EDDYSTONE 'ALL WORLD TWO'

A POWERFUL 2 VALVE SHORT WAVE RECEIVER WITH BANDSPREAD TUNING. FOR BATTERY OPERATION.

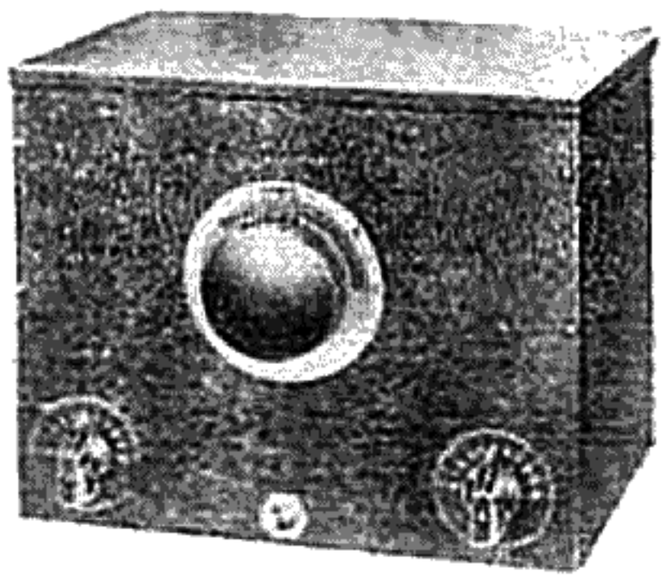
SPECIFICATION FEATURES.

- "Eddystone" Slow Motion Bandspread Tuning Unit allows each section of Tank Condenser to be spread over the full scale of dial. Permits widest calibration and tremendously improved selectivity.
- CALIBRATED BANDSETTING. Using patented "Eddystone" 10 x 14 m.mfd. Tank Condenser. Ten predetermined settings each covering capacity of 14 m.mfd.
- HIGH SENSITIVITY—LOW NOISE LEVEL. Many receivers suffer from high noise level and consequent inaudibility of weak signals.
- PRE-SET REACTION WITH POTENTIOMETER GAIN CONTROL. No backlash; negligible effect on tuning.
- DIECAST ALUMINIUM CHASSIS. For extreme rigidity.
- CABINET. Strongly built steel in brown crackle finish.
- WAVERANGE. 15.5 to 52 metres with two coils provided. Calibration scales included with instruction Manual. Adaptable by extra coils to 200 metres.
- VALVES. A screened grid detector Mazda SP21C and Tetrode output Osram KT2 form an ideal combination.
- NO GRID BIAS BATTERY.
- LOW CURRENT CONSUMPTION. 5 m/A at 120 volts high tension and 1 amps. at 2 volts low tension current.
- POWER CABLE. Heavy duty 4 way lead supplied.

Complete with valves, coils and calibration charts. Aerial tested and ready for immediate use.

PRICE: £3.17.6

Hire purchase terms on A.W.2 COMPLETE with Valves, B.T.H. Phones and Batteries (£5.11.0 list). 20/- deposit and 6 payments of 16/4 monthly.

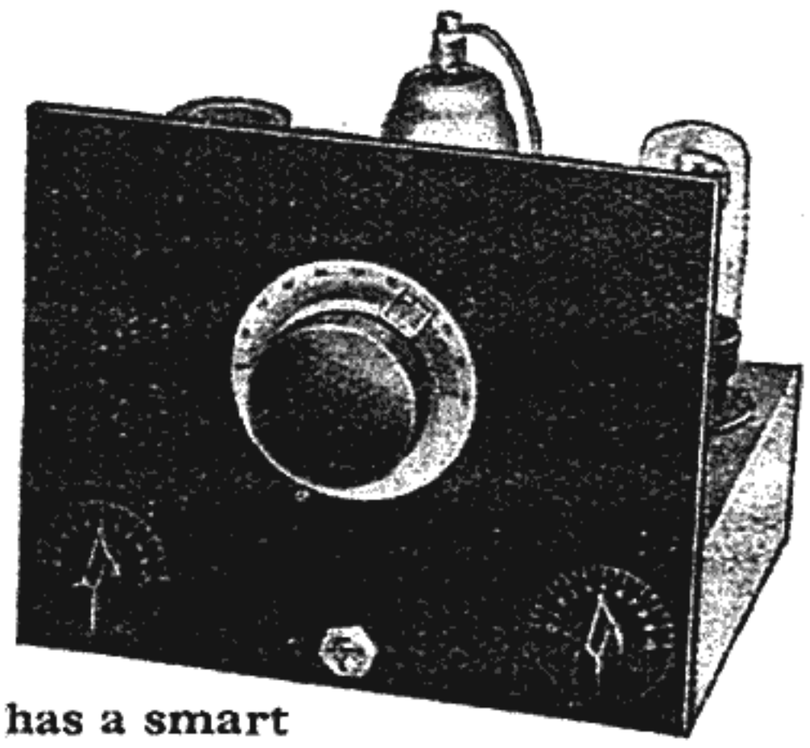


WEBB'S CARRY EVERY EDDYSTONE RECEIVER AND COMPONENT IN STOCK.

THE ALL WORLD TWO

15·5 TO 52 METRES.

A POWERFUL 2 VALVE SHORT WAVE BATTERY RECEIVER WITH BANDSPREAD TUNING.



The set has a smart front appearance—

The Eddystone All World Two receiver is designed to give adequate world wide headphone reception with a minimum expenditure. It is the outcome of considerable research in our laboratory and during extensive tests results were highly satisfactory; America, Australia and other long distant stations being consistently received with good volume and quality.

The set is inexpensive and easy to build; simple to operate and has small current consumption. It is equally suitable for short wave broadcast or amateur band reception since it is fitted with the special Eddystone Bandspread Tuning unit, which allows continuous bandspreading on all wavebands. The waverange covered by the two coils supplied with the receiver is 15 to 52 metres, but if it is wished to receive on intermediate bands between 50 and 200 metres, extra coils are available and no structural or wiring alterations necessary.

There is a high degree of sensitivity combined with low noise level, and careful design of the aerial input circuit has completely eliminated tuning blind spots. Constant and smooth reaction has negligible effect on tuning and complete stability of handling is assured. A rigid die-cast chassis houses the component parts and provides ample screening.

The theoretical circuit embodies a screened H.F. Pentode valve followed by an audio stage which can use either triode or pentode valve as desired. The aerial input circuit, although simple in design, was only satisfactorily developed after protracted experiments on many different types of aerials. It ensures complete freedom from tuning blind spots, thus saving the extra cost of an H.F. stage which is the generally accepted medium for overcoming such trouble. Regeneration is obtained by a modified Reinartz circuit, feedback current being controlled by varying the S.G. voltage with a potentiometer. The high tension battery is suitably isolated to prevent current leakage through the potential divider circuit.

CONSTRUCTION.

Proceed as follows:

The sockets for the aerial and earth and phone strips should be mounted and the strips finally screwed on the back of the chassis by the ¼" 6BA roundhead screws provided.

All holes in the chassis marked "E" on the practical wiring diagram *must* be carefully scraped above and below the chassis as earth connections are made at these points.

Mount the 1+1 mfd. condenser on the front of the chassis with countersunk screws, and fix the two valveholders and coil base in position. Do not forget the soldering tags "E" under some of the fixing screws.

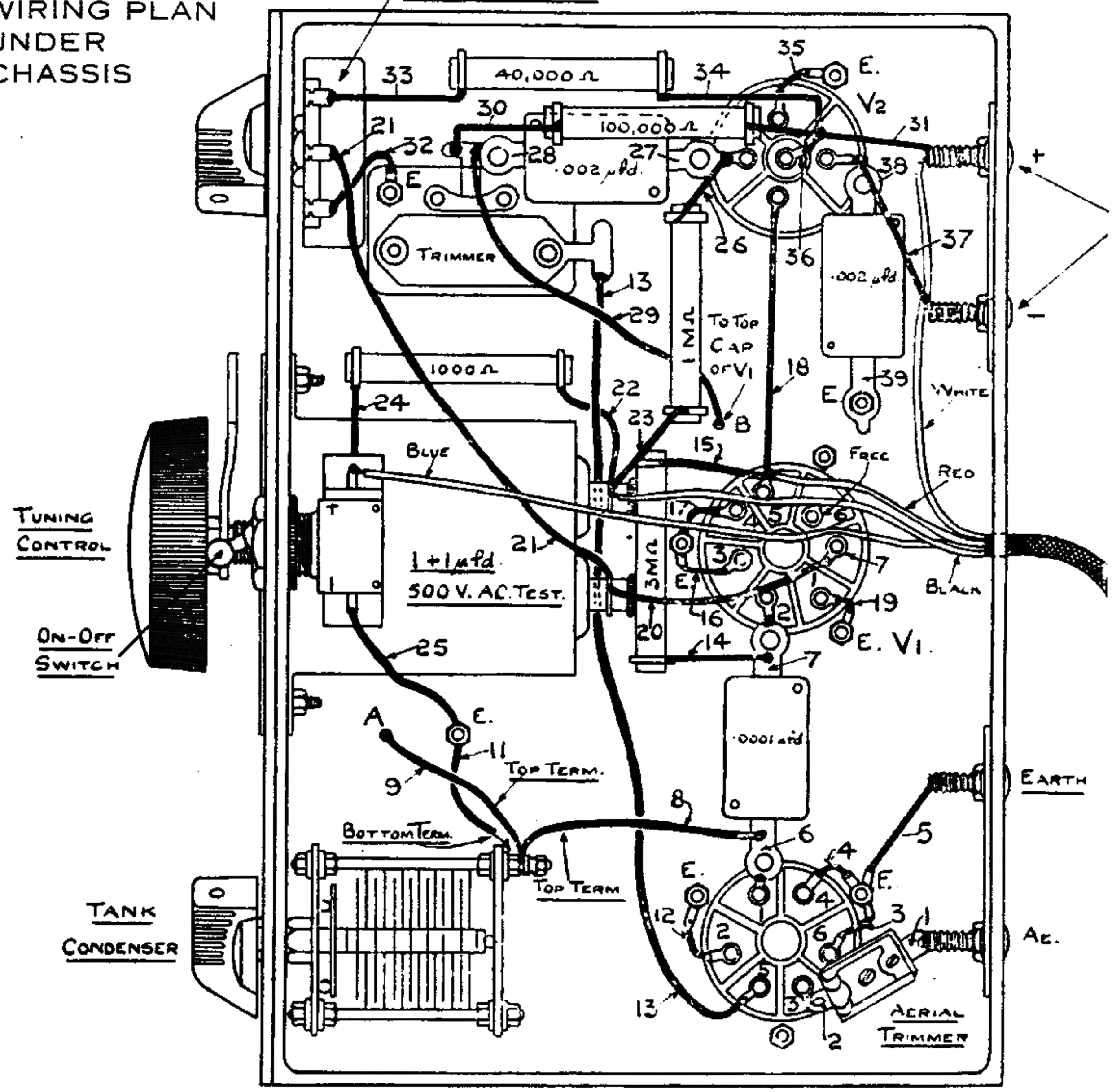
The reaction trimmer is now mounted in its appropriate fixing holes. The reaction potentiometer, on-off switch and tank condenser should be assembled on the chassis, the panel and 0-10 scales fitted, and the panel held in position by the switch, condenser and potentiometer fixing nuts.

To ensure absolutely noiseless reaction control the specified variable potentiometer should be used.

—and a tidy, attractive chassis lay out.

ALL WORLD TWO

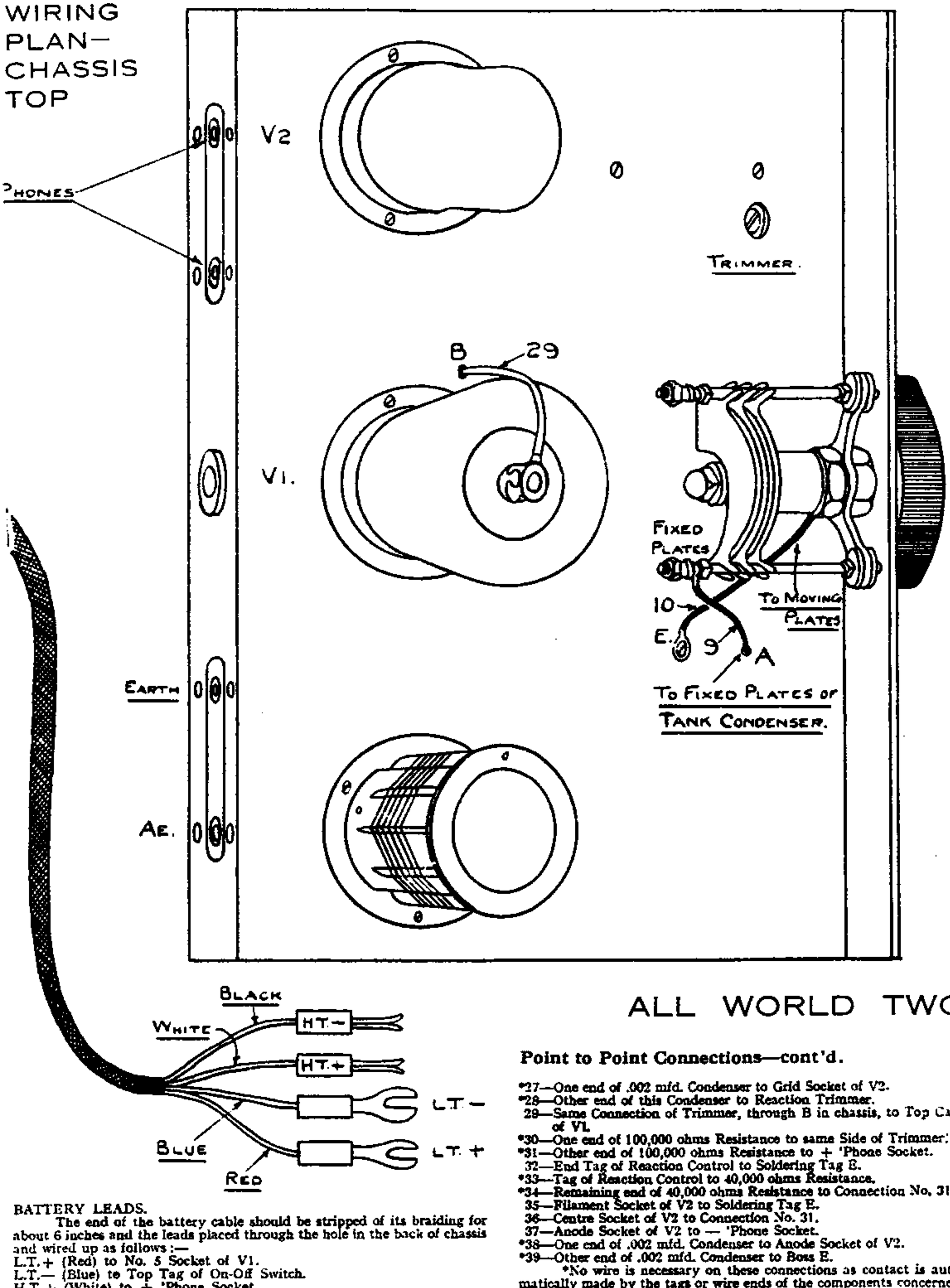
WIRING PLAN
UNDER
CHASSIS



POINT TO POINT CONNECTIONS.

The following Point to Point Connections are necessary:

*1—One end of Aerial Trimmer to Aerial Socket.
*2—Other end of Aerial Trimmer to Socket No. 3 on Coil Base.
3—Socket No. 6 of Coil Base to Soldering Tag E.
4—Socket No. 4 of Coil Base to Soldering Tag E.
5—Earth Socket to Soldering Tag E.
*6—One end of .0001 mfd. Condenser to Socket No. 1 on Coil Base.
*7—Other end of this Condenser to Socket No. 2 on Valveholder V1.
8—End of .0001 mfd. Condenser to Top Terminal (Fixed Plates) of Tank Condenser.
9—Top Terminal of Tank Condenser, through hole A in Chassis, to Fixed Plates of Tuning Condenser.
10—Moving Plates of Tuning Condenser to Soldering Tag E.
11—Bottom Terminal (Moving Plates) of Tank Condenser to Soldering Tag E.
12—Socket No. 2 of Coil Base to Soldering Tag E.
13—Socket No. 5 of Coil Base to Reaction Trimmer.
*14—One end of 3 megohm Leak to Socket No. 2 of V1.
*15—Other end of Leak to Socket No. 5 of V1.
16—Socket No. 3 of V1 to Soldering Tag E.
17—Socket No. 4 of V1 to Soldering Tag E.
18—Socket No. 5 of V1 to Filament Socket of Valveholder V2. Socket No. 6 is left free.
19—Socket No. 1 of V1 to Soldering Tag E.
20—Socket No. 7 of V1 to One Terminal of 1 +1 mfd. Condenser.
21—Same Terminal of Condenser Block to Middle Tag of Reaction Control.
*22—One end of 1000 ohm Resistance to other Terminal of Condenser Block.
*23—1 megohm Leak to Terminal of Condenser Block.
*24—Remaining end of 1000 ohm Resistance to Bottom Tag of On-Off Switch.
25—Tag of On-Off Switch to Soldering Tag E.
*26—Remaining end of 1 megohm Leak to Grid Socket of V2.



ALL WORLD TWO

BATTERY LEADS.

The end of the battery cable should be stripped of its braiding for about 6 inches and the leads placed through the hole in the back of chassis and wired up as follows :—

L.T.+ (Red) to No. 5 Socket of V1.
L.T.— (Blue) to Top Tag of On-Off Switch.
H.T.+ (White) to + 'Phone Socket.
H.T.— (Black) to Condenser Block.

The end of the braiding may be bound with twine to make a neat ending.

Point to Point Connections—cont'd.

*27—One end of .002 mfd. Condenser to Grid Socket of V2.
*28—Other end of this Condenser to Reaction Trimmer.
29—Same Connection of Trimmer, through B in chassis, to Top Cap of V1.
*30—One end of 100,000 ohms Resistance to same Side of Trimmer.
*31—Other end of 100,000 ohms Resistance to + 'Phone Socket.
32—End Tag of Reaction Control to Soldering Tag E.
*33—Tag of Reaction Control to 40,000 ohms Resistance.
*34—Remaining end of 40,000 ohms Resistance to Connection No. 31.
35—Filament Socket of V2 to Soldering Tag E.
36—Centre Socket of V2 to Connection No. 31.
37—Anode Socket of V2 to — 'Phone Socket.
*38—One end of .002 mfd. Condenser to Anode Socket of V2.
*39—Other end of .002 mfd. Condenser to Boss E.

*No wire is necessary on these connections as contact is automatically made by the tags or wire ends of the components concerned.

ALL WORLD TWO—continued

The tank condenser spindle should be turned until the moving plates are fully out of mesh with the fixed plates and the pointer knob fixed opposite the 0 division on the scale by screwing up the small grub screw. By turning the knob clockwise, the condenser will rotate in 10 steps up to the maximum capacity.

Turn the reaction spindle as far anti-clockwise as it will go, and fix the pointer knob so that the pointer is placed at the position which the small hand of a clock points to at eight o'clock.

It is advisable to leave the tuning condenser off the panel until all the wiring is finished. This enables the chassis to be mounted upside down on the edge of a table to facilitate wiring. Wires Nos. 9 and 10 may be connected at one end, but the free ends left until the rest of the wiring is completed.

Certain condenser and resistances not already assembled are automatically supported by their connections, so the wiring may now be commenced, and should be carried out without difficulty with the aid of the wiring plan on centre pages and point to point connection list on pages 4 and 5 overleaf.

RESISTANCE COLOUR CODE.

Resistance	*Body*	*Tip*	*Dot*
40,000 ohms	Yellow	Black	Orange
100,000 ohms	Brown	Black	Yellow
1 meg. ohms	Brown	Black	Green
3 meg. ohms	Orange	Black	Green
1,000 ohms	Brown	Black	Red

VALVES.

The kit has been designed around the Mullard SP2 Screened Grid and Mazda P220 Triode valves. The constructor may use any of the two other triode valves specified or alternatively one of the three pentode valves listed below.

The average total number of milliamps for any of the pentodes or triodes are given in the right-hand column below, from which it will be seen that the use of the pentode type of output does not increase the consumption of the receiver, but does in practice considerably add to the signal strength.

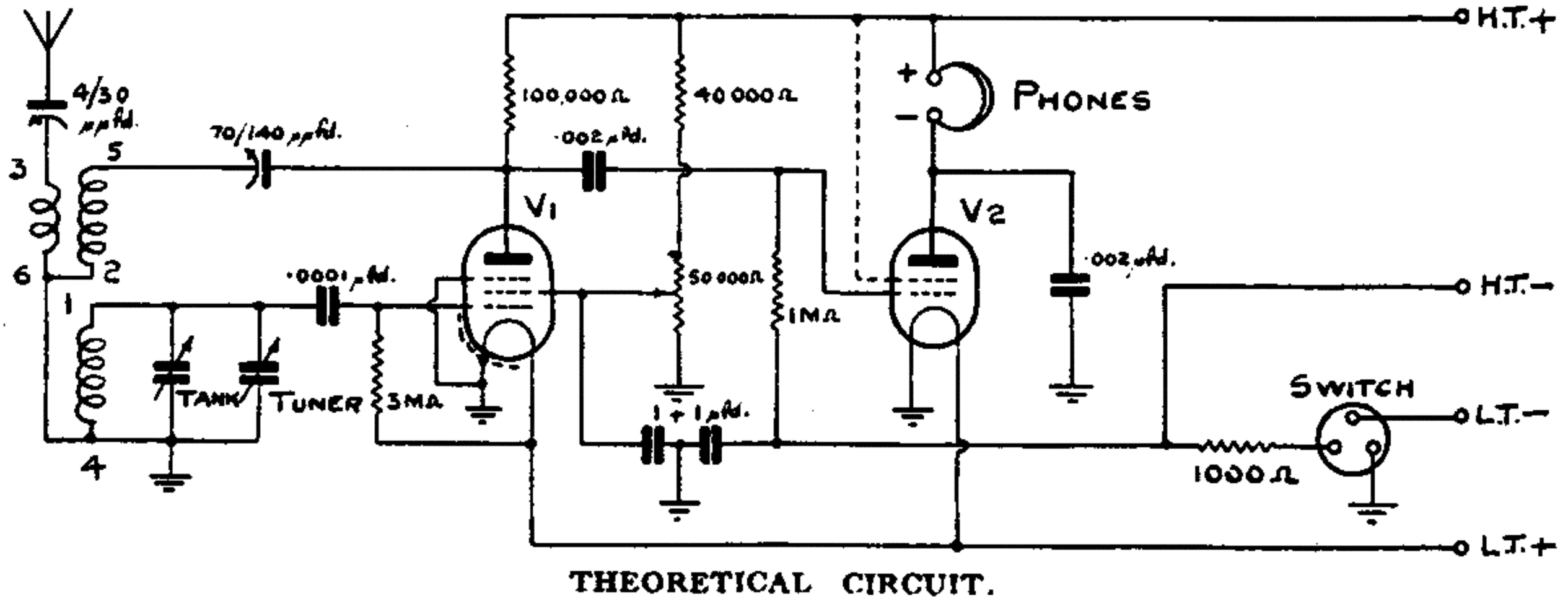
A five-pin valveholder is fitted in the output stage, the centre pin automatically connecting the auxiliary grid to the H.T. supply when a pentode is used.

An automatic bias resistance is incorporated in this receiver, and it has been calculated to be equally suitable for the following output valves :

(a) TRIODE VALVE (4/9)	(b) PENTODE VALVE (11/-)	*Total Milliamps with Detector Valve* (a)	(b)
Mazda P220	Mazda Pen. 220	4.5	4.8
Osram LP2	Osram PT2	4.55	5.1
Mullard PM2A	Mullard PM22A	4.55	3.95

CONNECTING UP.

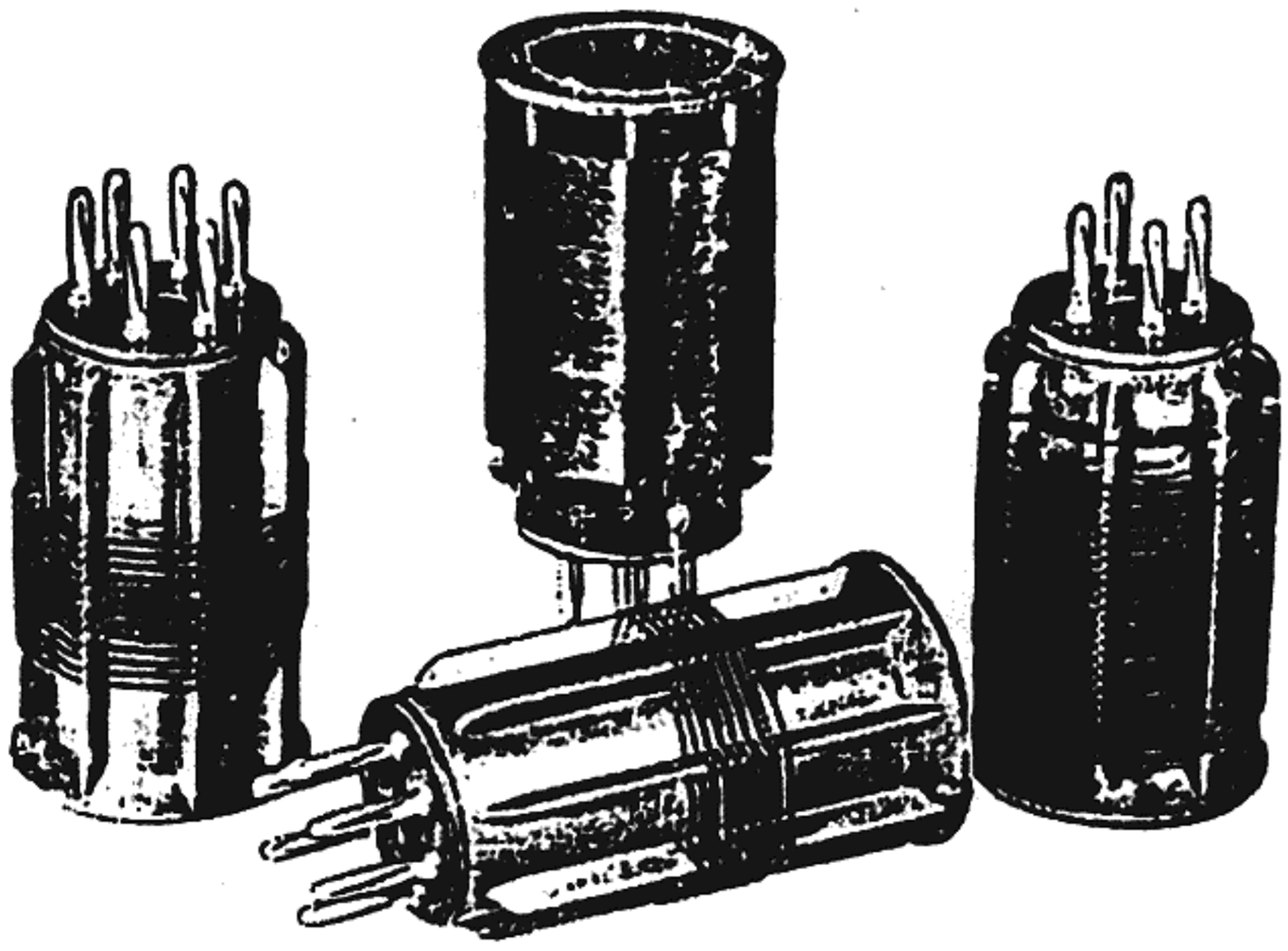
Place the desired Coil in the coil base, a Mullard SP2 Valve in the first valveholder V1, and the appropriate Output Valve in V2. Use a pair of 2,000 ohm headphones in the 'phone sockets and connect aerial and earth leads. Put the on-off switch in the "off" position (turned left) and connect up the H.T. and L.T. batteries.



THEORETICAL CIRCUIT.

Low Loss Interchangeable Coils

COVERING 9 METRES TO 2,000 METRES.



Our coils are of the highest efficiency, and first-grade workmanship. Using D.L.-9 high frequency formers, matched inductances, and H.C. enamelled wire. Helically slotted pins ensure full surface contact. Windings are soldered to pins, which are rivetted and cannot work loose. The approximate wave-ranges of the coils are for a 160 m.mfd. tuning condenser, and allow for average circuit load.

FOUR PIN TWO WINDING. Cat. No. 932.

WINDING TURNS AND INDUCTANCES.

Type	Metres	Primary	Grid	Inductance	Code	Price
BB	9-14	3	2¾	0·50 μH.	ACBB	2/9
LB	12-26	2	3¾	1·08 μH.	ACBE	2/9
Y	22-47	4¼	8¾	3·62 μH.	ACYE	2/9
R	41-94	9¼	23¾	14·24 μH.	ACRO	2/9
W	76-170	15	35	45·0 μH.	ACWO	3/3
P	150-325	25	92	0·188 mH.	ACPI	3/6
G	260-510	40	138	0·420 mH.	ACGO	3/6
BR	490-1000	30	315	1·90 mH.	ACBR	4/6
GY	1000-2000	110	630	6·98 mH.	ACGY	4/6

SIX PIN THREE WINDING Cat. No. 959.

WINDING TURNS AND INDUCTANCES.

Type	Metres	Primary	Grid	Inductance	Reaction	Code	Price
6 BB	9-14	1¼	2¾	0·51 μH.	3	EXBB	3/3
6 LB	12-26	2	3¾	1·07 μH.	3	EXLB	3/3
6 Y	22-47	4¼	8¾	3·62 μH.	4¼	EXYEL	3/3
6 R	41-94	9¼	23¾	14·13 μH.	9¼	EXRE	3/3
6 W	76-170	10	35	45·0 μH.	14	EXWO	3/9
6 P	150-325	42	92	0·188 mH.	35	EXPI	4/6
6 G	260-510	90	138	0·428 mH.	40	EXGO	4/6
6 BR	490-1000	200	315	1·53 mH.	80	EXBRO	5/-
6 GY	1000-2000	300	630	7·05 mH.	140	EXDOY	5/-

SIX PIN COIL BASES FOR CAT. No. 959 COILS.

For above baseboard wiring. D.L.-9 insulation, low self capacity, one piece sockets, positive electrical contact.

Cat. No. 969. Code ESAF. Price .. **2/3**

For under baseboard wiring. D.L.-9 insulation with special ribs to reduce leakage between sockets.

Cat. No. 964. Code ESAF. Price .. **1/3**

The four-pin coils, Cat. No. 932, have standard valveholder fittings.—*See page 10.*