13.

RADIOTRONICS

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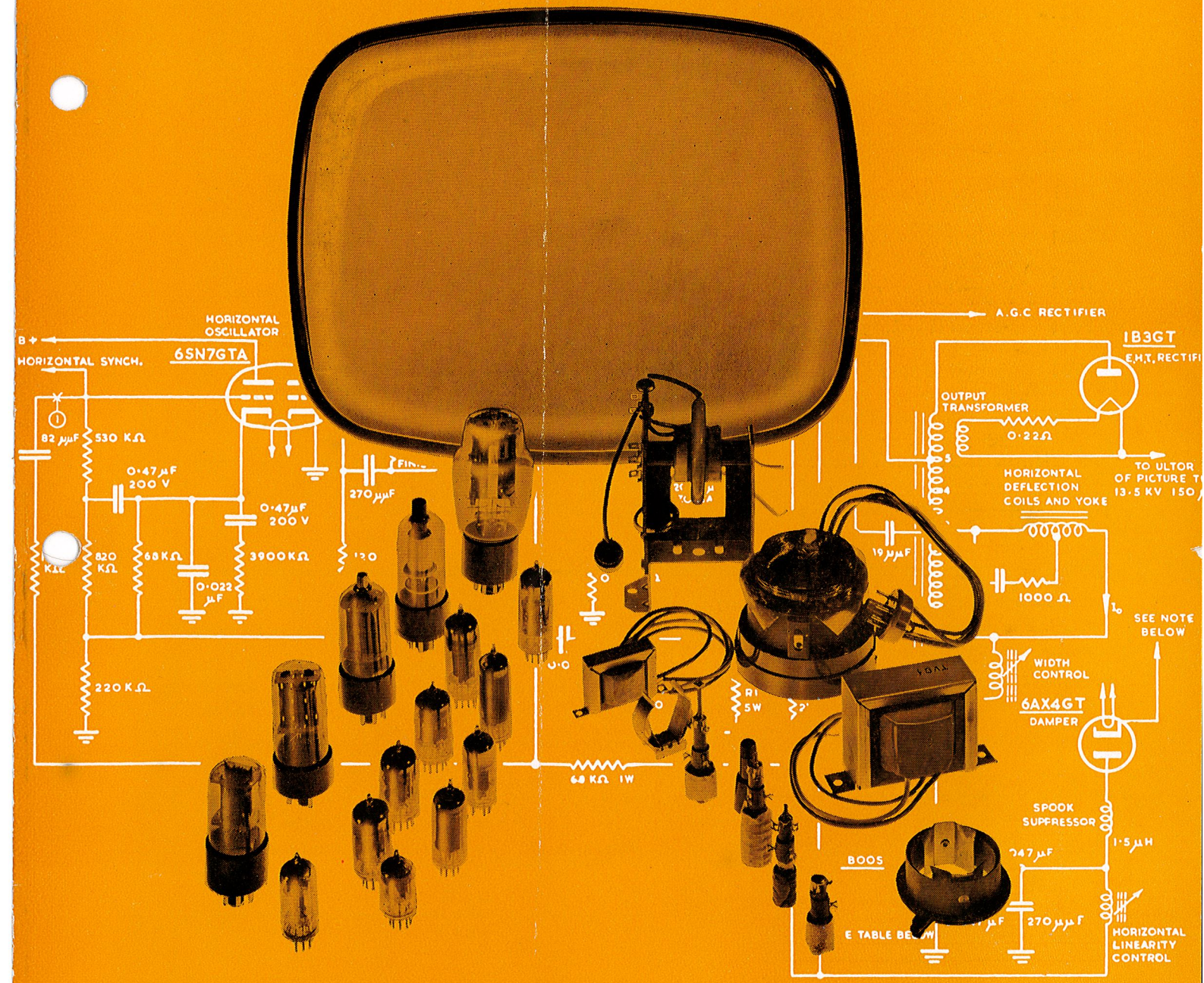
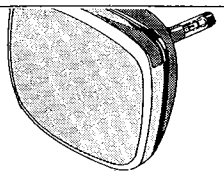
VOL. 22 FEBRUARY 1957 NO. 2



AMALGAMATED WIRELESS VALVE COMPANY PTY. LTD.



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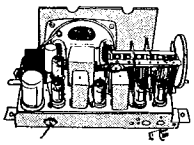

EDITOR ..... **A. J. GABB,** B.Sc. (Syd.), A.M.I.R.E. (Aust.)

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CHL1 HORIZONTAL LINEARITY COIL

The CHL1 horizontal linearity coil is a variable inductor designed for the adjustment of the horizontal linearity of the picture in a television receiver. An adjustable ferrite core is used, together with a "clip-on" type of former support which is designed to facilitate mounting by simply pushing into two holes punched in the chassis.

DATA

Inductance Range (at 1000 c/s):

Maximum	>8.0 mH
Minimum	<2.0 mH

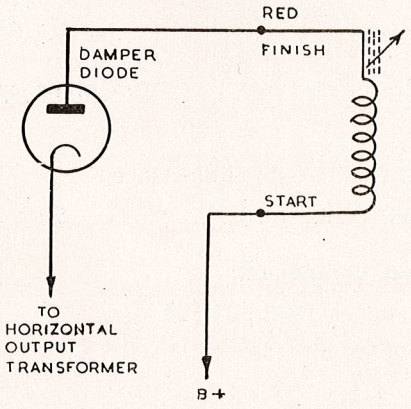
Resistance (at 25°C.) ..... 17 ohms approx.

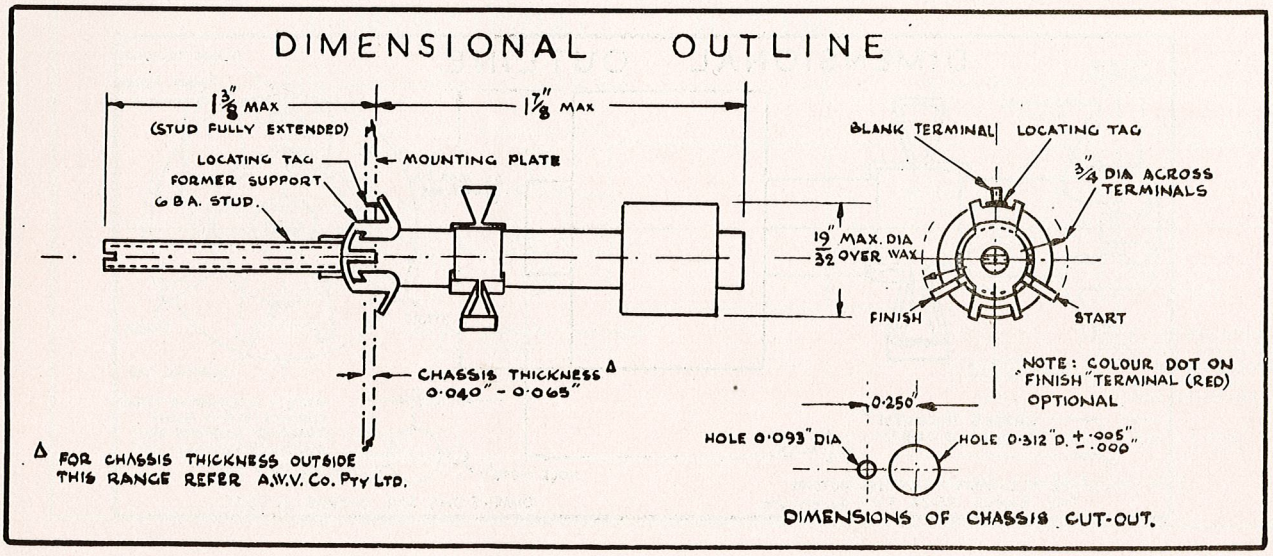
Operating Temperature ..... 100°C. max.
(Ambient + rise in coil)

Associated Components:

Horizontal Output Transformer	THO1
Deflection Yoke	Y70D1

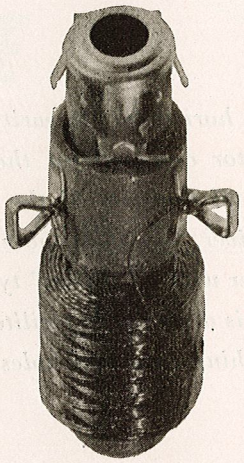
Simplified Schematic





CHS1 HORIZONTAL SINE WAVE COIL

The CHS1 horizontal sine wave coil is designed for use with a horizontal blocking oscillator transformer and when used in an appropriate circuit will greatly improve the stability of the horizontal oscillator. An adjustable ferrite core is used, together with a "clip-in" type of former support which is designed to facilitate mounting by simply pushing into two holes punched in the chassis.



DATA

Inductance Range (at 1000 c/s):

Maximum ..... >11.0 mH

Minimum ..... < 6.2 mH

Resistance (at 25°C.) ..... 55 ohms approx.

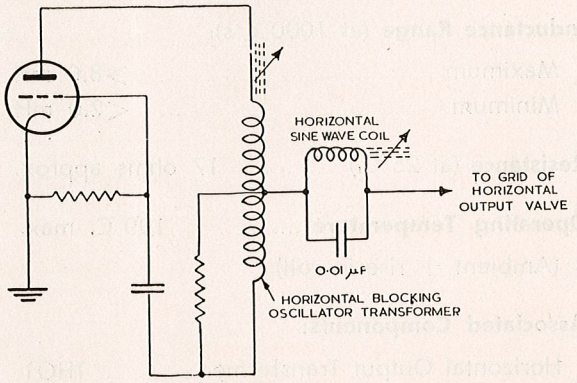
Q

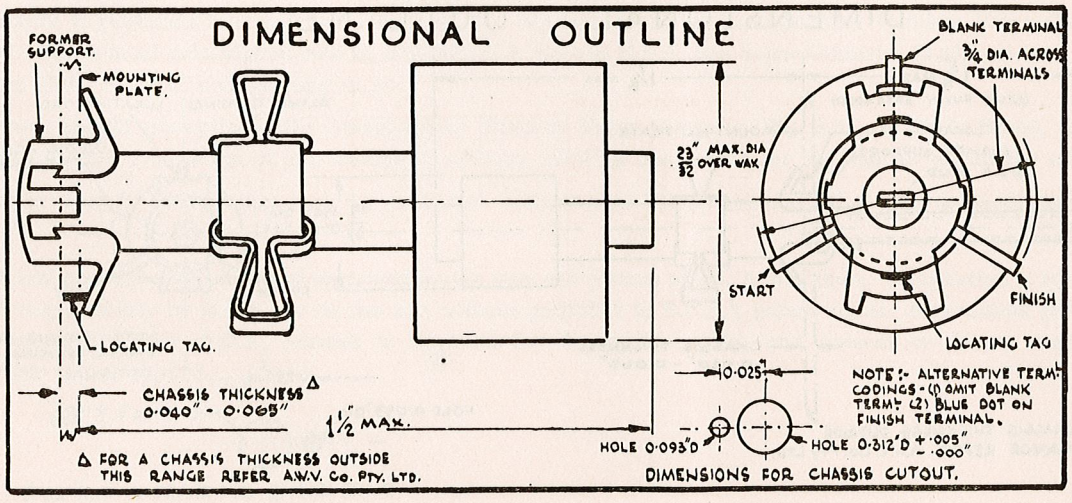
(at 50 Kc/s with inductance adjusted to 9.3 mH) ..... 50 ± 10%

Associated Component:

Horizontal Blocking Oscillator Transformer THB1

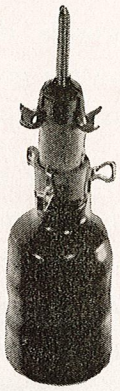
Simplified Schematic





CHW1 HORIZONTAL WIDTH COIL

The CHW1 horizontal width coil is a variable inductor designed for the adjustment of the picture width in a television receiver. An adjustable ferrite core is used, together with a "clip-in" type of former support which is designed to facilitate mounting by simply pushing into two holes punched in the chassis.



DATA

Inductance Range (at 1000 c/s):

Maximum	> 16 mH
Minimum	<3.0 mH

Resistance (at 25°C.) ..... 12 ohms approx.

Maximum Alternating Current:

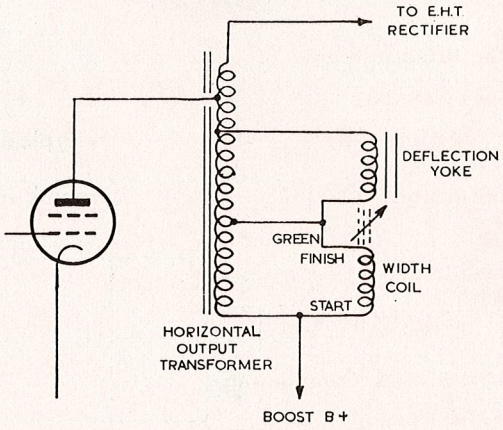
15,625 c/s (with core adjusted for minimum inductance) ..... 300 mA r.m.s.

Operating Temperature ..... 100° C. max.
(Ambient + rise in coil)

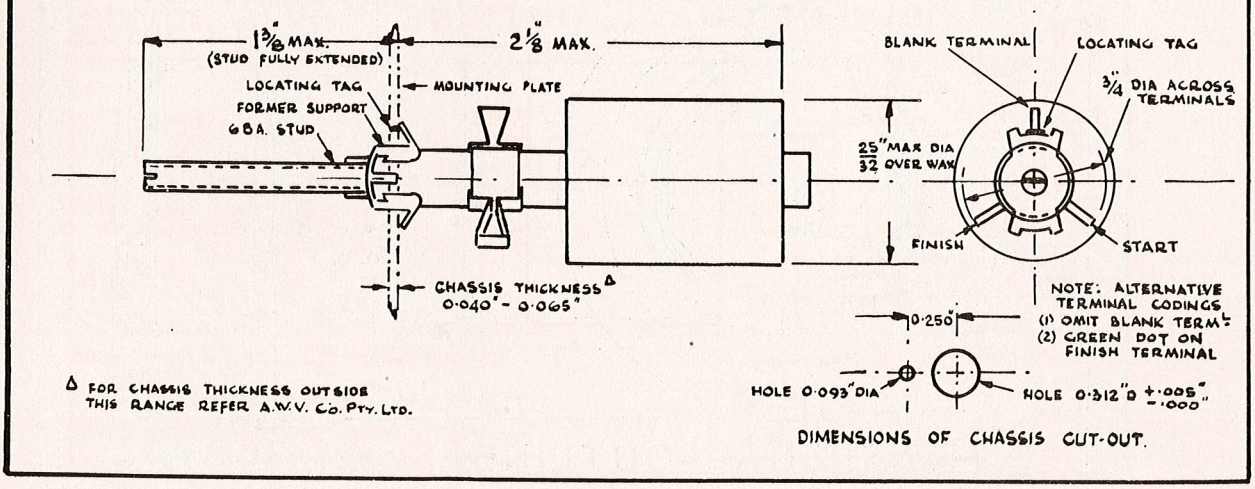
Associated Components:

Horizontal Output Transformer	THO1
Deflection Yoke	Y70D1

Simplified Schematic



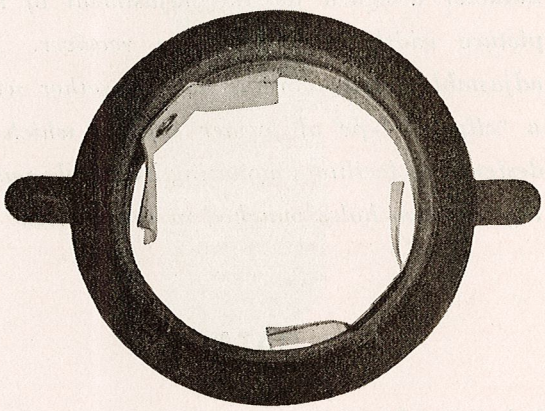
DIMENSIONAL OUTLINE



MCA1 CENTRING MAGNET ASSEMBLY

The MCA1 centring magnet assembly is designed to provide the magnetic field required to centre the picture on the screen of electrostatic-focus picture tubes.

The design is such that the field strength can be varied by adjusting the position of the two permanent magnets in relation to one another, and the direction of the field can be varied by rotating the magnets as a pair.



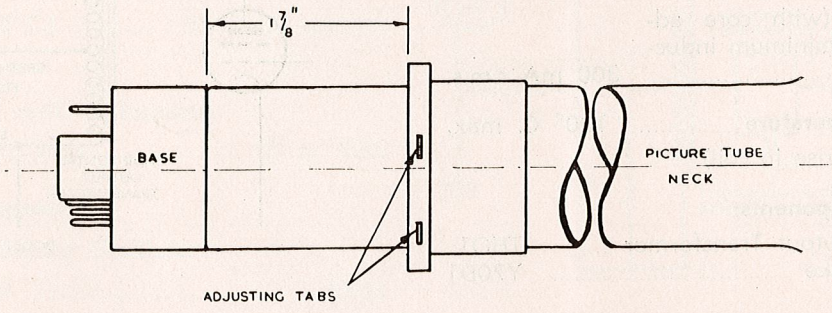
DATA

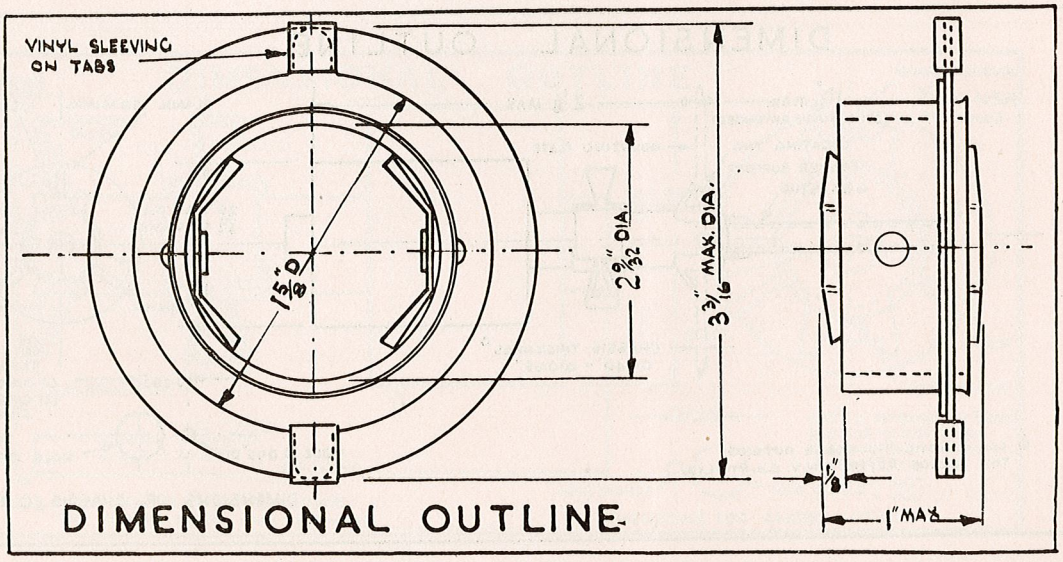
General Characteristics:

Field strength Range:

Minimum	< 1.0 Oersted
Maximum	10 ± 2 Oersted

Typical Mounting Position

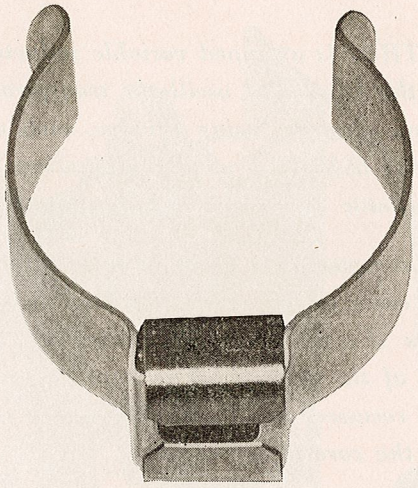




MIT1 ION TRAP MAGNET ASSEMBLY

The MIT1 ion trap magnet assembly is of the single field, clip-on type intended for picture tubes having nominal neck diameter of $1\frac{7}{16}$". It is suitable for use with Radiotron picture tubes requiring the field strength specified below for the re-bending of the electron beam.

The construction of the Type MIT1 allows the assembly to slide easily on the neck of the picture tube and permits easy adjustment of the ion trap magnet assembly to its correct position.

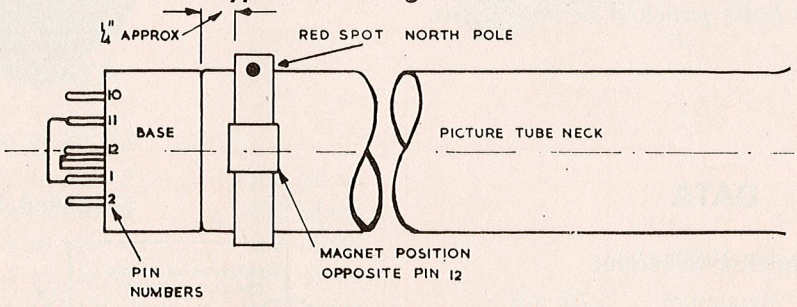


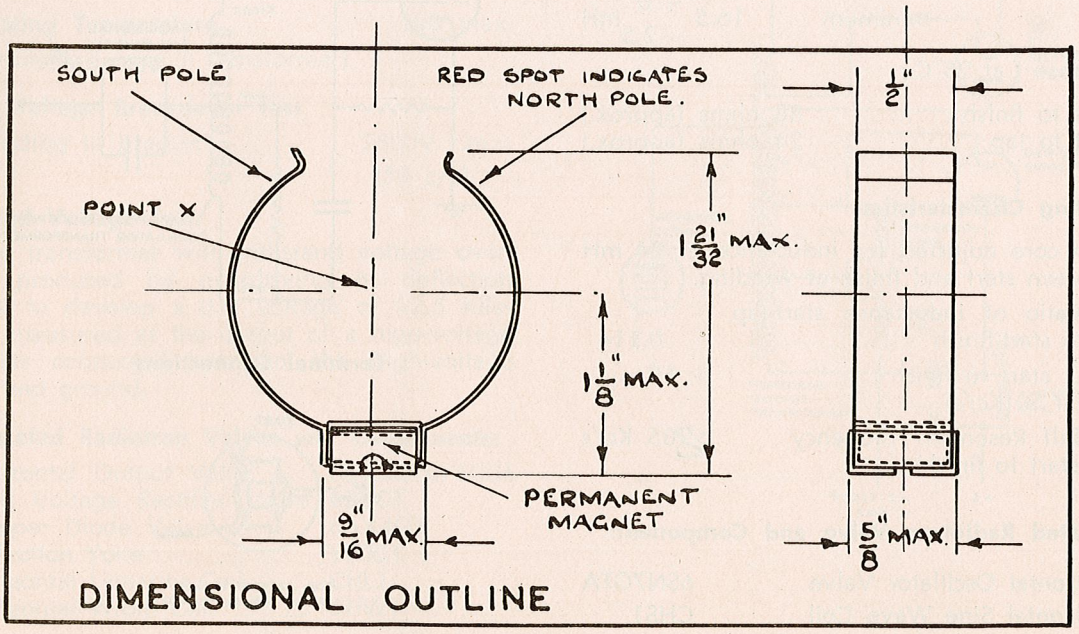
DATA

General Characteristics:

Field Strength (at centre of assembly-point X) .. 37 ± 10% Oersteds

Typical Mounting Position



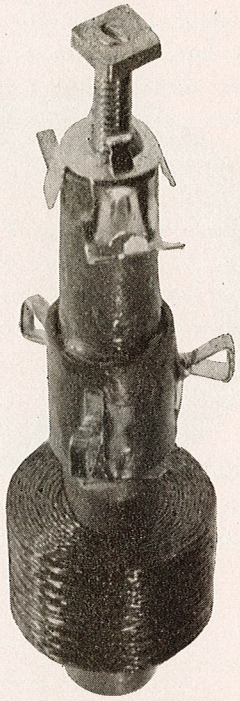


THB1 HORIZONTAL BLOCKING OSCILLATOR

The THB1 is a tapped variable inductor for use as the horizontal oscillator transformer in television receivers using a valve, such as the Radiotron 6SN7GTA, as a combination blocking oscillator and synchronising control.

This component is fitted with an adjustable ferrite core, which, with the knob supplied, becomes the horizontal frequency or "hold" control of the receiver. The knob is provided with a recessed end to fit the square capped end of the core-adjusting screw.

A feature of this transformer is the "clip-in" type of former support and locating tag which allows the component to be mounted by simply pushing into two holes punched in the chassis.



DATA

Inductance Range (at 1000 c/s):

Start to Finish maximum .. >75 mH

minimum .... $16.5 \begin{smallmatrix} +0 \\ -2.5 \end{smallmatrix}$ mH

Resistance (at 25°C.):

Start to finish ..... 88 ohms (approx.)
Start to tap ..... 24 ohms (approx.)

Operating Characteristics:

With core adjusted for inductance of 24 mH between start and finish of winding.

(a) Ratio of inductance start-tap to start-finish 0.114

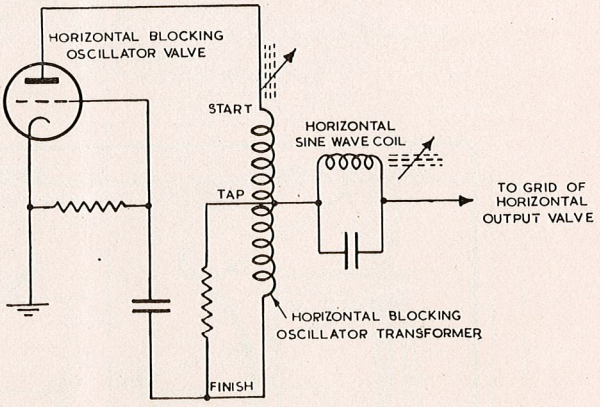
(b) Q start to finish ..... > 50 (at 50 Kc/s)

(c) Self Resonant Frequency ..... >2.85 Kc/s (start to finish)

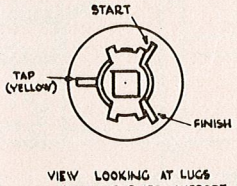
Associated Radiotron Valve and Component:

Horizontal Oscillator Valve 6SN7GTA
Horizontal Sine Wave Coil CHS1

Simplified Schematic



Terminal Connections



VIEW LOOKING AT LUGS FROM FORMER SUPPORT

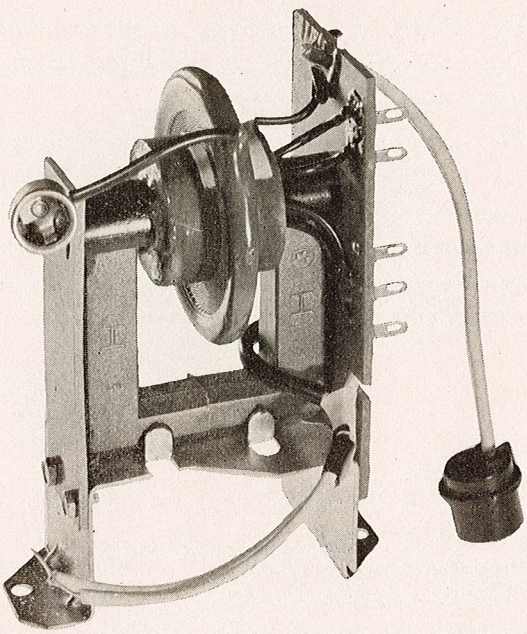
{Corrn. in March '57, P.20}

THO1 HORIZONTAL OUTPUT TRANSFORMER

The THO1 is a horizontal-deflection output transformer for use with picture tubes having a diagonal deflection angle of 70°.

A "B" supply voltage of between 250 and 285 V. (depending on the circuit used) is required for up to 120% of full horizontal scan. The transformer will supply an E.H.T. of up to 16 KV. at no load (approximately 14 KV. with a picture tube beam current of 150 μA) and will provide good deflection linearity.

The THO1 is an auto-transformer and utilises a ferrite core for high efficiency, light weight and compactness. It has a separate winding to provide filament power for the high voltage rectifier valve and employs coils impregnated with a moisture-resistant compound which does not support combustion.



DATA

Resistance (approx. at 25°C.):

Terminal	No. 1 to No. 2	2.3 ohms
Terminal	No. 2 to No. 3	12.2 ohms
Terminal	No. 3 to No. 4	3.2 ohms
Terminal	No. 4 to No. 5	8.5 ohms
Terminal	No. 5 to H.V. lead ..	350 ohms

Operating Temperature ..... 100° max.
(ambient + rise in transformer)

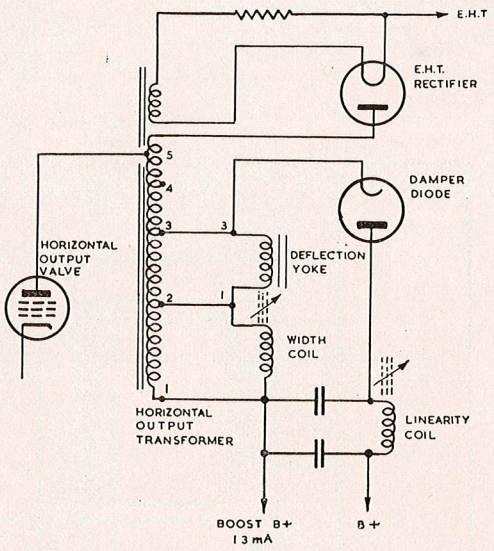
High Voltage Breakdown Test
Winding to bracket ..... 2500V r.m.s. (50 c/s):

Induced Voltage Test.
The transformer will withstand voltage overload produced by overdriving its deflection circuit to develop a d.c. voltage of 22.5 Kilovolts measured at the output of a high-voltage rectifier connected between the high-voltage lead and ground.

Associated Radiotron Valves and Components:

Horizontal Output Valve	6BQ6GTB/6CU6
High Voltage Rectifier Valve	1B3GT
Damper Diode Valve	6AX4GT
Deflection Yoke	Y70D1
Horizontal Linearity Coil	CHL1
Horizontal Width Coil	CHW1

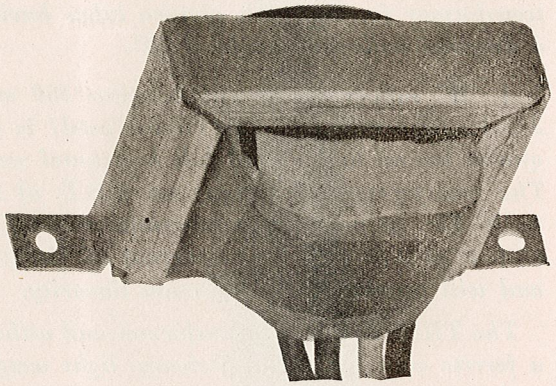
Simplified Schematic



TVB1 VERTICAL BLOCKING OSCILLATOR TRANSFORMER

The TVB1 is a blocking oscillator transformer designed for use in television receiver vertical oscillator circuits.

The transformer has an open construction which facilitates its use in either above-chassis or under-chassis mountings. Highest quality insulation and impregnation are used to ensure adequate protection against the ingress of moisture and to give maximum reliability.



DATA

Turns Ratio:
Primary to Secondary ..... 4.5 : 1

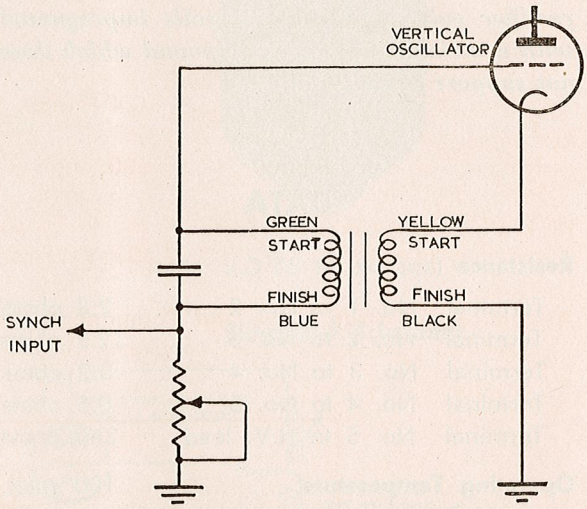
Resistance (at 25°C.):
Primary (green to blue) ..... 480 ohms
Secondary (yellow to black) ..... 140 ohms

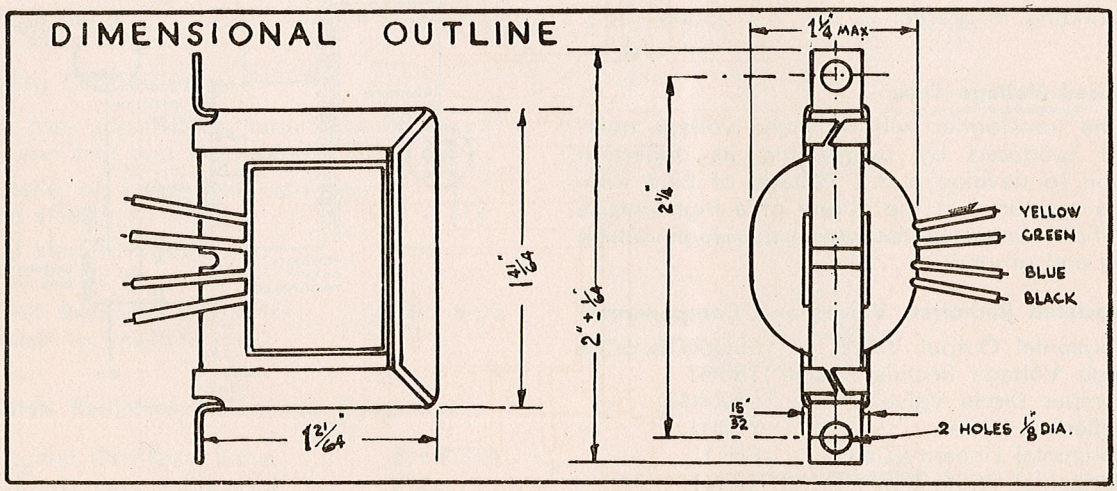
Inductance (at 20 V. 1000 c/s, zero D.C.) ..... 18 H min.
(Measured between green and black leads with blue connected to yellow)

High Voltage Breakdown Test:
Between windings and winding to core ..... 1500 V r.m.s. 50 c/s

Associated Radiotron Valve:
Vertical Oscillator Valve ..... 6SN7GTA or 12BH7

Simplified Schematic

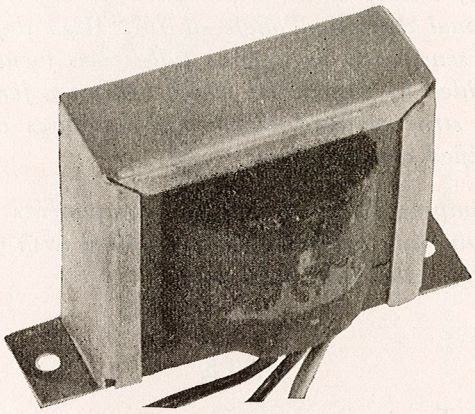




TVO1 VERTICAL OUTPUT TRANSFORMER

The TVO1 vertical output auto-transformer is designed for use in a television receiver utilising a triode such as the Radiotron 12BH7 for the vertical output valve.

The component uses high quality insulation and impregation to ensure reliability of operation and adequate protection against moisture absorption.



DATA

Turns Ratio:
Primary to Secondary ..... 15 : 1
(Start-Finish to Tap-Finish)

Primary Inductance:
(30 Volts 50 c/s superimposed on a d.c. of 10 mA) ..... ~~40 H min.~~ >38H.

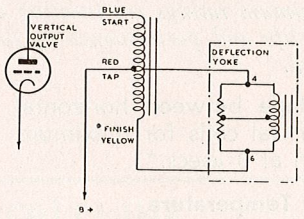
Leakage Inductance:
(1 Volt 1000 c/s on primary and with secondary shorted) ..... 0.4 H max.

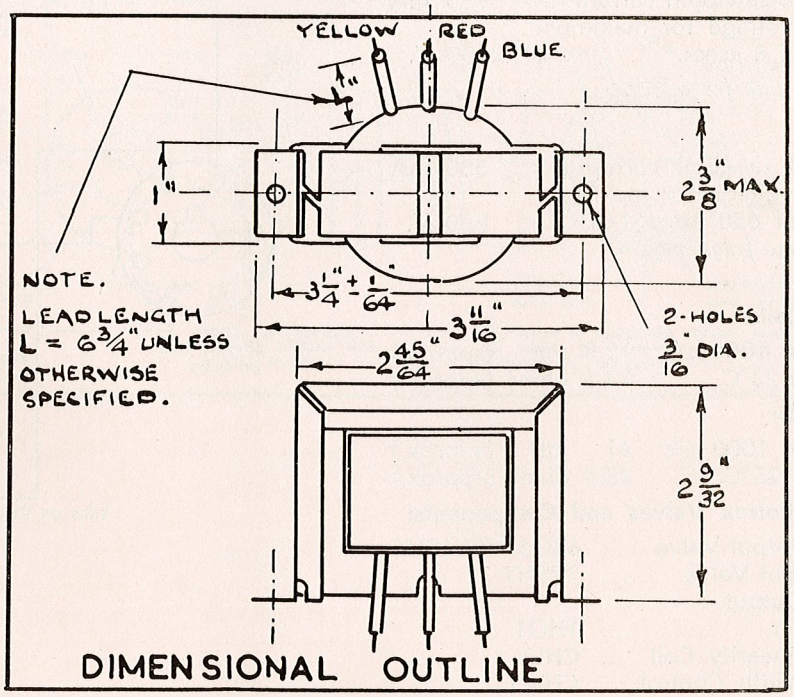
Resistance (at 25°C.):
Primary (blue to yellow) ..... 680 ohms
Secondary (red to yellow) ..... 3 ohms

High Voltage Breakdown Test:
Winding to core ..... 2,500 V r.m.s. 50 c/s

Associated Radiotron Valve and Component:
Vertical Output Valve 12BH7
Deflection Yoke Y70D1

Simplified Schematic



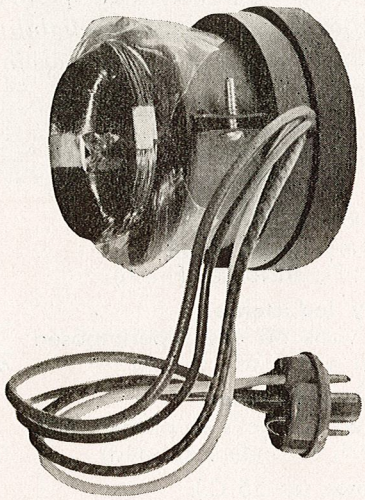


{Corr. ex March '57, P. 40}

Y70D1 70° DEFLECTION YOKE

The Y70D1 is a magnetic deflection yoke designed for use with directly viewed picture tubes, having a neck diameter of $1\frac{7}{16}$" and diagonal deflection angle of 70°. High deflection sensitivity, as well as full-screen focus, is provided by the Y70D1 which utilizes a ferrite core structure and distributed windings of a modified cosine design.

Damping and neutralizing components are built-in and the assembly is supplied with connecting cable and octal plug.



DATA

General:

Outside diameter	3.25" max.
Inside diameter	1.504" min.

Maximum Ratings:

These maximum ratings are limiting values above which the life and performance of the yoke may be impaired.

Peak Voltage between horizontal and vertical coils for maximum duration at 8 μsecs.*	3000 V.
Operating Temperature	50° C.

Horizontal Coils:

Peak to peak sawtooth current*	980 mA
Peak pulse voltage for maximum duration of 8 μsecs.*	2400 V.

* *at 15625 c/s line frequency.*

Vertical Coils:

Peak to peak sawtooth current †	550 mA
Peak pulse voltage for maximum duration of 650 μsecs. †	800 V.

† *at 50 c/s frame frequency.*

Characteristics:

Horizontal Coils:

Inductance at 1000 c/s	13.3 mH	(approx.)
Resistance at 25°C.	23.5 ohms	(approx.)

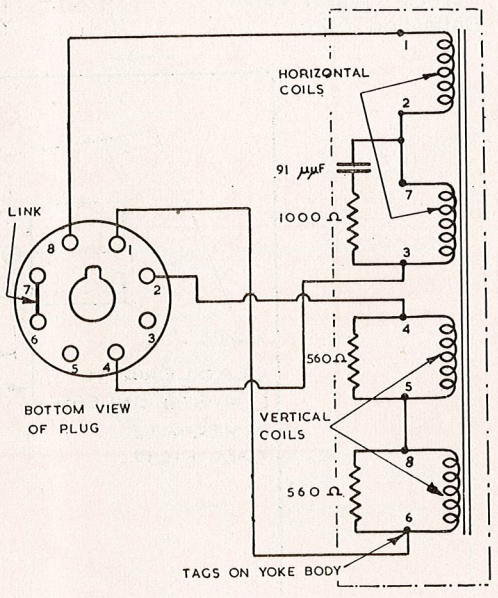
Vertical Coils:

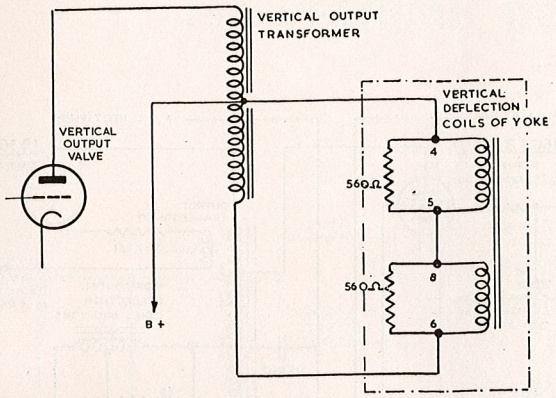
Inductance at 1000 c/s	41 mH	(approx.)
Resistance at 25°C.	48.5 ohms	(approx.)

Associated Radiotron Valves and Components:

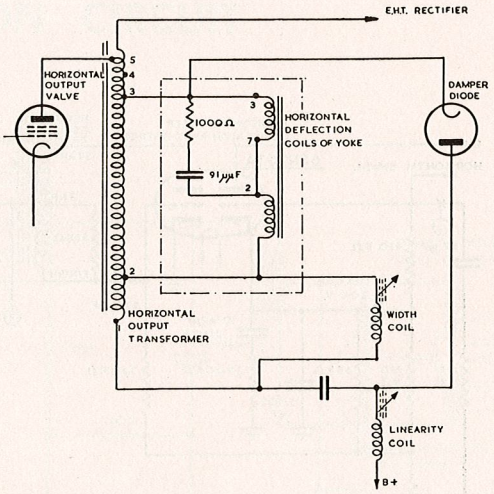
Horizontal Output Valve	6BQ6GTB/6CU6
Vertical Output Valve	12BH7
Horizontal Output Transformer	THO1
Horizontal Linearity Coil	CHL1
Horizontal Width Control	CHW1

Terminal Connections

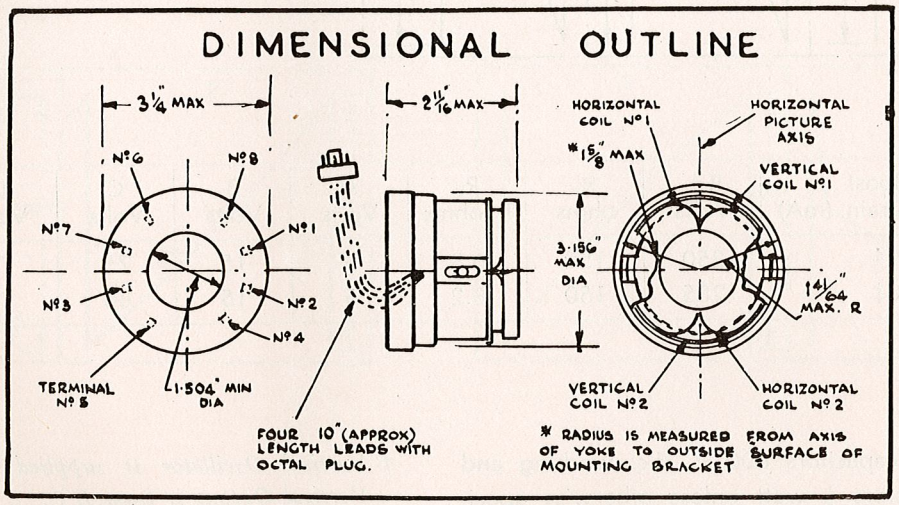




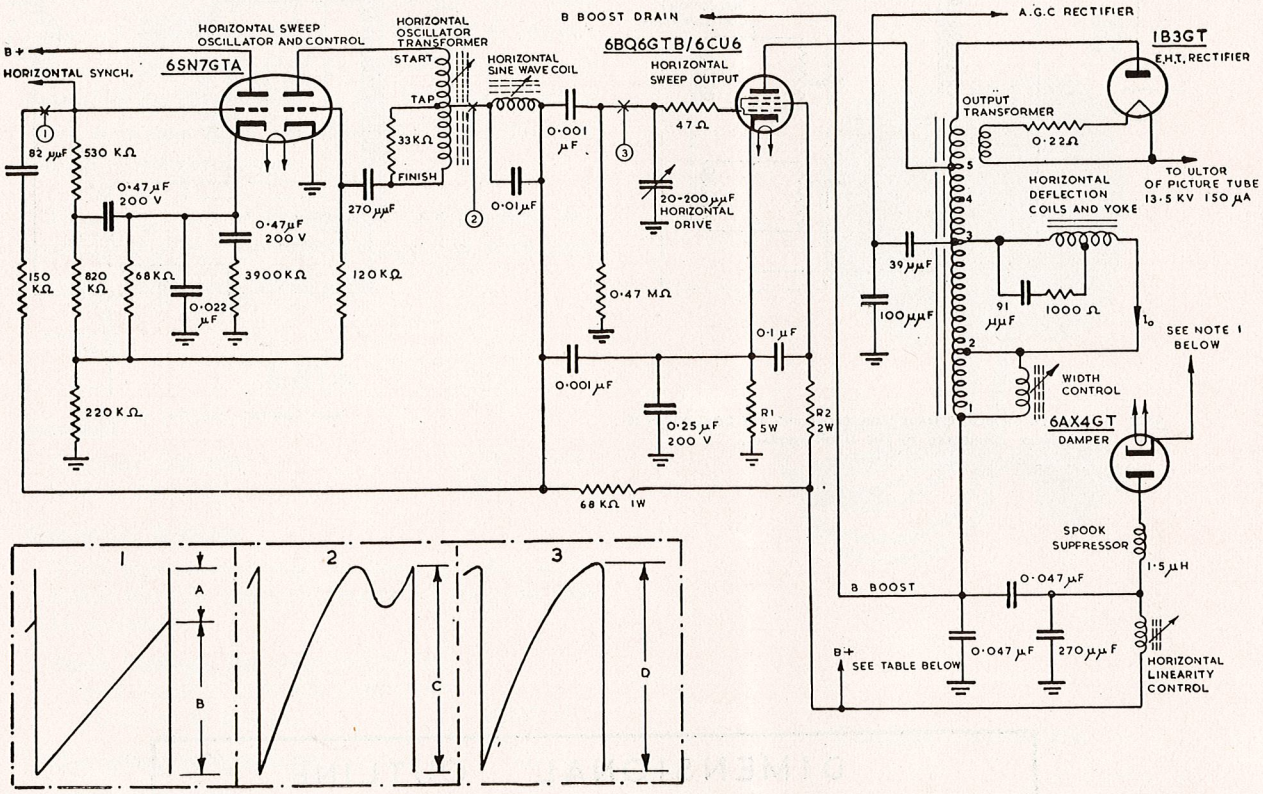
NOTE : PROVISION SHOULD BE MADE FOR GROUNDING THE CORE WHICH IS INTERNALLY CONNECTED TO THE MOUNT STRAP.



HORIZONTAL OUTPUT CIRCUIT.



70° HORIZONTAL DEFLECTION CIRCUIT



B Boost Current Drain (mA)	B+ Volts	R_1 ohms	R_2 K. ohms	A Volts	B Volts	C Volts	D Volts	Ia* mA p.p
1†	250	150	6.8	5	15	75	70	812
13‡	285	150	8.2	5	15	80	74	812

Notes: All capacitors 600 V. d.c. working and resistors ½ watt unless otherwise specified.

(1) Cathode of 6AX4GT is connected to tap 4 on THO1 in 1mA B Boost Circuit (see Note †).

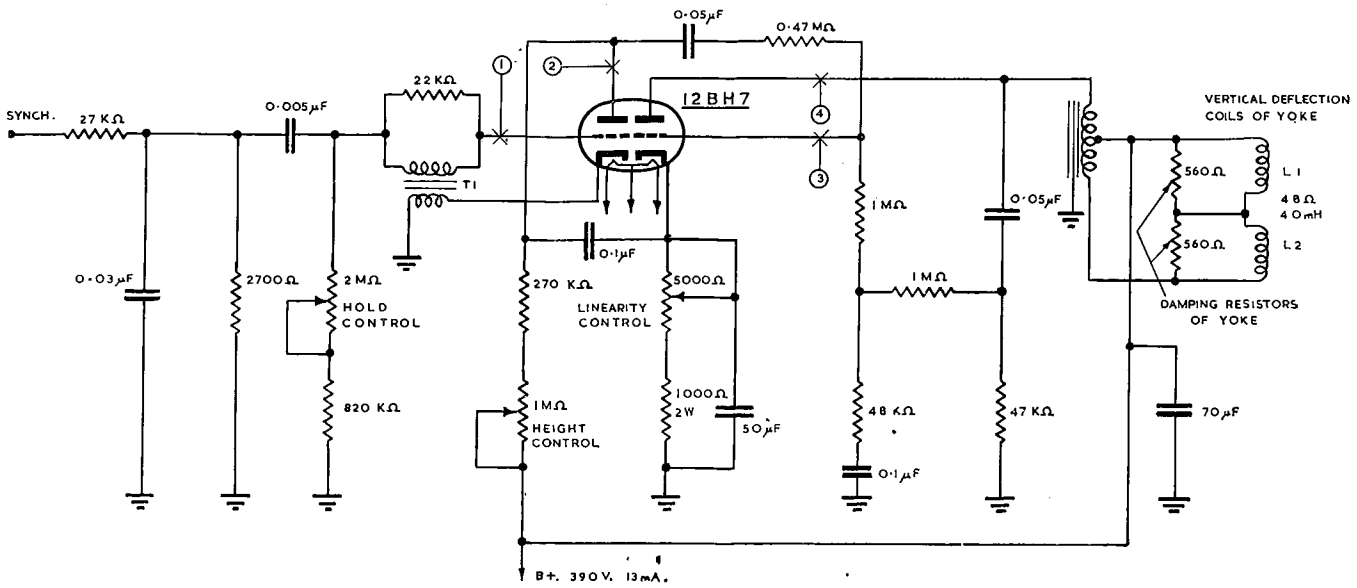
or (2) Tap 3 on THO1 in 13mA loaded circuit (see Note ‡).

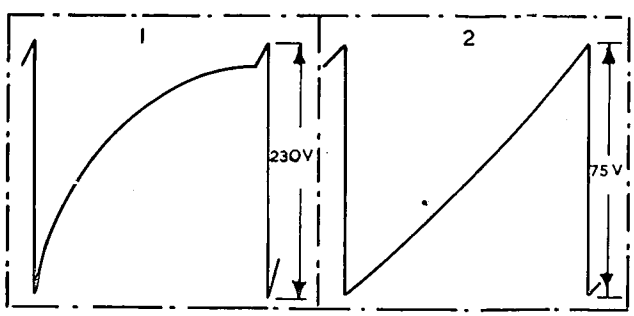
† *Vertical Oscillator is supplied from B Boost. Vertical Output is from B+.*

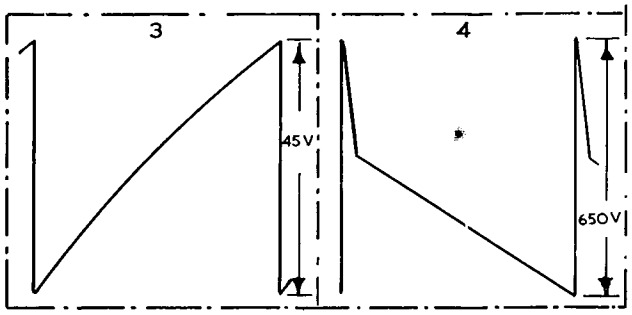
‡ *Vertical Oscillator and Vertical Output both supplied from B Boost.*

* *Horizontal output current, Io, is measured with width control set to minimum, i.e., full scan +5%.*

70° VERTICAL DEFLECTION CIRCUIT





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