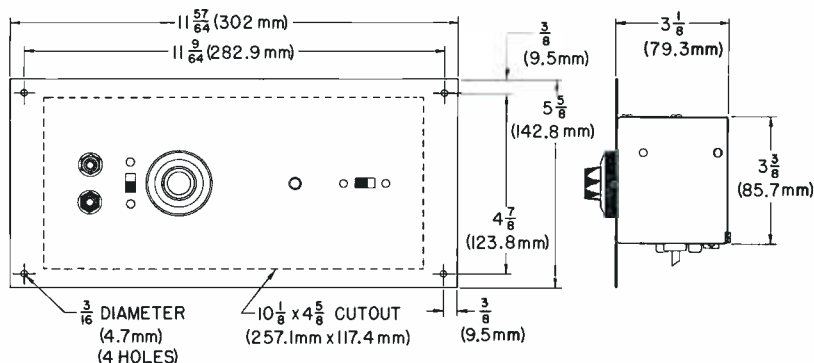
Total Harmonic Distortion: Less than 1%—driving both channels simultaneously to 8 ohm resistive load at 100 mv level.

Clipping Level: 400 mv. — at 1,000 Hertz and 8 ohm load.

Operating Voltage: Model SA-1F 120 volts ± 10% 50/60 Hertz.
Model SA-2FE 120 volts ± 10% 50/60 Hertz.
or
210-240 volts 50/60 Hertz.

Mounting: See Paragraph on Mounting and Operation.

Panel Finish: Satin Aluminum



OVERALL DIMENSIONS
FIGURE B



SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 ■ CABLE SHUREMICRO

MODELS M68, M68FC, M68FC-2E, M68-2, AND M68-2E MICROPHONE MIXERS



General: The Shure Models M68, M68FC, M68FC-2E, M68-2, and M68-2E are five channel, completely transistorized, portable microphone mixers for use with public address and tape recorders.

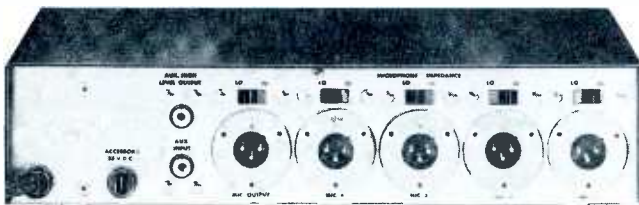
The Mixers Feature:

- Four microphone inputs with individual slide switches mounted on rear panel for selection of low impedance (balanced or unbalanced) or high impedance (unbalanced).
- One high level auxiliary input suitable for tape, tuner, and accessories.
- Individual volume control to balance each of the five inputs.
- A master volume control to simultaneously control level of all inputs.
- A high (unbalanced) or low impedance (balanced or unbalanced) microphone level output. Impedance selected with slide switch to match the microphone input of associated amplifier.
- A high impedance auxiliary output.
- A DC power supply jack. This jack supplies 28 volts DC for use with accessories such as the Model A68P Phono Preamplifier or it may be used as power input in connection with the Model A68B Battery Power Supply (Accessory).
- A facility for connecting two or more mixers together to obtain additional microphone inputs. For example, two mixers connected together will give a total of eight microphone inputs and one auxiliary input.
- U.S. Underwriters Laboratory approval for use in commercial applications. (Applies to Model M68, M68FC and M68-2).

INSTALLATION:

CONNECTION BETWEEN COMPONENTS

For balanced-line connection use two conductor, shielded, low capacity cable for connections. For unbalanced (high impedance), use single conductor, shielded, low capacity cable for connections.



REAR VIEW OF MODEL M68

GROUNDING

If there should be objectional hum, ground the metal chassis of the mixer to a good ground such as a metal frame of a wall outlet or a water or steam pipe.

INPUT CONNECTIONS

Microphones: A maximum of four low or high impedance dynamic or ribbon microphones may be connected to receptacles marked MIC. 1, MIC. 2, MIC. 3, MIC. 4. The inputs are designed for low impedance microphones with 25 to 250 ohms impedance or high impedance microphones. Both low impedance and high impedance microphones may be used simultaneously. The unit is not recommended for use with crystal or ceramic microphones. The impedance is selected by a slide switch above the input receptacle. The input receptacles of the M68, M68-2, and M68-2E are male Cannon XL-3-14 type (uses XL-3-11C mate, Shure Part 95A176). The input receptacles of the M68FC and M68FC-2E are female Cannon XL-3-13 type (uses XL-3-12C mate, Shure Part 95A227). See Figure "A" for low and high impedance connections to receptacle.

Auxiliary: The jack on the rear of the panel marked AUX. INPUT will accept output from a high impedance, high level source such as a tape recorder, AM-FM tuner, or output from the Model A68P Phono Cartridge Preamplifier (Accessory).

OUTPUT CONNECTIONS

Microphone: The receptacle marked MIC. OUTPUT is a dual impedance output selected by the switch above the receptacle. This output is the "Mixed" output of all the input sources and is designed to work into a 25 to 600-ohm line or input, or into a high impedance amplifier or tape recorder microphone input. The receptacle is a male three-pin Cannon XL-3-14 type connector. See Figure "A" for output receptacle connections.

Auxiliary: The phono jack marked AUX. HIGH LEVEL OUTPUT is a high impedance high level output designed primarily to feed a power amplifier requiring .5 to 2 volts or the auxiliary or tuner input to an amplifier or tape recorder.

Accessory 28-volt DC: This rear panel jack provides 28 volts DC for accessories such as the Model A68P Phono Cartridge Preamplifier. The jack is also used as a power input when using the Model A68B Battery Power Supply (Accessory).

OPERATION

Power: Connect the Microphone Mixer power line cord to the proper A.C. power outlet. See Operating Voltage under Specifications. (All Mixers except the M68-2E and M68FC-2E come with a standard two-conductor AC plug attached).

The Models M68-2E and M68FC-2E are each supplied with a three-conductor power line cord, but no plug. The power line cord plug should be installed by a qualified person. The *red* and *black* leads of the power line cord should be connected to the "hot" or line voltage terminals. The *green* lead is the grounding conductor and should be connected to the ground or earth terminal of the plug.

If a different power line cord plug is required on the Model M68-2 Mixer, this plug should be installed by qualified service personnel.

In the Models M68-2 and M68-2E, either operating voltage is selected by a switch on the back panel. A switch lock plate is provided to prevent accidental switching to the 105-130-volt position. These microphone mixers are shipped with operating voltage selector switch locked in the 210-240-volt position. The lock plate can be removed from the locking position by loosening (do not remove) the screw holding the lock plate, rotating the lock plate 90°, and re-tightening the screw. The power ON-OFF switch is on the front panel.

CAUTION: Do Not Plug Power Line Cord of Models M68-2 or M68-2E into 210-240 volts when switched to 105-130 volts.

Volume Controls: The Master Gain Control and the individual gain controls for each of the five channels are identified on the front panel.

The individual gain controls should generally be set near maximum (fully clockwise) and the master gain control adjusted to required output. Individual channel gain controls not being used should be kept at minimum gain (fully counter-clockwise).

Identifying Controls: Pressure sensitive adhesive labels are supplied with the Mixers as a means of identifying the control and recording the control position when optimum results have been obtained. The labels are easily removed when their use is no longer required.

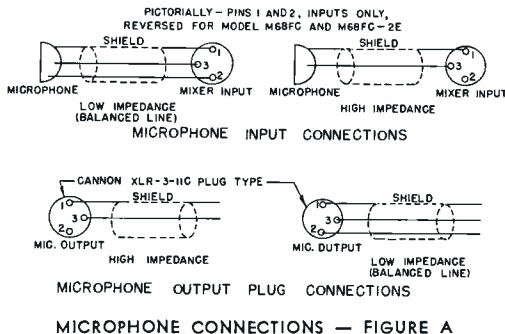
CONNECTING TWO UNITS TOGETHER

Two M68 Mixers may be combined to give a total of eight microphone channels plus an auxiliary input.

- A. Connect the AUX. HIGH LEVEL OUTPUT of UNIT 1 to the AUX. INPUT OF UNIT 2.
- B. Connect microphones to mixers and set each microphone input control to #0 position.
- C. Take the output signal for recorder or P.A. amplifier from the appropriate output jack on UNIT 2.
- D. Set Master Control UNIT 1 to position #10.
- E. Set AUX. Control on UNIT 2 to position #4.
- F. The Master Control on UNIT 2 is now the Master for all inputs.
- G. Advance Master Control (UNIT 2) to about #5 position and adjust individual microphone controls for proper level. If overall gain is too low or too high the Master Control (UNIT 2) may be adjusted.
- H. If an input to the auxiliary channel is needed, such as for a tape recorder or tuner, use AUX. input on UNIT 1. Use AUX. Control on UNIT 1 for level adjustment of the AUX. source. The master gain control for the entire system is the Master Control on UNIT 2.

The Model A68S Stacking Kit includes stacking brackets for attaching the two mixers firmly together plus the required inter-connecting cable. The cable only, is available separately under the Model A68SC.

Guarantee: The Shure Mixer is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential that you carefully repack the unit and return it to the factory or, if outside of the United States, to your dealer or authorized Shure Service Center for repair. Our guarantee is voided if the basic assembly has been opened or subject to unreasonably rough handling.



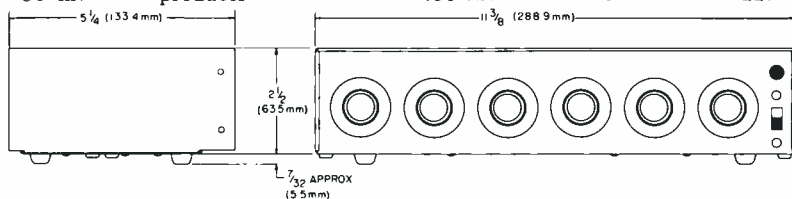
OPTIONAL ACCESSORIES

Battery Power Supply.....	Model A68B
Output Cable Kit.....	Model A68C
Locking Panel.....	Model A68L
Phono Preamp.....	Model A68P
Rack Panel Kit.....	Model A68R
Stacking Kit.....	Model A68S
Interconnecting Cable.....	Model A68C
Attaché Case.....	Model AC60

SPECIFICATIONS

Gain: At 1,000 Hz. (cps).

Input	Outputs		
	Low Imp. Mic.	High Imp. Mic.	High Imp. Aux.
Low Imp. Mic.	+6 db	+30 db	+57 db
.5 mv produces	1.0 mv	15.5 mv	355 mv
High Imp. Mic.	-16 db	+8 db	+35 db
5 mv produces	.78 mv	12.7 mv	285 mv
AUX.	-38 db	-14 db	+13 db
50 mv produces	.64 mv	10 mv	227 mv



OVER ALL DIMENSIONS — FIGURE B

Frequency Response: The frequency response is flat ± 3 db from 40 Hz. (cps) to 20,000 Hz. (cps).

Hum-Noise: 70 db below rated output.

Equivalent Input Noise: 150 ohm source, 123 db below 1 volt.

Input Impedance: Microphone inputs suitable for high or low impedance dynamic and ribbon microphones. Auxiliary—50,000 ohms.

Recommended Load Impedance:

Low Impedance Microphone	25 to 600 ohms
High Impedance Microphone	20,000 ohms or greater
Auxiliary High Impedance	50,000 ohms or greater

Distortion: Less than 1% total Harmonic Distortion when low impedance microphone output is at 20 mv level, high impedance microphone output is at 200 mv level, and Aux. high impedance output is at 2.0 volt level.

Output Clipping Level:

Output	Min. Clipping Level
Mic. Low Impd.	60 mv
Mic. High Impd.	.85 volts
Aux. High Impd.	4.0 volts

Operating Voltage:

- Models M68 and M68FC: 105-130 volts 50/60 Hz.
- Models M68-2 and M68-2E: 105-130 volts 50/60 Hz. or 210-240 volts 50/60 Hz.
- Model M68FC-2E: 210-240 volts 50/60 Hz.

Case: Painted Metal.

Dimensions: See Figure B.

Net Weight: 4 pounds.

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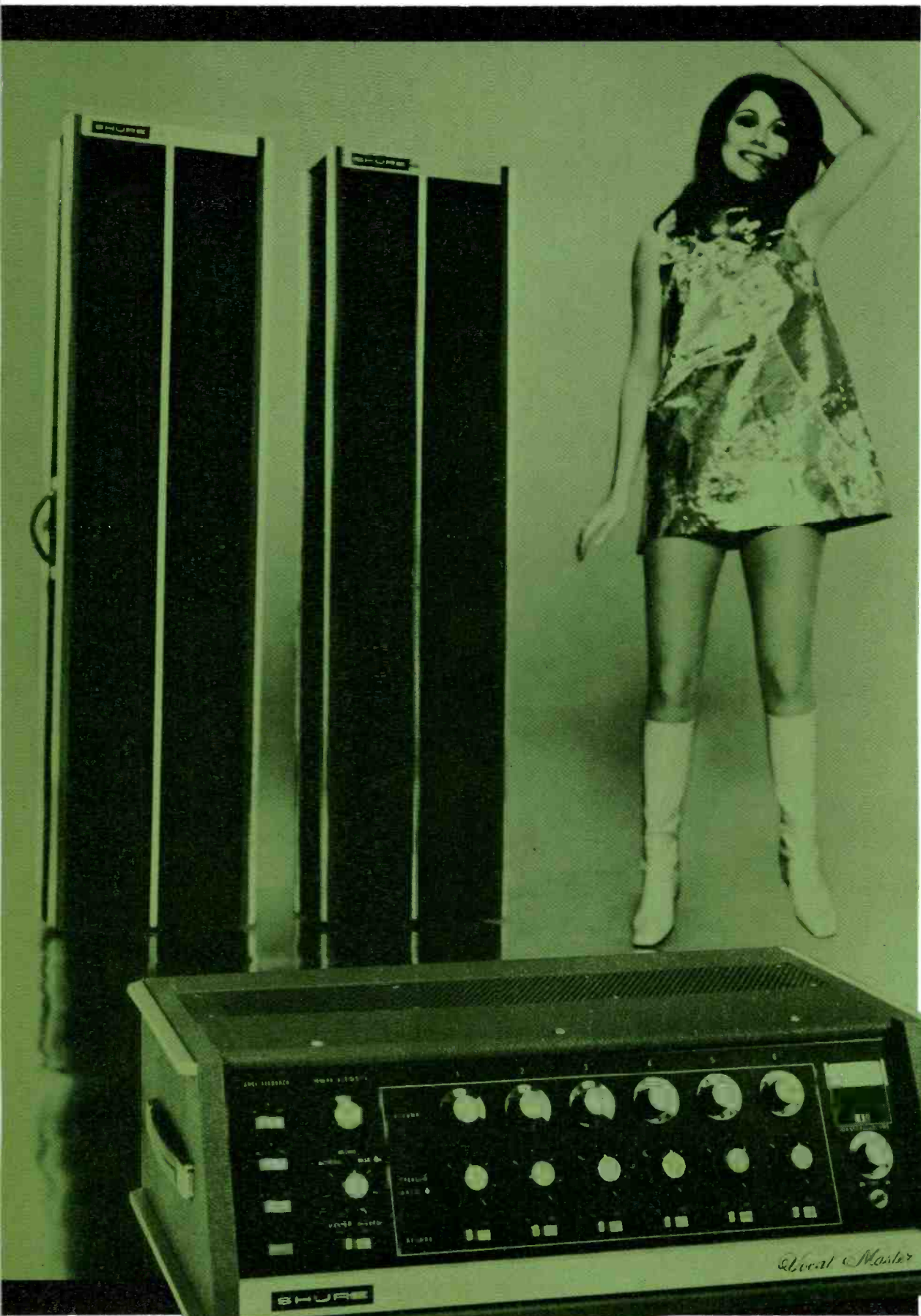
VOCAL MASTER

VOCAL ARRANGEMENT & PROJECTION SYSTEMS



• **Amplifier Consoles**
• **Booster Amplifiers**
• **Speaker Columns**
• **Monitor Speakers**
• **Accessories**





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UNMATCHED PENETRATING POWER UNMATCHED CONTROL OF VOCAL EFFECTS UNMATCHED CONTROL OF FEEDBACK FOR RECORDING STUDIO CONTROL IN LIVE PERFORMANCES

BUILT FOR TODAY'S VOCAL MUSIC

In this age of contemporary music, performers are faced with a multitude of sound system problems, from balancing the vocalists against super-amplified instruments, to the projection of complex blends of lyrics and music to large audiences, without generating feedback—and while reaching the listeners in back without overwhelming those in front.

Calling on over forty years experience in the field of microphone design and electro-acoustics, Shure developed the incomparable Vocal Master Vocal Arrangement and Projection Systems . . . the first TOTAL voice projection systems designed to meet ALL of the vocalist's "in concert" amplification, projection, arrangement, balance, and anti-feedback requirements!

Top-name groups such as The Association, Sergio Mendes & Brasil '66, The Rascals, and The 5th Dimension have made the Vocal Master their official vocal projection system on tour.

The Vocal Master has solved difficult, almost insurmountable sound problems in outdoor theatres, civic auditoriums, college gymnasiums and fieldhouses, night clubs, theatre-restaurants, ball parks, shopping centers, hotel meeting rooms, and even outdoor stadiums—from coast to coast!

DESIGNED TO COVER THE LARGEST AUDIENCES

In every measure of effective sound power, both in the laboratory and in actual performance the Vocal Master is superior in every respect to any other sound system of equal power for projecting the vocalist with complete intelligibility and without "clipping" or deterioration of loudness - - - or quality! !

Numerical power ratings alone can't begin to describe the effective vocal penetrating power of the Shure Vocal Master. Raw power and brute force can make plenty of noise, but only the highly refined circuitry, singular completeness of controls, and unique speaker design of Shure's Vocal Projection System give you *useable* penetrating power—the power to get your vocals out to *every* member of the audience with *unprecedented intelligibility*, and without overpowering people sitting close to the speakers!

Extensive laboratory and field tests have been conducted to measure the penetrating power of the Shure Vocal Master, as compared to conventional sound systems. With equal power applied to the speaker columns of the Vocal Master and to other systems' speakers, *sound pressure* (i.e. loudness) was measured at specified distances from the loudspeakers. While the volume of ordinary systems dropped sharply as the distance from their loudspeakers was increased, the Vocal Master maintained greater sound pressure over the entire distance—and at 200 feet delivered nearly twice the effective penetrating power of conventional systems!

BUILT FOR FULL SOUND CONTROL

With the Vocal Master, you give yourself the same degree of control and security as when you're in the hands of a recording studio sound engineer who balances and mixes you into the total sound from separate tape tracks!

It is a new musical tool with which vocalists and groups can achieve highly individualized effects to enhance their performances. You can "play" the Vocal Master like an instrument because it gives you all the necessary controls to alter or augment vocal characteristics. You're not bound by the inherent limitations of a musical instrument's sound system, or an inadequate built-in "house" system, or a P.A. system designed for speaking voices.

You can compensate for varying room acoustics, different instrumental backings, different balances when singing as a group.

The Vocal Master gives you complete, individual *selective* volume and vocal effect control over six separate microphones. Lead singers can be made to stand out. Weak voices can be balanced to hold their own against more powerful voices. Part of the group can use the Vocal Master's unique, variable "tone-tempered" reverb (which enables you to go from a lush, full resonance, to a piercing, crisp sound—or any step in between), while other members of the group come through "straight." And, several different effects can be mixed into a blended "new" sound.

Unlike other voice projection systems, the Vocal Master's anti-feedback circuitry guards against feedback even when the reverb is used.

ENGINEERED FOR FEEDBACK CONTROL

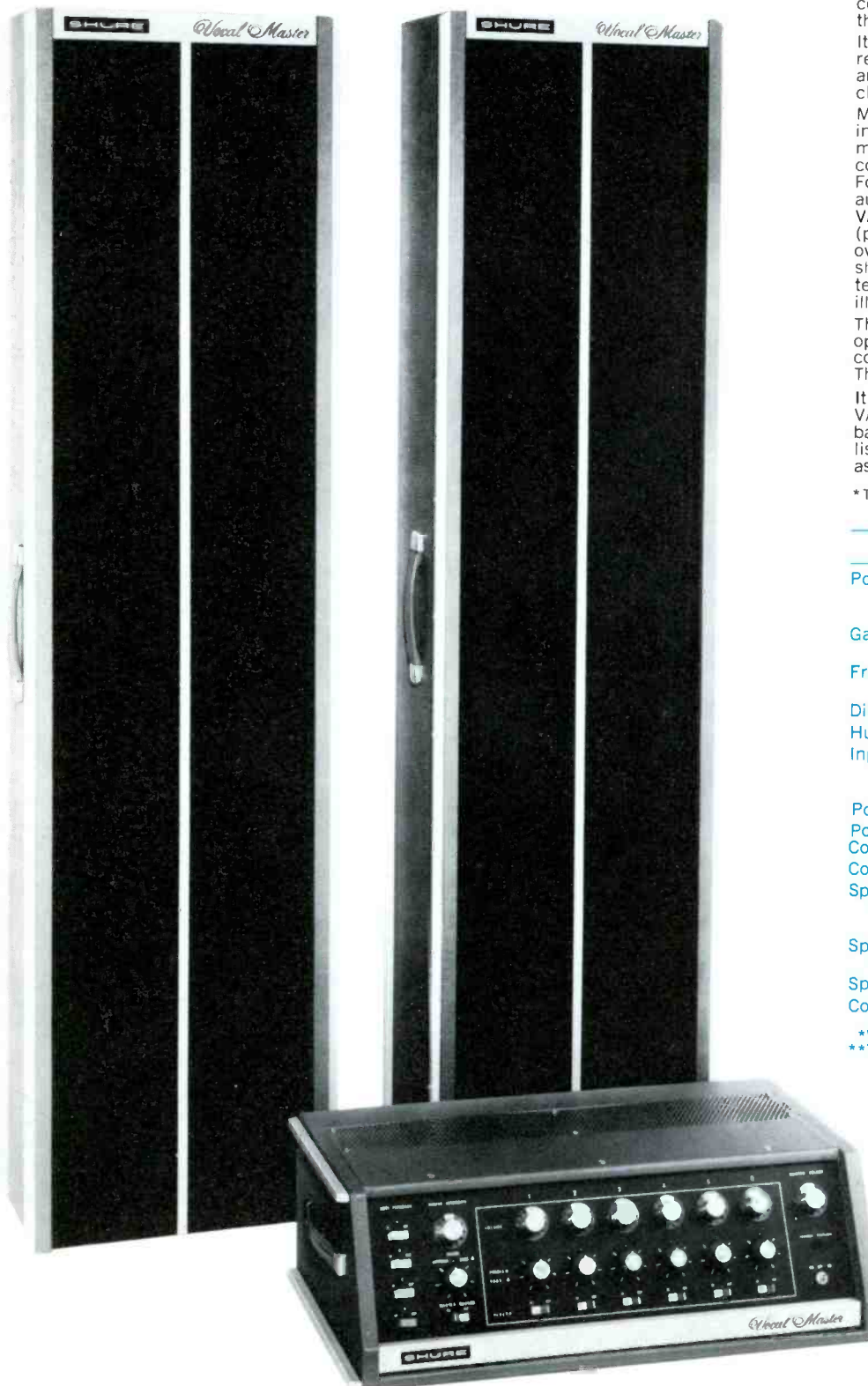
Four anti-feedback switches, each operating in a sub-range of the total audio spectrum, help you to overcome feedback, the greatest enemy of a good performance. These switches control four separate feedback-frequency filters.

BUILT FOR RUGGEDNESS AND RELIABILITY

Advanced design concepts throughout assure long, trouble-free performance with the Vocal Master. Space-age solid-state circuitry, coupled with thermal overload, open-circuit-proof, and short-circuit-proof circuits, protect the Vocal Master electrically. Outside materials are especially selected for resistance to scuffing and damage, such as *solid* aluminum siderails, super-tough vinyl coverings, and heavy duty hardware throughout.

 **SHURE** **VOCAL MASTER**
VOCAL ARRANGEMENT & PROJECTION SYSTEMS

VA300



Vocal Master Model VA300

This is the Vocal Master that started it all, bringing top-name groups like The Association, The 5th Dimension, Carpenters, and Sergio Mendes & Brasil '66 around to the Vocal Master sound! The VA300 is a complete vocal arrangement and projection system, featuring a VA300-C Control Console (with high impedance microphone inputs) and two VA300-S Speaker Columns (see page seven), especially designed for Penetrating Power over the entire vocal range.

The VA300 delivers up to 300 watts of available vocal power and is conservatively rated at 100 watts RMS* continuous! The console has six input channels, each with its own *individual* volume, treble, bass, and reverb in-out (and auxiliary echo) controls.

Each input channel accepts a standard phone plug, and has a slide selector switch for either microphone or instrument for best sound amplification.

The VA300 accepts all high-quality, high impedance dynamic or ribbon microphones (a special plug-in accessory transformer, shown on the back page, adapts the VA300 for use with low impedance microphones).

It can also be used with electrified instruments, tape recorders, echo devices, remote reverb switches, and any Shure Microphone Mixers (when additional input channels are desired).

Master controls, which may be used without disturbing individual settings, include a master volume control, master reverb in-out switch, master reverb intensity control, and master reverb treble and bass controls. Four anti-feedback switches, covering the complete audio range, give you additional sound control. The VA300 also has a three-position ON-OFF switch (polarity-reversing to minimize hum) and a thermal overload indicator light (special circuitry automatically shuts the unit off if unusually high circuit damaging temperatures are reached). The entire control panel is illuminated for use on dimly lit stages.

The VA300-C Control Console is short-circuit-proof and open-circuit-proof. If it is switched on without a speaker column connected, the console will not be damaged. This is *exclusive* with the Shure Vocal Master.

It comes complete with interconnecting cables. The VA300 is guaranteed for one year (as stated on the back page) and is Underwriters' Laboratories, Inc. listed, and is listed by the C.S.A. Testing Laboratories as approved.

* To an eight-ohm load (2 VA300-S speaker columns)

VA300 SPECIFICATIONS

Power Output	100 Watts R.M.S. Continuous** 300 Watts Peak Available Voice Power**
Gain	60 db ("Mic." Input Level)** 49 db ("Inst." Input Level)**
Frequency Response	Flat ± 2 db from 40 Hz (C.P.S.) To 20,000 Hz (C.P.S.) (Typical)
Distortion	5% Maximum at Rated Output
Hum and Noise	60 db Below Rated Output
Input Impedance	60,000 Ohms ("Mic." Input Level) 120,000 Ohms ("Inst." Input Level)
Power Consumption	400 Watts Maximum
Power Requirements	120 V. AC, 60 Hz
Console Weight	38 Lbs.
Console Dimensions	8 $\frac{3}{4}$ " H. x 25" W. x 14 $\frac{3}{4}$ " D.
Speaker* Column	
Frequency Range	50 Hz (C.P.S.) To 10,000 Hz (C.P.S.)
Speaker* Column Impedance	16 Ohms
Speaker* Column Wt.	70 Lbs. (Including Cable)
Column Dimensions	62 $\frac{3}{4}$ " H. x 15 $\frac{3}{4}$ " W. x 8 $\frac{3}{4}$ " D.

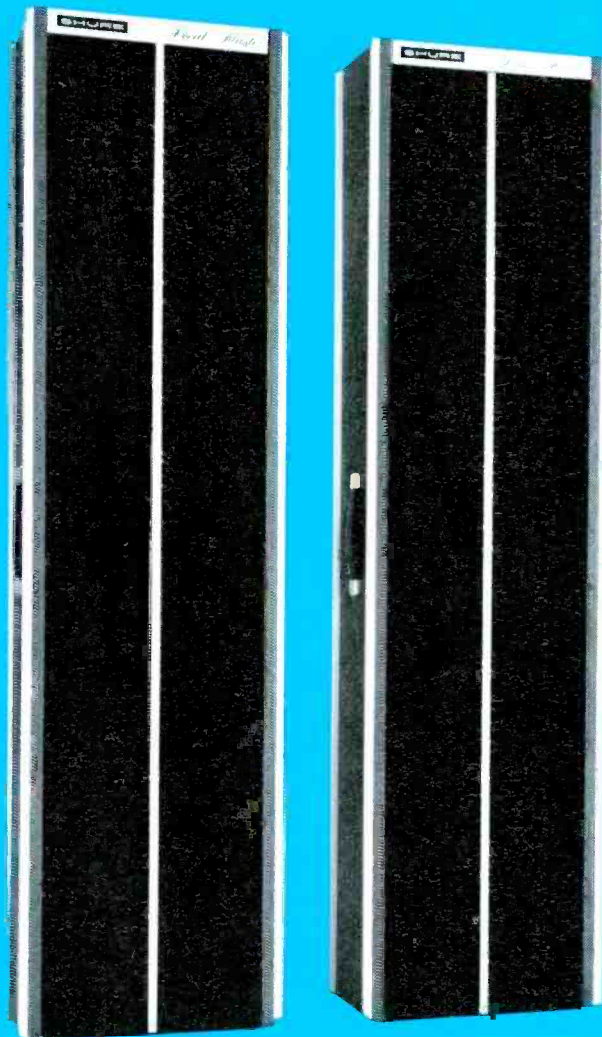
*VA300-S Speaker

**To an eight-ohm load (2 VA300-S speaker columns)

516

VA302

VA302E



The New Professional Vocal Master Model VA302 Series

Built for the professional with many of the same professional features which have made the VA300 so popular, the Model VA302 is the newest and finest of the Vocal Master Vocal Arrangement and Projection Systems. In addition to all the performance and sound control features found in the VA300 Vocal Master (left), the VA302 provides additional features to meet the most exacting professional requirements. Among them, a true V.U. meter that follows the program material and gives positive reference to actual sound output, a two-position V.U. meter sensitivity switch for high and low output levels, female Cannon connector inputs, microphone level output (with impedance selector switch) and low-impedance inputs that allow longer microphone cable runs.

The VA302 consists of a VA302-C Control Console and two VA300-S Speaker Columns (see page seven). Like the VA300 Vocal Master, it delivers up to 300 watts of peak available vocal power and is rated at 100 watts RMS* continuous. Its extraordinary penetrating Power and unusually smooth response throughout the entire vocal range are identical to those characteristics of the VA300 Vocal Master.

The VA302 has six input channels, each channel with its own volume, treble, bass, and reverb in-out (and auxiliary echo) controls. Each channel is further adjustable by its own attenuator switch for optimized amplification characteristics of various program material.

The VA302 may be used with any high-quality, low-impedance dynamic, ribbon, or condenser microphone (an accessory transformer, shown on back page, adapts the VA302 for use with high-impedance microphones). The VA302 comes complete with interconnecting cables and three-conductor line cord.

The master controls of the VA302 may be used without disturbing the individual input settings. These include a master volume control that raises or lowers the volume of all channels simultaneously, a master reverb intensity control, a master reverb in-out switch, and master reverb treble and bass controls. Four anti-feed-back switches provide effective feedback control. Exclusive built-in protection against short circuits, open circuits and thermal overload guards the VA302 against electrical or heat damage. The entire front panel of the VA302 is illuminated for use on dimly lit stages.

It is guaranteed for one year (see back page). The Model VA302 is Underwriters' Laboratories, Inc. listed, and is listed by the C.S.A. Testing Laboratories as approved.

*To an eight-ohm load (2 VA300-S speaker columns)

VA302 SERIES SPECIFICATIONS

Power Output	100 Watts R.M.S. Continuous** 300 Watts Peak Available Voice Power**
Gain	80 db (Input Attenuator Out)** 65 db (Input Attenuator In)**
Frequency Response	Flat ± 2 db from 40 Hz (C.P.S.) To 20,000 Hz (C.P.S.) (Typical)
Distortion	5% Maximum at Rated Output
Hum and Noise	60 db Below Rated Output
Input Impedance	Suitable for microphones having an impedance of 50 to 600 ohms
Power Consumption	400 Watts Maximum
Power Requirements	Model VA302—120 V. AC, 60 Hz Model VA302E—120 or 240 V. AC, 50-60 Hz
Console Weight	41 Lbs.
Console Dimensions	8 $\frac{3}{8}$ " H. x 25" W. x 14 $\frac{3}{4}$ " D.
Speaker* Column Frequency Range	50 Hz (C.P.S.) to 10,000 Hz (C.P.S.)
Speaker* Column Impedance	16 Ohms
Speaker* Column Wt.	70 Lbs. (Including Cable)
Column Dimensions	62 $\frac{3}{4}$ " H. x 15 $\frac{3}{4}$ " W. x 8 $\frac{3}{4}$ " D.

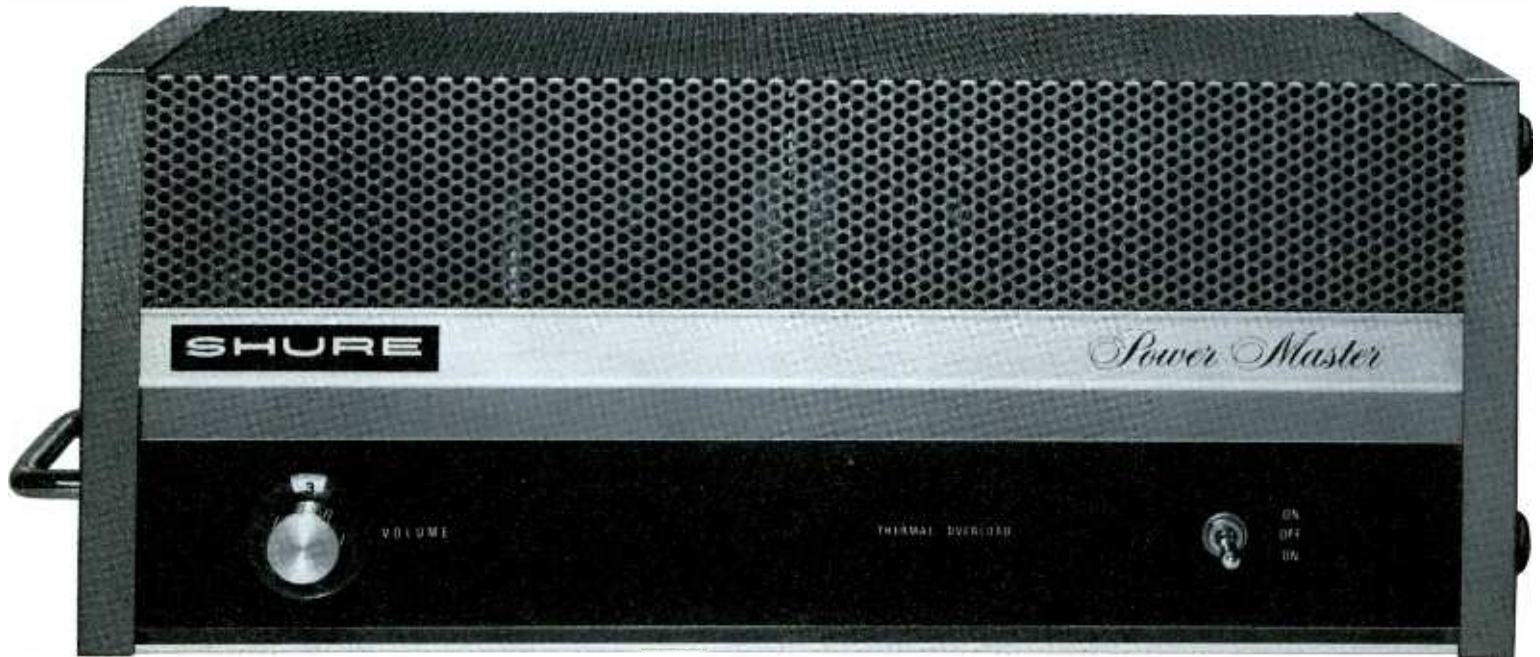
*VA300-S Speaker

**To an eight-ohm load (2 VA300-S speaker columns)



PM300

PM300E



Power Master Booster Amplifier Model PM300 Series

The Power Master Booster Amplifier is recommended for all of these tough projection situations: (1) covering extra-large stadiums and auditoriums; (2) covering adjoining rooms; (3) increasing reserve power; (4) reaching higher sound levels, as in "hard rock" performances; (5) when an on-stage monitor system is required.

Designed especially for use in conjunction with the Vocal Master systems, the Model PM300 Power Master drives two *additional* VA300-S speakers and adds 100 watts RMS* of fully useable, *extra* power to either the VA300 or VA302 Vocal Master systems. Its circuitry is identical to the superb amplifier section of the Vocal Master consoles, with the same silicon transistors and solid state devices producing the same smooth, undistorted response throughout the entire vocal range. Used in conjunction with the Vocal Master it gives higher levels of power, greater coverage capability and the remarkable versatility to handle *any* voice projection assignment the performer or sound installer can give it!

The Power Master is easy to connect and operate. Simply connect it to the Vocal Master console and plug in additional speakers. Only two controls: a three-position ON-OFF switch (polarity-reversing to minimize hum); and a volume control. When connected, the Power Master "follows"—or duplicates—all the Vocal Master's sound control settings.

As with the Vocal Master systems, the Power Master circuitry is protected against short circuits, open circuits, and thermal overload. A front-panel

thermal overload indicator light glows when overload temperatures are reached.

The Power Master has standard phone jack inputs and outputs. It is guaranteed for one year. The Power Master is Underwriters' Laboratories, Inc. listed and listed by the C.S.A. Testing Laboratories as approved.

*To an eight-ohm load (2 VA300-S speaker columns)

PM300 SERIES SPECIFICATIONS

Power Output	100 Watts R.M.S. Continuous* 300 Watts Peak Available Voice Power*
Gain	30 db*
Frequency Response	Flat - 2 db from 40 Hz (C.P.S.) to 20,000 Hz (C.P.S.)
Distortion	5% Maximum at Rated Output
Hum and Noise	80 db Below Rated Output
Input Impedance	40,000 Ohms
Power Consumption	400 Watts Maximum
Power Requirements	Model PM300—120 V. AC, 60 Hz Model PM300E—120 or 240 V. AC, 50-60 Hz
Weight	22 Lbs.
Dimensions	7" H. x 16 $\frac{1}{8}$ " W. x 9" D. (less handle and feet)

*To an eight-ohm load

SHURE

VA300-S

VA301-S

Speaker Columns Model VA300-S

These highly refined, ingeniously designed speakers play a critical role in generating the tremendous Penetrating Power of the Vocal Master systems. The VA300-S Speaker Columns have a response covering the entire vocal range. Special tuned rear ports deliver a highly directional output and heightened Penetrating Power. This directional output characteristic also allows you to "aim" the VA300-S Speaker Columns away from the microphones to reduce the dangers of feedback.

Each speaker column utilizes two 10" speakers and four 8" speakers for a total speaker cone area of 358.14 square inches. Selective, balanced use of these speaker cones gives you the "crispness" and clarity of smaller cones along with the vocal "body" of larger cones. Penetrating Power is virtually uniform over a 140° angle (in the horizontal) and a 65° angle (in the vertical).

The VA300-S Speaker Columns are easy to connect, and when used with the supplied cables, they are always automatically in phase; performers never lose bass response because of out-of-phase speakers.

The VA300-S is built to withstand the roughest, most grueling punishment. Solid, ¾" plywood cabinetry is covered with scuff-resistant vinyl and braced with edge-protecting solid aluminum siderails. Complete with heavy duty retractile handles and 50-foot connecting cables.

Monitor Speaker Model VA301-S

New from Shure—and developed especially for feedback-free monitoring applications right on stage. The VA301-S is built on similar principles as the VA300-S, but is approximately one-half the size. It incorporates one 10" speaker and two 8" speakers for a total speaker cone area of 179.07 square inches.

The VA301-S is directional, and features a built-in volume control that gives the performing group tight control over its output—and tight control over feedback. This Monitor Speaker can be used right on stage, placed so the group can hear themselves.

The VA301-S is constructed with the same exceptional ruggedness as the VA300-S and comes complete with 50-foot connecting cables.



VA300-S

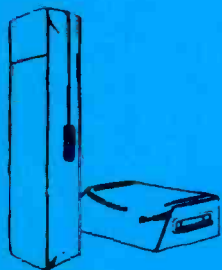


VA301-S



VOCAL MASTER

ACCESSORIES



SOFT COVERS

Heavy-duty traveling covers protect the surface of units from scratches and wear. All-around zip-fasteners make them easy to put on and take off.

MODEL A3PC COVER SET. Consists of one console cover and two speaker covers.

MODEL A3PC-C Console Cover only

MODEL A3PC-S Speaker Cover only

MODEL A31PC-S Monitor Speaker Cover



FOLD-UP CONSOLE STAND

Rigid welded tubular steel construction. Gleaming chrome plated. Stable. Folds quickly for easy portability. With ball-bearing rubber-tired casters.

MODEL A3S-C CONSOLE STAND.



LOW IMPEDANCE TRANSFORMERS

Enables you to use low impedance dynamic or ribbon type microphones with the VA300 Vocal Master. Plugs directly into console. Order one for each microphone.

MODEL A95P. Low impedance termination: male Cannon. High impedance termination: phone plug.

MODEL A95FP. Low impedance termination: female Cannon. High impedance termination: phone plug.

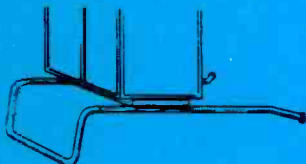


HIGH IMPEDANCE TRANSFORMERS

Enables you to use high impedance dynamic or ribbon type microphones with the VA302 Vocal Master. Plugs directly into console. Order one for each microphone.

MODEL A95A. High impedance termination: Amphenol type MC1M. Low impedance termination: male Cannon.

MODEL A95F. High impedance termination: Amphenol type MC1M. Low impedance termination: female Cannon.



SPEAKER STAND

Provides added stability for speaker column, plus tilting action. Order one stand per column.

MODEL A3S-S SPEAKER STAND.

RACK PANEL KIT

Standard 19" Audio Equipment Rack Panel Brackets for use with the PM300 and PM300-E Power Masters. Matching Gray finish. (To be installed by qualified service personnel.)

MODEL P300R RACK PANEL KIT.

GUARANTEE

The Shure Vocal Master Systems and Power Master Booster Amplifier are guaranteed to be free from electrical and mechanical defects for a period of one year from the date of shipment from the factory, provided all instructions are complied with fully. The guarantee does not cover damage or failure of case, mechanical, electromechanical, or electronic parts due to abuse or neglect. Entire guarantee is void if amplifier or speaker cases are opened or tampered with by anyone not authorized to service these units by Shure Brothers Inc.

SERVICE

If information or service should be required, contact your local Shure Vocal Master dealer explaining your difficulty in detail. In addition, the Shure factory service department will be ready to assist you immediately upon request.

Always use a Shure Microphone — your vital link with your audience. If you do not have a Shure Microphone Catalog, write to:

SHURE BROTHERS INC.
222 Hartrey Ave., Evanston, Illinois 60204

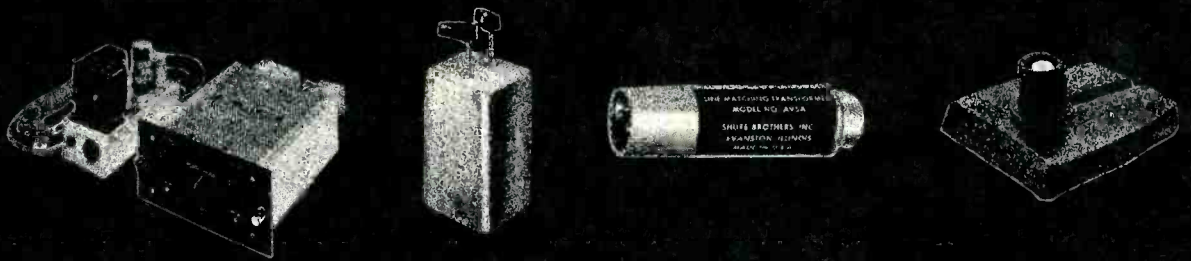
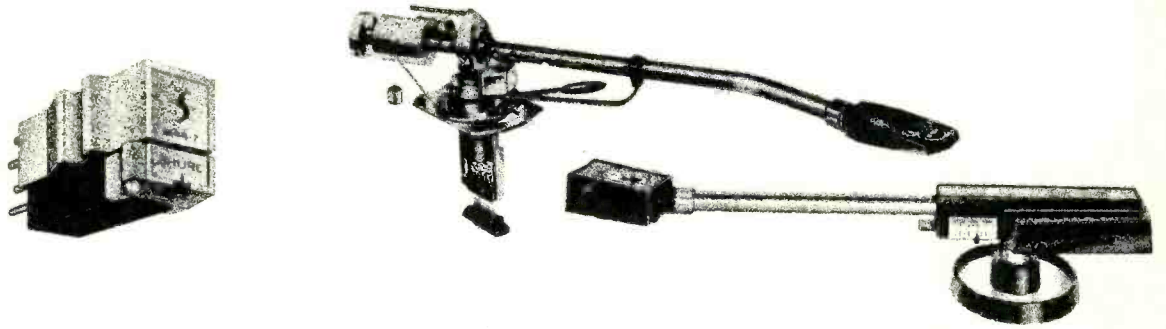
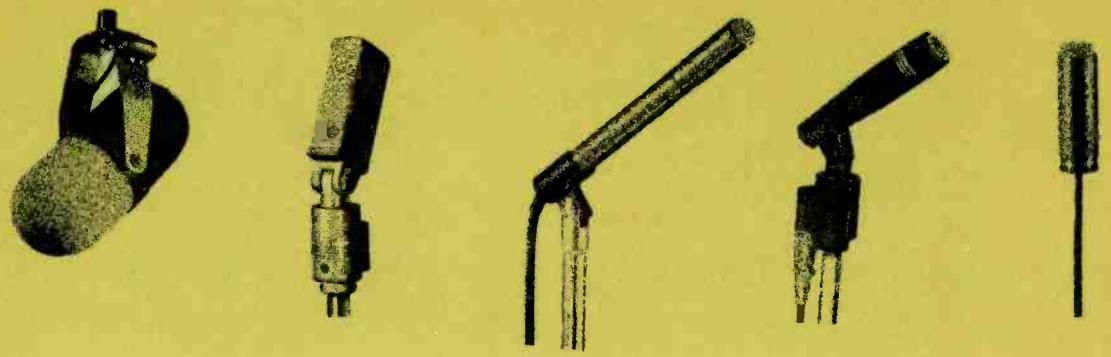
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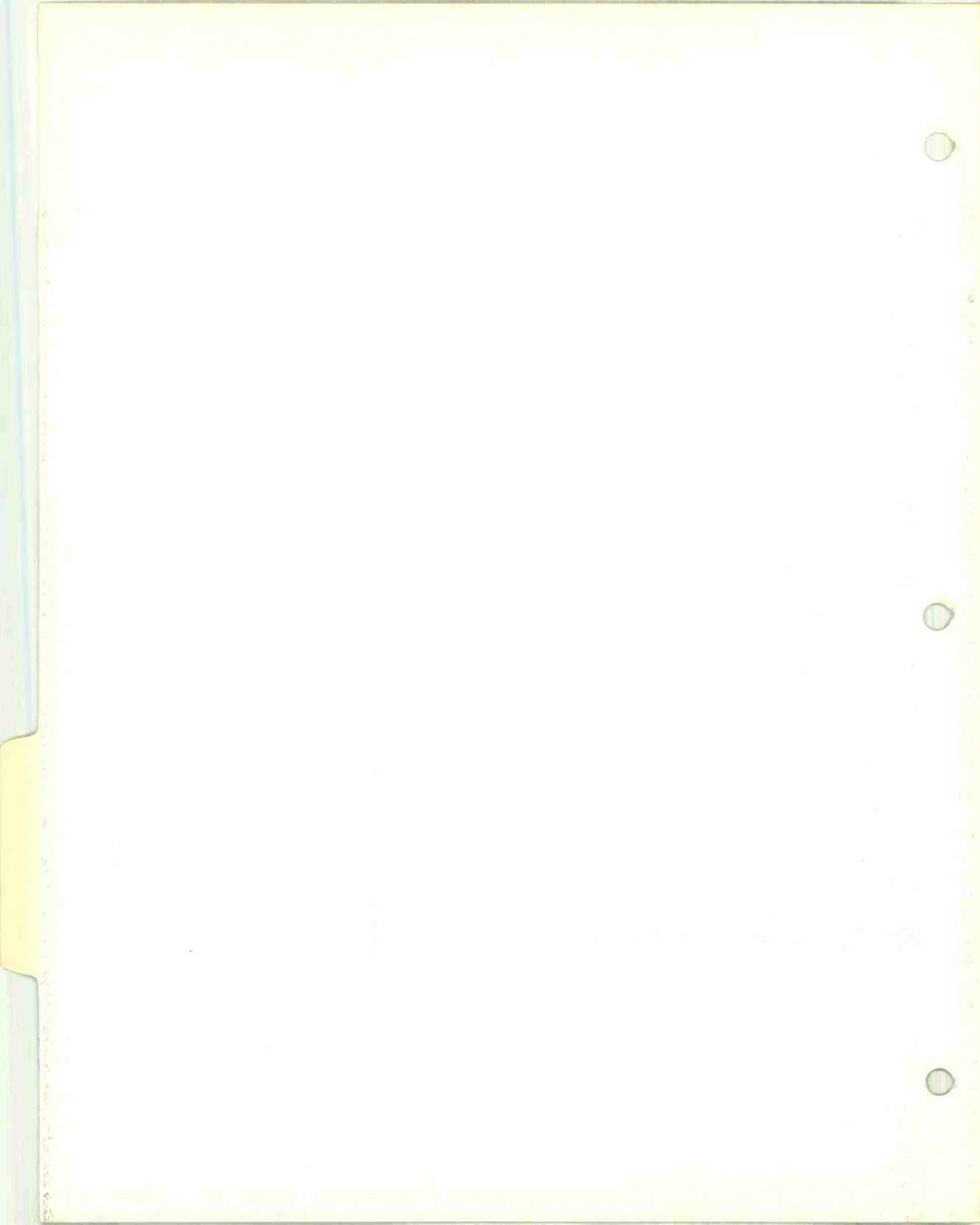
PROFESSIONAL PRODUCTS



For Your Information on other Shure Products

GENERAL CATALOG

For further information contact: R. W. Carr, Manager
Professional Products Division
Shure Brothers, Incorporated
222 Hartrey Avenue, Evanston, Illinois
Phone: DA 8-9000



SHURE

PROFESSIONAL PRODUCTS

FOR

- BROADCASTING
- RECORDING
- MOTION PICTURES

MICROPHONES • CIRCUITRY • CARTRIDGES • TONE ARMS • MICROPHONE ACCESSORIES



SM5 UNIDIRECTIONAL DYNAMIC BOOM MICROPHONE

Specifically designed to minimize boom microphone problems in television and motion-picture sound stage and location recording. Smooth, natural response for dialogue, vocal music, and many scoring applications. Unusually effective cardioid pattern is uniform with frequency (even at the extreme low end) and completely symmetrical about the axis. This characteristic assures excellent rejection of unwanted sound (even air conditioner or traffic rumble), allows virtually no coloration of off-axis reflections or reverberation, and maintains presence over very wide working distance range. Highly effective integral windscreen completely surrounds the mechanical isolation elements for protection and maximum wind noise suppression. No transformers or inductors to pick up electrical noise or hum. Lightweight and perfectly balanced for fast pans and fishpole use. For 5/16" or smaller boom studs; 5/8"—27 stand thread adapter included.

May also be used to good advantage on optional desk stand (533C) for outdoor sports and other problem applications.

SPECIFICATIONS

- FREQUENCY RESPONSE: 50-15,000 Hz
- POLAR PATTERN: Cardioid
- IMPEDANCE: Model 5M5A - 50 ohms
Model 5M5B - 150 ohms
- OUTPUT LEVEL: -57 db (0 db = 1 milliwatt with 10 microbars)
- CONNECTOR: Cannon XLR-3-42 receptacle on microphone
- DIMENSIONS AND WEIGHT: 9²³/₃₂" long x 5¹/₂" diam. x 5²³/₃₂" yoke (to center of microphone); 1 lb. 15 oz.



SM50 SELF-WINDSCREENED OMNIDIRECTIONAL DYNAMIC

Strikingly immune to windnoise and explosive breath sounds, making it an ideal "work horse" microphone for remote interviews, news, sports, and a variety of field and studio applications. *Five-element built-in windscreen unscrews from microphone as a self-contained unit for easy cleaning or replacement.* Response rolled off slightly at each end to reduce extreme low and high frequency noise and sibilance. Full-bodied, smooth, natural, and pleasing reproduction of speech and vocal music. Extremely rugged, yet surprisingly light. Compact and perfectly balanced for unusually comfortable handling. Shock-mounted cartridge. Supplied with slip-in stand adapter.

SPECIFICATIONS

- FREQUENCY RESPONSE: 40-15,000 Hz
- POLAR PATTERN: Omnidirectional
- IMPEDANCE: DUAL: 30-50 ohms; 150-250 ohms
- OUTPUT LEVEL: -57 db (0 db = 1 milliwatt with 10 microbars)
- DIMENSIONS AND WEIGHT: 6¹/₁₆" x 1¹/₂" diam. (max.); 8 oz.

See page 5 for important information on Connectors, Cables, Surface Finishes, and Stand Thread.



TRULY VERSATILE



FOR REMOTE NEWSCASTS

SPORTING EVENTS

"GLAMOUR" PRODUCTIONS

STUDIO COMMENTARY

SM60 OMNIDIRECTIONAL DYNAMIC

This unusually versatile microphone is a unique combination of beauty, strength, performance and economy. It has smooth, natural, wide-range response for both voice and music. The SM60 is equally at home in the studio or for remote pickups, and is in wide use in situations as diverse as outdoor sporting events and studio production numbers. Built-in breath and pop filter minimizes breath and wind noise. Lustrous, non-glare matte metallic finish and tailored-to-the-hand dimensions provide handsome on-camera appearance and superior handability. Specially reinforced machined-steel case front for exceptional ruggedness — can actually be dropped on its nose without damage to internal structure! Windscreen and front end quickly and easily removable for cleaning. Can be used on stand (stand adapter included) or instantly removed from stand for in-the-hand use.

SPECIFICATIONS

FREQUENCY RESPONSE: 45-15,000 Hz
 POLAR PATTERN: Omnidirectional
 IMPEDANCE: 150 ohms (properly matches 50 to 250 ohm inputs)
 OUTPUT LEVEL: -59 db (0 db = 1 milliwatt with 10 microbars)
 DIMENSIONS AND WEIGHT: 6¹/₃₂" x 1¹/₄" diam. (max.); 6 oz.



SM58 SELF-WINDSCREENED UNIDIRECTIONAL DYNAMIC

Ideal for remote news, sports, interviews, and vocal recording, or wherever the announcer or performer may need to work close to the microphone. Built-in spherical windscreen minimizes or eliminates explosive breath "pop." Wide response with slight presence rise for clean, bright, and natural sound. Unusually effective cardioid pickup pattern (uniform with frequency, symmetrical about axis) provides excellent control of unwanted sound. Minimizes "boominess" that is usually accentuated by close-up microphone use. Windscreen assembly readily removable in the field for cleaning or replacement. Cartridge suspended in rubber shock mount. Convenient size and weight for comfortable hand-held use. Slip-in stand adapter included.

SPECIFICATIONS

FREQUENCY RESPONSE: 50-15,000 Hz
 POLAR PATTERN: Cardioid
 IMPEDANCE: DUAL: 50 and 150 ohms
 OUTPUT LEVEL: -56 db (0 db = 1 milliwatt with 10 microbars)
 DIMENSIONS AND WEIGHT: 6¹/₃₂" x 2" diam. (max.); 15 oz.

U.S. Patents 3,132,713 and 3,240,883

See page 5 for important information on Connectors, Cables, Surface Finishes, and Stand Thread.

SM56-57 UNIDIRECTIONAL DYNAMICS



U.S. PATENT D-190,864

Models SM56 and SM57 feature unusually effective cardioid pickup patterns that are uniform at all frequencies and in all planes! The effects of studio acoustics and background noise are minimized and the bright, clean sound is ideal for announcing, dialogue and vocal music. Unusually effective for rhythm pickups because they do not overemphasize low frequencies — resulting in clean, beautifully defined sound from percussion instruments, piano and string basses. In addition, "boominess" associated with close-up pickup is well controlled.

The cartridges are shock-mounted for quiet operation.

SM56 — STAND MOUNTED MODEL

Permanently mounted on positive-action swivel-shock mount that permits tilting of head through 135°. Includes accessory switch adapter to serve in applications where on-off switch is necessary at the microphone.

SPECIFICATIONS

FREQUENCY RESPONSE: 50-15,000 Hz

POLAR PATTERN: Cardioid

IMPEDANCE: DUAL: selected by impedance switch:
30-50 ohms "L," or 150-250 ohms "H"

OUTPUT LEVEL: -56 db (0 db = 1 milliwatt
with 10 microbars)

DIMENSIONS AND WEIGHT: 4¾" x 1⅝" diam.;
3¾" base height; 1 lb. 3 oz.

SM57 — HAND OR STAND MODEL

Hand-held variation of SM56 (above). Includes slip-in stand adapter for instant attachment to stand. Same specifications as SM56 except impedance changeable at pins in base of microphone: 6¾" long, 1¼" diam.; 10 oz.

OMNIDIRECTIONAL DYNAMICS

**MODEL SM76 ¾" DIAMETER
OMNIDIRECTIONAL DYNAMIC**

Extremely wide, peak-free, and smooth response (45 - 20 kHz) together with slim styling makes this a microphone of unusual versatility. It is recommended for applications as divergent as symphonic and organ recording, studio or location interviews and newscasts, in-the-audience use . . . anywhere a fine, natural sounding omnidirectional is required. Slender steel case feels great in the hand. Can also be used on a stand, indoors or out (includes slip-in stand adapter). Dependable and extraordinarily rugged — will withstand severe use without deviation from original standards.

SPECIFICATIONS

FREQUENCY RESPONSE: 45-20,000 Hz

POLAR PATTERN: Omnidirectional

IMPEDANCE: DUAL: 50 and 150 ohms permits proper
matching to any input from 30 to 250 ohms.

OUTPUT LEVEL: -60 db (0 db = 1 milliwatt
with 10 microbars)

DIMENSIONS AND WEIGHT: 8¼" long x ¾" diam.; 7 oz.

**MODEL SM51 DYNAMIC LAVALIER
MICROPHONE**

Especially designed for radio, TV, motion-picture or applications calling for a small wearable microphone; frequency response optimized for lavalier use — will match well, in sound, with stand or desk mounted units. Smooth exterior and recessed grill minimize clothing noise. Versatile, "Positive-Lock" lavalier holder goes on in an instant; provides simple, noiseless adjustment of microphone position. Non-detachable 30-ft. two-conductor rubber cable is easily field replaceable without disturbing cartridge. Magnetic shielded steel case.

SPECIFICATIONS

FREQUENCY RESPONSE: 70-12,000 Hz with rising
characteristic to 6,000 Hz

IMPEDANCE: Matches any input from 50 to 250 ohms

OUTPUT LEVEL: -60.5 (0 db = 1 milliwatt with 10 microbars)

DIMENSIONS AND WEIGHT: 2½" long x ¾" diam.; 2 oz.

See Page 5 for important information on Connectors, Cables, Surface Finishes and Stand Thread.





MODEL SM33 SUPER CARDIOID RIBBON MICROPHONE

U.S. PATENT D-178,018

The SM33's ribbon element imparts a pleasantly warm characteristic to the male speaking voice which especially recommends it for announcing and narration applications. The same warmth is also imparted to instrumental or vocal recordings. Because its polar pattern is somewhat more directional than a conventional cardioid, it provides superior separation in studio recording as well as control of unwanted surrounding noise. Smooth, wide range response. Unusually rugged. Two-position Response Selector Switch tailors bass frequencies to the recording situation. Self-adjusting lifetime swivel-shock mount permits tilting head 45° forward, 90° backward.

SPECIFICATIONS

FREQUENCY RESPONSE: 40-15,000 Hz
 POLAR PATTERN: Super-Cardioid
 IMPEDANCE: DUAL: 30-50 ohms; 150-250 ohms
 OUTPUT LEVEL: -58 db (0 db = 1 milliwatt with 10 microbars)
 DIMENSIONS AND WEIGHT: 5¹⁵/₁₆" long overall x 1¹/₄" wide x 1¹/₈" deep. Head is 4¹/₆" long; 1 lb. 10 oz.



MODEL 300 BIDIRECTIONAL RIBBON MICROPHONE

U.S. Patent D-171,055

Combines wide range response and a bidirectional (cosine) pickup pattern: symmetrical front and rear pickup with greatly reduced side pickup provides same control of overall surrounding noise as an equivalent cardioid microphone. Warm, smooth sound. Ideal for applications such as across-the-table interviews or dialogue, combined pickup of facing instrumental groups, and stages with overhead loudspeakers. Two-position, low frequency, Response Selector Switch. Self-adjusting lifetime swivel-shock mount.

SPECIFICATIONS

FREQUENCY RESPONSE: 40-15,000 Hz
 POLAR PATTERN: Cosine
 IMPEDANCE: MULTI-IMPEDANCE: Switch gives choice of "L" 30-50 ohms; "M" 150-250 ohms; or "H" high.
 OUTPUT LEVEL: -59 db (0 db = 1 milliwatt with 10 microbars)
 DIMENSIONS AND WEIGHT: 9¹/₄" long overall x 1¹/₂" wide x 1³/₈" deep. Head is 6" long; 1 lb.

IMPORTANT INFORMATION

CONNECTORS AND CABLES:

Unless otherwise specified, the microphones listed in this folder are equipped with a Cannon XL-3-12 type receptacle in the microphone. Supplied cables are 20-ft. lengths of two-conductor shielded, broadcast-type, synthetic rubber cable with Cannon XLR-3-11C Connectors. Cable not supplied with SM5A or B; miniature and lavalier microphones supplied without connector but with cable, as stated in the product descriptions.

SURFACE FINISHES:

All Shure Professional Microphones are specially finished in textured dark gray that eliminates glare or flashes on camera. Model SM60 finished in non-glare matte metallic.

STAND THREAD:

5/8"-27 stand thread on all microphones and stand adapters. Boom mounting on SM5A and B has pass hole for 5/16" stud.

UTILITY DYNAMIC MICROPHONES

A complete selection of general purpose microphones for mounting on goosenecks or other flexible or fixed mountings. Recommended for use in control rooms, cueing, talk-back, intercom, newsroom, and other applications where a hands-free, permanently, or semi-permanently located microphone is called for. Models 544 and 561 available as head alone, while Models 544-G6, 544-G12, 544-G18 and 572G are complete with gooseneck and mounting flange. (Goosenecks available with side cable opening on special request.)

UNIDIRECTIONAL — MODEL 544 SERIES

Cardioid pickup performance characteristics similar to Model SM57 (page 4). Well suited to on-the-air and production use; or wherever it's desirable to suppress background noise such as in news rooms, control rooms or other noisy locations. Dual impedance: 150 ohms, or high. With 7-foot, 2-conductor shielded cable. 544-G6 with 6" gooseneck; 544-G12 with 12" gooseneck; 544-G18 with 18" gooseneck. Model 544 is the head alone with $\frac{3}{8}$ "-27 thread to fit conventional goosenecks or other flexible or fixed mountings.

MINIATURE — MODEL 572G

Omnidirectional dynamic head with same performance characteristics as $\frac{3}{4}$ " diameter Model 571 miniature dynamic microphone (below). The head is about the same diameter as the gooseneck itself, creating a strikingly trim appearance. With special, slim and quiet flexible 12-inch gooseneck, and mounting flange. With non-detachable, 5-foot, 2-conductor shielded cable.

STANDARD — MODEL 561

Rugged, low-cost, omnidirectional dynamic gooseneck microphone at an unusually low cost. "Tamper-proof" head with set-screw provision for locking head to gooseneck or fitting. 40-10,000 Hz with rising response characteristic for crisp, intelligible speech. Low impedance (200 ohms) permits long cable lengths. -56 db output. $\frac{3}{8}$ "-27 thread connects to standard goosenecks or other flexible or fixed mountings. Head measures $2\frac{3}{16}$ " x $1\frac{3}{8}$ " diam. With 4-foot, 2-conductor shielded cable.



MODEL 571 MINIATURE DYNAMIC

A lavalier-size omnidirectional microphone with stand microphone response that is well suited to general use. Excellent voice characteristics—smooth and peak-free. For inconspicuous stand or hand-held use, concealment in a studio or shooting location, hanging over stage, documentaries, etc. Steel case for magnetic shielding. With non-detachable 30-foot, 2-conductor shielded broadcast type cable. Includes stand adapter.

SPECIFICATIONS

FREQUENCY RESPONSE: 50-10,000 Hz.
POLAR PATTERN: Omnidirectional
IMPEDANCE: Matches any input from 50 to 250 ohms.
OUTPUT LEVEL: -60.5 db
(0 db = 1 milliwatt with 10 microbars)
DIMENSIONS AND WEIGHT:
 $2\frac{3}{8}$ " x $\frac{3}{4}$ " diam.; 2 oz.

SHURE MICROPHONE ACCESSORIES



MODEL S39A VIBRATION ISOLATION STAND

Isolates microphone from even extreme mechanical vibration. For tables, desks, footlight areas, remotes (particularly sporting events), etc. Designed for use with any Shure microphone or swivel adapter assembly. Heavy duty "non-fatigue" foam rubber internal isolation element. Low-silhouette, black high-impact non-glare plastic housing.



MODEL S33 STAND

Low silhouette ideal for TV use. Heavy ($2\frac{1}{2}$ lbs.) for rock-steady support of any microphone having standard $\frac{3}{8}$ "-27 thread. Unique quick microphone removal provisions. Model S33B has black satin finish; Model S33P has textured charcoal finish to match all Shure "SM" series microphones; Model S33C has special mounting hardware for SM5 Boom microphones.



MODEL A95A LINE MATCHING TRANSFORMER

Matches 35-50 ohm and 150-250 ohm Dynamic, Ribbon or Magnetic microphones to high impedance inputs. Full magnetic shield case. Compact size for "in-line" use. Cannon XL-3-11 low impedance connection; Amphenol MC-1 high impedance connection. Supplied with mating connectors. Only $2\frac{1}{2}$ in. long, $\frac{3}{4}$ in. diam.



MODEL A2WS WINDSCREEN

A high performance, rugged windscreen with exclusive lock-on provision that prevents accidental removal or loss. Effectively controls wind noise and explosive breath sounds ("pop"). Neutral gray. Handsome, finished appearance. Fits Shure Nos. SM56, SM57, 544, SM76 and 571 professional microphones.



FRONT VIEW



REAR VIEW

M67 PROFESSIONAL MICROPHONE MIXER

A compact, lightweight and economical microphone mixer/remote amplifier specifically designed for studio and remote broadcasting, recording and sound reinforcement. Provides four low-impedance balanced microphone inputs and one line input. The excellent performance and versatility of the M67 makes it ideal for use as a complete, compact console for studio, remote, or original installation use—and as an “add-on” mixer for expanding existing facilities and providing additional microphone inputs with tape recorders and VTR’s. Built-in tone oscillator provides calibration signal to balance signal levels.

The M67 features line and microphone level outputs; an illuminated VU meter calibrated for +4 and +10 dbm out; extremely low noise and RF susceptibility; wide, flat frequency response; two-level headphone monitor jack. AC or battery operation (see

accessory battery pack below). Noiseless automatic switchover to battery if AC line fails.

M67 SPECIFICATIONS

- FREQUENCY RESPONSE: ± 2 db from 20 to 20,000 Hz.
- GAIN: 90 db; 150 ohm microphone into 600 ohm line.
- HUM AND NOISE: -125 dbv maximum equivalent input hum and noise, 20 to 20,000 Hz., at 90 db gain.
- DISTORTION: Under 1% from 20 to 20,000 Hz. at +10 dbm output, 0.5% typical.
- INPUTS: Four low-impedance microphone; one line, bridging or 600 ohms.
- OUTPUTS AND LEVELS: +18 dbm max., 600 ohm line; -44 dbv max., microphone.
- SIZE AND WEIGHT: $11\frac{3}{8}$ " x $7\frac{1}{2}$ " x $2\frac{1}{2}$ "; 4 lbs., 3 oz.
- OPERATING TEMPERATURE: 0° to 135° F.



MODEL A67B BATTERY POWER SUPPLY

The A67B Battery Power Supply is designed to power the Shure M67 Microphone Mixer to full rated output.

It may be used either as the sole power source or as a stand-by safety during AC operation, providing automatic noiseless switch-over in case of AC failure.



MODEL SE20 SOLID STATE STEREO TRANSCRIPTION PREAMPLIFIER

SPECIFICATIONS

- FREQUENCY RESPONSE: ± 1 db from 30 to 15,000 Hz. (RIAA/NAB disc playback characteristic)
- GAIN: 53 db, adjustable.
- DISTORTION: Less than 0.5% THD at +20 dbm from 20 to 20,000 Hz.
- CHANNEL SEPARATION: Greater than 50 db.
- HUM AND NOISE: At least 60 db below +6 dbm output.
- INPUT IMPEDANCE: 47,000 ohms.
- OUTPUT IMPEDANCE: For 600 or 150 ohm balanced line. Approximately 80 ohms, actual.
- OPERATING TEMPERATURE: Within 0.5 db of all specifications at 20 to 135° F.
- MOUNTING SIZE: Panel Opening $3\frac{3}{8}$ " x 7". $9\frac{1}{8}$ " deep.
- OPERATING VOLTAGE: 120 volts $\pm 10\%$ at 50/60 Hz.
220 volts $\pm 10\%$ at 50/60 Hz.

A self-contained, high level, equalized stereo preamplifier specifically designed for highest quality disc reproduction in broadcasting and recording studios. Precise RIAA/NAB equalization. Noise and RF susceptibility are extremely low. Full line output capability to +20 dbm. Under $\frac{1}{2}\%$ distortion at +20 dbm! Individual high and low frequency equalization trimmers on each channel. Individual channel level controls. Excellent channel separation permits use as two separate monaural channels.

SHURE DISC REPRODUCERS PHONO CARTRIDGES & TONE ARMS

THE NEW BROADCAST STANDARD

M44 Series Stereo Dynetic Phono Cartridges

More FM and AM radio stations have standardized on the Shure M44 series of cartridges than any other, because of their unique combination of ruggedness, performance, and versatility. They feature exceptionally good sound, unusual uniformity and stand up best under hard usage. Wide choice of models, including conical or elliptical styli; light or heavy tracking; special styli for mono LP and 78 RPM.

SPECIFICATIONS

FREQUENCY RESPONSE: From 20 to 20,000 Hz
 OUTPUT VOLTAGE: At 1,000 Hz at 5 CM/SEC;
 Model M44-7, 11 millivolts per channel.
 Model M44-5, 7 millivolts per channel.
 Model M44C, 9.3 millivolts per channel.
 Model M44E, 9.3 millivolts per channel.
 CHANNEL SEPARATION: More than 25 db at 1,000 Hz

M44 SERIES CARTRIDGES

Cartridge Number	Stylus Number *	Tracking Force	Type of Stylus	Stylus Size	Recommended Applications
M44-5	N44-5*	Light 3/4 - 1 1/2 gms.	Conical	.0005"	Stereo recordings only
M44-7	N44-7*	Medium 1 1/2 - 3 gms.	Conical	.0007"	All 33 1/3 & 45 RPM Records
M44C	N44C*	Heavy 3 - 5 gms.	Conical	.0007"	All 33 1/3 & 45 RPM Records
M44E	N44E*	Medium 1 1/4 - 4 gms.	Elliptical	.0004" x .0007"	All 33 1/3 & 45 RPM Records
—	N44-1*	Medium 1 1/2 - 3 gms.	Conical	.001"	For Mono LP only
—	N44-3*	Medium 1 1/2 - 3 gms.	Conical	.0025"	For 78 RPM only

* Note: All M44 series styli are interchangeable.

THE WORLD'S FINEST CARTRIDGE

V-15 Type II Super Trackability Cartridge

The most important advance in cartridges since the advent of stereo! Especially designed for high trackability . . . will track difficult passages cut at highest velocities, including harpsichords, orchestral bells, cymbals, glockenspiels, vocal "S" sounds, etc. at forces as low as 3/4 gram. Eliminates breakup and FM overmodulation due to tracking distortion. Smooth and clean. Extended high end . . . peaks well beyond 15 KC. Especially recommended for FM good music stations and recording studios.

SPECIFICATIONS

TRACKABILITY at 1 gram tracking force using a Shure/SME arm:
 22 CM/SEC at 400 Hz; 30 CM/SEC at 1,000 Hz
 30 CM/SEC at 5,000 Hz; 22 CM/SEC at 10,000 Hz
 FREQUENCY RESPONSE: 20 to 25,000 Hz
 OUTPUT VOLTAGE: 3.5 mv per channel at 1,000 Hz at 5 CM/SEC
 CHANNEL SEPARATION: Over 25 db at 1,000 Hz
 Over 17 db from 500 to 10,000 Hz
 CHANNEL BALANCE: Output from each channel within 2 db
 STYLUS: VN15E Bi-Radial Elliptical Stylus, Diamond Tip
 .0007 inch (17.8 microns) frontal radius
 .0002 inch (5 microns) side contact radii
 .0010 inch (25 microns) wide between record contact points
 TRACKING FORCE: 3/4 to 1 1/2 grams

MODERATE COST HIGH TRACKABILITY CARTRIDGES

Model M91E

Second only to the incomparable V-15 Type II in tracking ability and clean sound . . . and costs about 30% less. A definite *hearable* step in upgrading sound quality—particularly in FM operations. Elliptical stylus, 3/4 to 1 1/2 grams tracking.

SPECIFICATIONS

TRACKABILITY at 1 gram tracking force using a Shure/SME arm:
 20 CM/SEC at 400 Hz; 28 CM/SEC at 1,000 Hz
 25 CM/SEC at 5,000 Hz; 18 CM/SEC at 10,000 Hz
 FREQUENCY RESPONSE: From 20 to 20,000 Hz
 OUTPUT VOLTAGE: 5.0 mv per channel at 1,000 Hz at 5 CM/SEC
 CHANNEL SEPARATION: More than 25 db at 1,000 Hz
 STYLUS: N91E Elliptical with diamond tip .0007 in. x .0002 in.
 TRACKING FORCE: 3/4 to 1 1/2 grams.

MODEL M92G SPHERICAL STYLUS HIGH TRACKABILITY CARTRIDGE. With .0006 inch radius spherical diamond tip. Trackability: 18 CM/SEC at 400 Hz; 26 CM/SEC at 1,000 Hz; 25 CM/SEC at 5,000 Hz; 15 CM/SEC at 10,000 Hz.

MODEL M93E ELLIPTICAL STYLUS HIGH TRACKABILITY CARTRIDGE. For heavier tracking at 1 1/2 to 3 grams. .0007 in. x .0004 in. elliptical diamond stylus. Trackability at 2 grams tracking force: 18 CM/SEC at 400 Hz; 25 CM/SEC at 1,000 Hz; 24 CM/SEC at 5,000 Hz; 13 CM/SEC at 10,000 Hz.

MODEL N75-3 STYLUS FOR 78 RPM RECORDS. Fits any of above cartridges. .0025 in. stylus. 1 1/2-3 grams tracking.

PROFESSIONAL QUALITY TONE ARMS

SHURE/SME — "THE BEST PICKUP ARM IN THE WORLD"

Permits optimum use of top-quality, light tracking cartridges. Proven rugged in broadcast applications. Provides features and quality unattainable in ANY other tone arm. Made by British craftsmen to singularly close tolerances and standards. All adjustments lock . . . assuring perfect tracking. Wood-lined arm puts resonances outside recorded range. Effective "anti-skating" bias adjuster counterweight. Model 3009 for 12" recordings, Model 3012 for 16" recordings.

SHURE PROFESSIONAL TONE ARMS

High quality, rugged, simple arm for tracking at 1 1/2 grams or higher. Full range of adjustments for static and dynamic balance, cartridge overhang, arm height, etc. Direct reading tracking force scale. Twist-to-lock head accommodates any stereo or mono cartridge. A real "workhorse" that takes abuse. Simple mounting through a single hole from the top of the table; plug-in cable. Model M232 is for 12" recordings, Model M236 for 16" recordings.

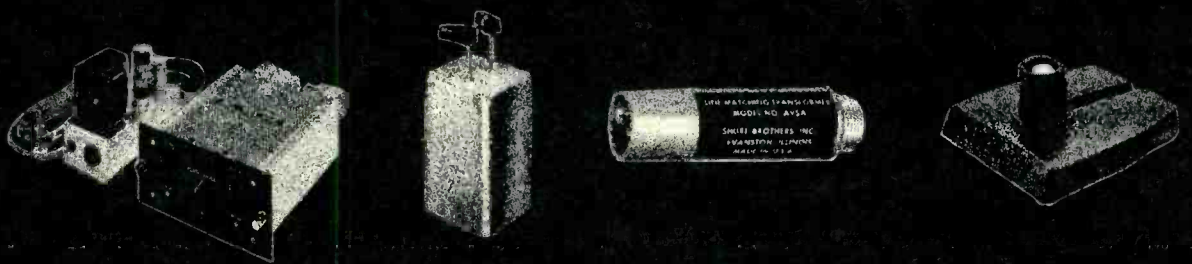
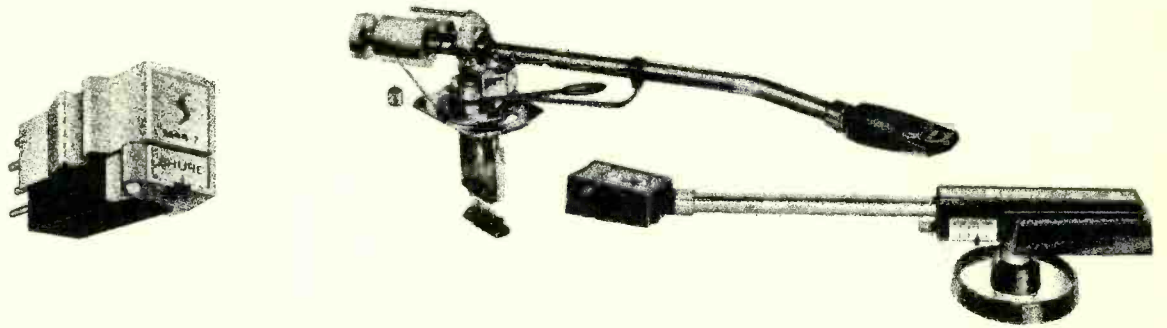
SHURE

SHURE BROTHERS, INC.
 PROFESSIONAL PRODUCTS DIVISION
 222 HARTREY AVE., EVANSTON, ILLINOIS 60204
 AREA CODE 312 328-9000 CABLE: SHUREMICRO

technical data for

SHURE

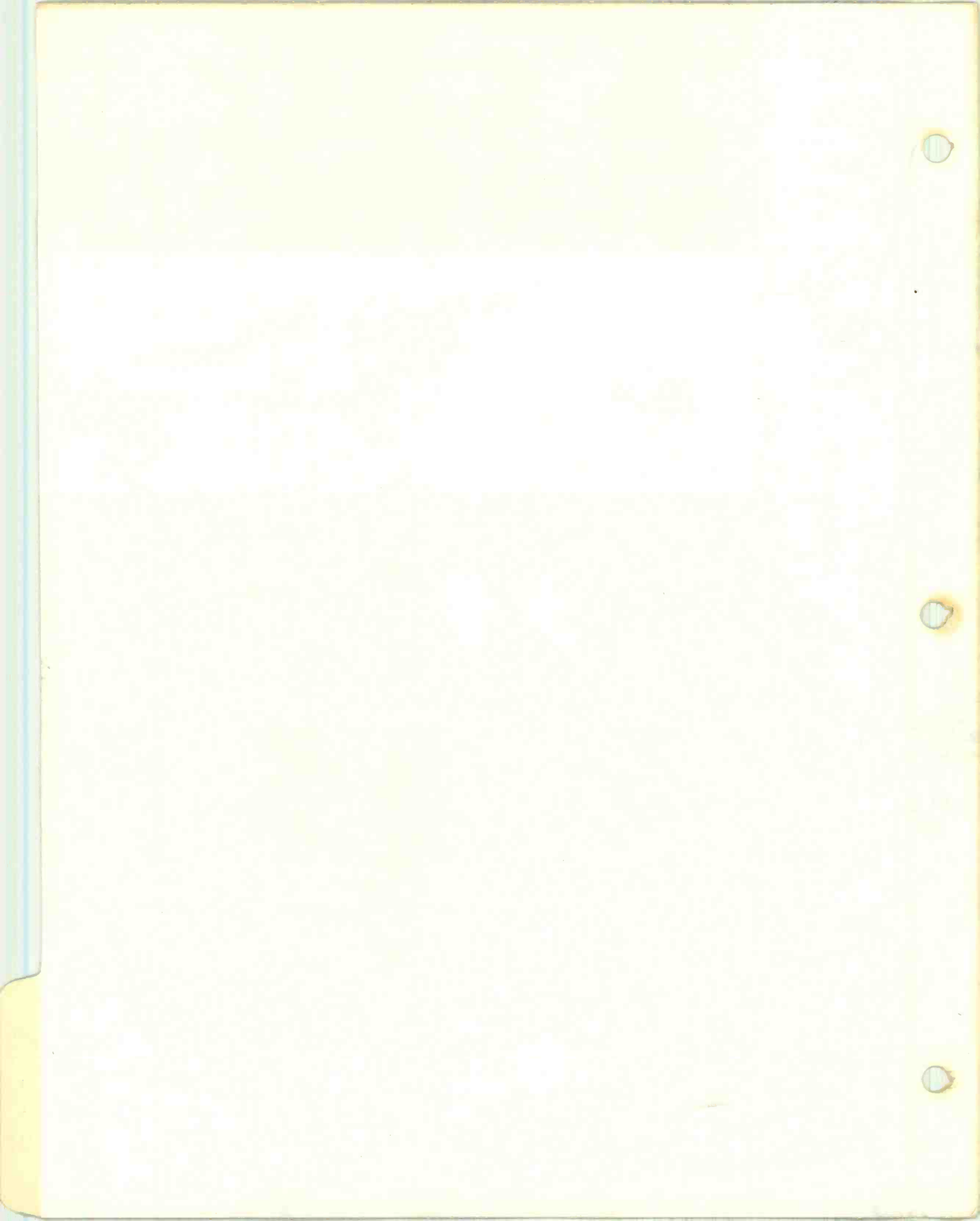
PROFESSIONAL PRODUCTS



For Your Information on other Shure Products

For further information contact: R. W. Carr, Manager
Professional Products Division
Shure Brothers, Incorporated
222 Hartrey Avenue, Evanston, Illinois
Phone: DA 8-9000

PRICE LISTS



DEALER MERCHANDISING PROGRAM



STEREO DYNETIC CARTRIDGES AND REPLACEMENT STYLI

Merchandising Fund

The dealer will have a fund accrual for local sales promotional activity based on the following: 5% of the dealer invoiced price on the V-15 Type II Series of Cartridges and Styli (in Price Schedule 1), and those cartridges and replacement styli on the Quantity Lot Price List (Price Schedule 4).

The following sales promotion activities can qualify for 100% participation in the Merchandising Fund above to the extent of the monies accrued in the Fund when the claim is made.

Newspaper Space Advertising
Radio-TV Advertising
Direct Mail
Point-of-Purchase Displays
Special In-Store Promotional Programs

Catalogs and flyers (single and multiple pages) can qualify for participation in the Merchandising Fund above to the maximum extent of the amounts listed below:

Number of Copies of Catalog or Flyer Printed	Payment For Full Page
1,000,000 Copies and Over	\$1,200.00
500,000 to 999,999	1,000.00
100,000 to 499,999	800.00
50,000 to 99,999	600.00
10,000 to 49,999	400.00
Up to 10,000	200.00

Directly proportionate amounts will be paid for multiple pages and fractions of pages, based on the full page amounts above.

In addition, amounts for line listings of cartridges in systems contained in catalogs or flyers will be paid on the following basis, based on the full page amounts above:

1. If a Shure cartridge is listed as the SINGLE choice in the system, 5% of the full page rate above will be paid for *each* single-choice system featuring only a Shure cartridge on a page, not to exceed 100% of the page, as shown above. (No matter how many single-choice systems are listed, the total amount paid will not exceed 100% of the full page, as shown above).
2. If a Shure cartridge is listed as one of a multiple-choice in the system, 2% of the full page rate will be paid for each multiple-choice system featuring a Shure cartridge on a page, not to exceed 100% of the page, as shown above.

Payment of Merchandising Funds

The dealer will be reimbursed for promoting sales of models covered by this program as listed above, to the extent of the Merchandising Fund built up through purchases. Requests for reimbursement must be submitted in the form of an invoice or debit memo to Shure Brothers Inc., and may not be deducted from payment of goods shipped and invoiced. The dealer invoice or debit memo must list in detail the activity for which reimbursement is requested and must be accompanied by copies of paid invoices showing the amount and type of promotion, and the dealer's costs, as well as a sample of the dealer's advertising (newspaper ad, printed matter, radio-TV scripts). When applicable, postal certificates and radio-TV affidavits of performance should also be included. The dealer will receive a check in reimbursement for merchandising, except when a balance is due Shure Brothers Inc. In that case, a credit memorandum will be issued.

Restrictions

1. Merchandising funds are available only for Shure cartridges and styli, as outlined above, and reimbursement will be made only for sales promotion activities covering these units.
2. Visual advertisements must include illustrations of one or more of the models covered by this program and minimum authorized copy, including Shure logotype.
3. Reimbursement will be made for advertisements which include other manufacturers' products as well as Shure products, except reimbursement will cover cost of the actual space or time used for Shure products only.
4. All merchandising activities should be run and reimbursement requested within 12 months following shipment of merchandise concerned to dealer.
5. All merchandise allowances will be cancelled on any returned goods.

REPLACEMENT STYLI

(SCHEDULE 4)

Model Number	Recommended Resale	1 - 11	12 - 24	100 Lot	1,000 Lot
N3D	\$ 7.95	\$ 7.75	\$ 6.25	\$ 4.75	\$ 3.75
N21D	11.00	8.55	7.05	5.45	4.45
N31E	14.95	11.75	10.25	8.75	7.75
N32E	14.50	11.50	10.00	8.50	7.50
N32-3	10.00	9.15	7.65	6.15	5.15
N44-1	10.00	9.25	7.75	6.25	5.25
N44-3	10.00	9.15	7.65	6.15	5.15
N44-5	11.00	10.00	8.50	7.00	6.00
N44-7	9.75	9.25	7.75	6.25	5.25
N44C	9.70	9.20	7.70	6.20	5.20
N44E	12.50	9.75	8.25	6.75	5.75
N55E	14.95	10.75	9.25	7.75	6.75
N75-3	10.00	9.15	7.65	6.15	5.15
N75-6	11.35	10.75	9.25	7.75	6.75
N75C	10.00	9.25	7.75	6.25	5.25
N75E	20.00	14.50	13.00	11.50	10.50
N75EJ	19.50	13.00	11.50	10.00	9.00
N75G	17.50	13.00	12.00	10.50	9.50
N91E	24.50	16.50	15.00	13.50	12.50
N92E	22.50	15.70	14.20	12.70	11.70
N92G	19.00	12.90	11.40	9.90	8.90
N93E	19.50	13.30	11.80	10.30	9.30
N99	15.00	12.50	11.00	9.50	8.50

REPLACEMENT PARTS FOR M232-M236 TONE ARMS

(SCHEDULE 3)

RKP KIT NO.	DESCRIPTION	Recommended Resale	1 or More
RKP1	M232 Tone Arm Less Pivot and Head Assembly	\$15.60	\$10.40
RKP2	M236 Tone Arm Less Pivot and Head Assembly	17.40	11.60
RKP3	M232-M236 Stereo Cable Assembly	6.60	4.40
RKP4	M232-M236 Base Assembly	2.10	1.40
RKP5	M232-M236 Ball Bearing Kit	1.80	1.20
RKP6	M232-M236 Tone Arm Rest	1.80	1.20
RKP7	M232-M236 Hardware for Tone Arm Shell	1.80	1.20
RKP8	M232 Stylus Force Adjustment Assembly	1.80	1.20
RKP9	M236 Stylus Force Adjustment Assembly	1.80	1.20
RKP10	M232-M236 Pivot Assembly	9.00	6.00

PACKAGING NOTES

1. **STANDARD:** Available on all models including Styli: (With the exception of M31E-EP and M32E-EP) Packaged in plastic box with mounting hardware and data sheet. Plastic box plus literature then packaged in printed cardboard box.
2. **ECONOMY EP or M:**
Available on all models on quantity lot price list. Packaged in plastic vial with mounting hardware and data sheet.
3. **BUBBLE PACKAGING BP** (Available on M3D-BP only):
Packaged in plastic bubble attached to printed card.
4. **BULK PACKING MB** (Available on M3D-MB, M44-7MB, M44E-MB and M55E-MB). Note: M91E-D12-MB, M91E-GSL-MB, M91E-50H-MB, M93E-D12-MB and M93E-GSL-MB are also in bulk packaging. Packaged in compartmented cardboard shipping cartons, 25 to a carton. Must be ordered in multiples of 25 pieces. No hardware or data sheet furnished.

QUANTITY LOT REQUIREMENTS

All models on quantity lot price list, including styli, can be combined to achieve release quantity requirements listed below.

1,000 lot price requires a shipping release of 100 assorted units.

100 lot price requires a shipping release of 25 assorted units.

*Shipments of units available in BULK PACKAGING must be a minimum of 25 pieces and ordered in multiples of 25 pieces.

Note—This price list supersedes previous list dated May 4, 1970.

(All prices subject to change without notice)

QUANTITY LOT PRICE LIST
CARTRIDGES
(Schedule 4)

Model Number	Recommended Resale	1 - 11	12 - 24	100 Lot	1,000 Lot	Packaging (See Notes)
M3D	\$15.75	\$ 9.25	\$ 7.75	\$ 6.25	\$ 5.25	Standard
M3D-BP	15.75	8.85	7.35	5.85	4.85	Bubble
M3D-M	15.75	8.85	7.35	5.85	4.85	Economy
*M3D-MB	15.75	.....	.....	5.50	4.50	Bulk
M7/N21D	17.95	9.95	8.45	6.95	5.95	Standard
M7/N21D-EP	17.95	9.55	8.05	6.55	5.55	Economy
M31E-EP	29.95	12.85	11.35	9.85	8.85	Economy
M32E-EP	29.50	12.60	11.10	9.60	8.60	Economy
M44-5	21.95	11.50	10.00	8.50	7.50	Standard
M44-5EP	21.95	11.10	9.60	8.10	7.10	Economy
M44-7	19.95	10.75	9.25	7.75	6.75	Standard
M44-7EP	19.95	10.35	8.85	7.35	6.35	Economy
*M44-7MB	19.95	.....	.....	7.00	6.00	Bulk
M44C	17.95	10.70	9.20	7.70	6.70	Standard
M44C-EP	17.95	10.30	8.80	7.30	6.30	Economy
M44E	24.95	11.25	9.75	8.25	7.25	Standard
M44E-EP	24.95	10.85	9.35	7.85	6.85	Economy
*M44E-MB	24.95	.....	.....	7.50	6.50	Bulk
M55E	29.95	12.25	10.75	9.25	8.25	Standard
M55E-EP	29.95	11.85	10.35	8.85	7.85	Economy
*M55E-MB	29.95	.....	.....	8.50	7.50	Bulk
M75-6	24.50	12.25	10.75	9.25	8.25	Standard
M75-6EP	24.50	11.85	10.35	8.85	7.85	Economy
M75E	39.95	16.00	14.50	13.00	12.00	Standard
M75E-EP	39.95	15.60	14.10	12.60	11.60	Economy
M75C	34.95	15.00	13.50	12.00	11.00	Standard
M75C-EP	34.95	14.60	13.10	11.60	10.60	Economy
M91E	49.95	17.90	16.40	14.90	13.90	Standard
M91E-EP	49.95	17.50	16.00	14.50	13.50	Economy
†*M91E-D12-MB	49.95	.....	.....	14.50	13.50	Bulk
‡*M91E-GSL-MB	49.95	.....	.....	14.50	13.50	Bulk
§*M91E-50H-MB	49.95	.....	.....	14.50	13.50	Bulk
M92E	44.95	17.20	15.70	14.20	13.20	Standard
M92E-EP	44.95	16.80	15.30	13.80	12.80	Economy
M93E	39.95	14.80	13.30	11.80	10.80	Standard
M93E-EP	39.95	14.40	12.90	11.40	10.40	Economy
†*M93E-D12-MB	39.95	.....	.....	11.40	10.40	Bulk
‡*M93E-GSL-MB	39.95	.....	.....	11.40	10.40	Bulk

PREMOUNTED HEADS

† Premounted in DUAL head for 1219, 1209 and 1212.

‡ Premounted in GARRARD head for SL95, SL95B, SL72B, SL65B, SL55B, 40B, and SP20B.

§ Premounted in Miracord head for 50H, 620 and 630.

Note—This price list supersedes previous list dated May 4, 1970.

(All prices subject to change without notice)

PRICE SCHEDULES

1. Dynetic Cartridges, Dynetic Replacement Styli, Tone Arms, SA-1, SA-1F, SA-2E and SA-2FE Solo-Phones:
2. SA-10 Series Portable Solo-Phone Systems:
3. Accessories, Circuitry, Records, Gauge, Kit:
4. Quantity Lot Cartridges and Styli:

QUANTITY LOTS

- 1-11
- 12 or more
- 1-3
- 4 or more
- 1 or more

SEE QUANTITY LOT PRICE LIST (Schedule 4)

Note: Units on Price Schedule 1 can be combined with units on Price Schedule 4 to obtain the 12 or more lot price. Price Schedule 2 models may be counted to obtain the 12 or more lot price on Schedule 1. In this case, Price Schedule 2 quantity will receive the 4 or more lot price. Price Schedule 2 models will also receive the 4 or more lot price when 12 or more models are ordered from Schedule 4. However, Schedule 2 models may not be counted to obtain quantity requirements on Schedule 4. The V-15 Type II, V-15 II-7, VN15E, VN2E and VN7 may be counted in quantity requirements for Schedule 4. If the resulting total is 12 or more, the V-15 Type II, V-15 II-7, VN15E and VN7 will receive the 12 or more price shown on Schedule 1.

ITEMS IN SCHEDULE 3 MAY NOT BE COMBINED WITH ITEMS IN SCHEDULES 1, 2, AND 4 TO OBTAIN QUANTITY REQUIREMENTS SHOWN IN THOSE SCHEDULES.

Price Schedule 1	Model No.	Type	Recommended Resale	1-11	12 or more
Dynetic Cartridges, Dynetic Replacement Styli, Tone Arms, Solo-Phones	M232	Tone Arm	32.75	21.83	19.65
	M236	Tone Arm	35.00	23.33	21.00
	3009	Shure-SME Tone Arm	117.50	78.34	70.51
	3009HE	Shure-SME Tone Arm (Horizontal Cable Entry)	123.75	82.50	74.25
	3012	Shure-SME Tone Arm	128.00	85.34	76.81
	N1	Diamond Stylus	23.00	15.33	13.80
	N5D	Diamond Stylus	18.00	12.00	10.80
	N6S	Sapphire Stylus	7.50	5.00	4.50
	N22D	Diamond Stylus	24.75	16.50	14.85
	N77	Diamond Stylus	11.50	7.65	6.90
	SA-1	Solo-Phone Stereo Headphone Amplifier	48.00	32.00	28.80
	SA-1F	Solo-Phone Stereo Headphone Amplifier (Panel Mtd.)	57.00	38.00	34.20
	SA-2E	Solo-Phone Stereo Headphone Amplifier	50.00	33.34	30.01
	SA-2FE	Solo-Phone Stereo Headphone Amplifier (Panel Mtd.)	59.00	39.33	35.40
	V-15 Type II	Dynetic Cartridge	67.50	45.00	40.50
	V-15 II-7	Dynetic Cartridge	62.50	41.50	37.50
	VN2E	Diamond Stylus	25.00	16.67	15.00
VN7	Diamond Stylus	24.00	16.00	14.40	
VN15E	Diamond Stylus	27.00	18.00	16.20	

Price Schedule 2	Model No.	Type	Recommended Resale	1-3	4 or more
Portable Solo-Phone Systems	SA-10	Solo-Phone System (Changer)	120.00	80.00	76.00
	SA-10M	Solo-Phone System (Turntable)	120.00	80.00	76.00

Price Schedule 3	Model No.	Type	Recommended Resale	1 or more
Accessories, Circuitry, Records, Gauge, Kits	A23H	Plug-in Head	3.00	2.00
	A30M	SME Mounting Board (3012) for Thorens TD124	15.00	10.00
	A39M	SME Mounting Board (3009 and 3009HE) for Thorens TD124	15.00	10.00
	M60	Line Preamplifier	25.00	16.67
	M61-1	Stereo Preamplifier	34.00	22.67
	M61-2	Stereo Preamplifier	35.00	23.33
	M61-3	Stereo Preamplifier	33.00	22.00
	M64	Universal Stereo Preamplifier	34.00	22.67
	M64-2E	Universal Stereo Preamplifier	34.00	22.67
	M65	Preamplifier	30.00	20.00
	M65E	Preamplifier	33.00	22.00
	S2	SME Light Weight Shell	7.50	5.00
	S2C9	SME Light Weight Shell/Counterweight (3009)	17.00	11.25
	S2C12	SME Light Weight Shell/Counterweight (3012)	17.00	11.25
	SEK-1	Stylus Evaluation Kit	95.00	63.34
	SFG-1	Stylus Force Gauge	24.00	16.00
	SFG-2	Stylus Force Gauge	4.95	3.30
TTR101	Trackability Test Record	3.95	2.40	
TTR102	Professional Cartridge Test Record	9.00	6.00	

Note—This price list supersedes previous list dated May 4, 1970.

(All prices subject to change without notice)

SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**AREA CODE: 312 • EVANSTON PHONE 328-9000 • CHICAGO PHONE 743-1600
CABLE: SHURE MICRO TWX: 910-231-0048 TELEEX: 72-4349**HIGH FIDELITY PRODUCTS**
Confidential Dealer Price List
Effective July 1, 1970

FOR INFORMATION ON:	CONTACT:
Products and Policies	R. W. PONTO Sales Manager
Delivery, Shipping, and Claims Information	W. C. TOWNE Sales Order Manager
Advertising-Publicity Programs, Advertising Literature, Product Promotions, Catalogs, Flyers, Merchandising Program	H. T. HARWOOD Sales Promotion Manager
Invoices, Credit Information and Billing Terms	J. J. KUPSCO Credit Manager
Repairs	J. W. PICKERT Service Manager

GENERAL INFORMATION**TERMS:**

1% 10th and 25th*, net 30 days

*All invoices dated from the 1st through the 15th of the month are due for payment on the 25th of the same month, and invoices dated from the 16th through the end of the month are due for payment on the 10th of the following month in order to take advantage of the discount.

SHIPPING:

F. O. B. our plant.

METHOD OF SHIPPING:

Unless otherwise specified:

United Parcel Service Areas—Up to 60 lbs. per shipment

Other areas via Parcel Post—Up to 40 lbs.

Larger shipments via best way or customer instructions

SALES POLICY

All merchandise is sold only to Authorized Shure Dealers.

RETURN AUTHORIZATION

Defective merchandise that is in warranty may be returned for replacement or repair without prior authorization from the factory.

Defective merchandise that is outside the warranty may be returned for repair without prior authorization from the factory. An estimate of repair cost will be forwarded, if requested, for your written approval before actual repair is started.

NO RETURNS FOR CREDIT WILL BE ACCEPTED UNLESS PRIOR AUTHORIZATION HAS BEEN OBTAINED FROM THE FACTORY.

A Request for Return Authorization must be filled out by your Representative and forwarded to us. The return must be accompanied by a copy of the Return Authorization.

Recommended resale prices are shown only for information and identification, and no person shall represent any recommended resale price to be the usual retail selling price when it exceeds the price at which any product is usually sold in the trade area where the representation is made.

SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**AREA CODE: 312 - EVANSTON PHONE 328-9000 • CHICAGO PHONE 743-1600
CABLE: SHURE MICRO TWX: 910-231-0048 TELEX: 72-4349**PROFESSIONAL PRODUCTS**

PROFESSIONAL USER NET PRICES

EFFECTIVE: JULY 1, 1970

GENERAL INFORMATION

PRODUCTS INCLUDED IN THIS FOLIO ARE AVAILABLE THROUGH ANY SHURE PROFESSIONAL PRODUCTS DEALER. A LISTING OF THESE DEALERS IN YOUR AREA IS AVAILABLE UPON REQUEST.

MODEL NUMBER		PROFESSIONAL NET PRICE
1. MICROPHONES		
SM5A	Unidirectional Dynamic Boom--50 ohms	\$255.00
SM5B	Unidirectional Dynamic Boom--150 ohms	255.00
SM33	Unidirectional Ribbon	150.00
SM50	Omnidirectional Dynamic	78.00
SM51	Lavalier Dynamic	72.00
SM53	Unidirectional Dynamic	153.00
SM56	Unidirectional Dynamic	96.00
SM57	Unidirectional Dynamic	75.00
SM58	Unidirectional Dynamic	96.00
SM60	Omnidirectional Dynamic	49.20
SM76	Omnidirectional Dynamic	120.00
300	Bidirectional Ribbon	102.60
544	Unidirectional Dynamic for Gooseneck Mounting	54.60
544-G6	Unidirectional Dynamic with 6-inch Gooseneck	56.40
544-G12	Unidirectional Dynamic with 12-inch Gooseneck	57.00
544-G18	Unidirectional Dynamic with 18-inch Gooseneck	57.60
561	Omnidirectional Dynamic for Gooseneck Mounting	22.20
571	Miniature Omnidirectional Dynamic	66.00
572G	Miniature Omnidirectional Dynamic with 12-inch Gooseneck	75.00
2. DISC REPRODUCERS--PHONO CARTRIDGES, TONE ARMS, STYLI		
M44-5	Stereo Phono Cartridge	21.95
M44-7	Stereo Phono Cartridge	19.95
M44C	Stereo Phono Cartridge	17.95
M44E	Stereo Phono Cartridge	24.95
M91E	Stereo Phono Cartridge	49.95
M93E	Stereo Phono Cartridge	39.95
M232	12-inch Tone Arm	32.75
M236	16-inch Tone Arm	35.00
N44-1	1 Mil (LP) Stylus for M44 Series	10.00
N44-3	3 Mil (78 RPM) Stylus for M44 Series	10.00
N44-5	Replacement Stylus for M44-5	11.00
N44-7	Replacement Stylus for M44-7	9.75
N44C	Replacement Stylus for M44C	9.70
N44E	Replacement Stylus for M44E	12.50
N75-3	3 Mil (78 RPM) Stylus for V-15 TYPE II, V-15 II-7, M91E, M93E	10.00
N91E	Replacement Stylus for M91E (or M93E)	24.50
N93E	Replacement Stylus for M93E (or M91E)	19.50
V-15 TYPE II	Stereo Phono Cartridge	67.50
V-15 II-7	Stereo Phono Cartridge	62.50
VN2E	Replacement Stylus for V-15	25.00
VN15E	Replacement Stylus for V-15 TYPE II	27.00
VN7	Replacement Stylus for V-15 II-7	24.00
3009 *	SME Tone Arm--12-inch	117.50
3009HE *	SME Tone Arm--12-inch (Horizontal Cable Entry)	123.75
3012 *	SME Tone Arm--16-inch	128.00

* SHURE DISTRIBUTES THE SME TONE ARMS ONLY IN THE U.S.A. AND CANADA.

MODEL NUMBER		PROFESSIONAL NET PRICE
3. MIXERS, PREAMPLIFIERS, ACCESSORIES		
A67B	Battery Power Supply for M67	\$ 15.00
A67H	Handle/Tilt Bracket	13.20
A68R	19-inch Rack Panel Kit for M67	8.40
AC60	Microphone Mixer Carrying Case (Replaces AC68)	24.00
M67	Microphone Mixer/Remote Amplifier--120 Volts, 50/60 CPS	162.00
M67-2E	Microphone Mixer/Remote Amplifier--240 Volts, 50/60 CPS, with 3-core cable, no plug	165.60
SE20	Solid State Stereo Transcription Preamplifier--120-240 Volts, 50/60 CPS	336.00
4. MICROPHONE ACCESSORIES		
A2WS	Windscreen for SM56, SM57, SM76, 544, and 571	4.20
A25B	Stand Adapter for SM57, SM58, and 544	3.90
A51L	Lavalier Assembly for SM51	4.80
A53B	Boom Mount for SM53	27.00
A53C	Isolation Cable	7.50
A53E	Extension Arm	18.00
A53M	Isolation Mount for SM53	15.00
A53WS	Windscreen for SM53	9.00
A57C	Stand Adapter for SM60 and SM76	4.20
A57L	Lavalier Assembly for 570 and 571	3.00
A57P	Stand Adapter for SM53	4.20
A57R	Stand Adapter for 571	4.20
A95A	Cable-type Transformer for use with all models (Low Z Male Cannon, Hi Z MC1F Connector)	12.60
A95F	Cable-type Transformer for use with all models (Low Z Female Cannon, Hi Z MC1F Connector)	14.40
A95FP	Cable-type Transformer for use with all models (Low Z Female Cannon, Hi Z Phone Plug Connector)	15.60
A95P	Cable-type Transformer for use with all models (Low Z Male Cannon, Hi Z Phone Plug Connector)	13.80
S33B	Desk Stand (Black)	10.50
S33P	Desk Stand (Professional Gray)	10.50
S39A	Vibration-Isolation Desk Stand	16.80

NOTE: THIS PRICE LIST SUPERSEDES PREVIOUS PRICE LIST DATED APRIL 7, 1969.
(PRICES SUBJECT TO CHANGE WITHOUT NOTICE.)

FOR PROFESSIONAL USER NET PRICES ON OTHER SHURE PRODUCTS, CONSULT
YOUR SHURE PROFESSIONAL PRODUCTS DEALER.