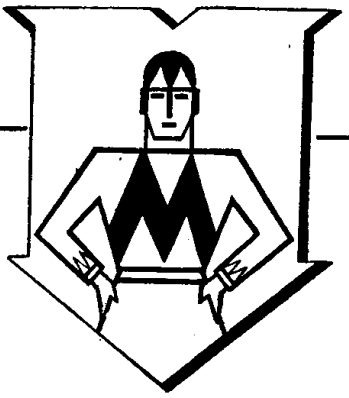


MARCONIPHONE

SERVICE MANUAL

IVATE AND CONFIDENTIAL
) THE TRADE ONLY

★

Models 538 & 539

8-Valve De-Luxe
All-Wave Table
Grand & Radiogram

SEPT.
1937

PART NO.
2817 1

MODELS 538 & 539

SPECIFICATION

VOLTAGE RANGE.

195 to 255 volts A.C.
50 to 100 cycles (table model).
50 to 60 cycles (radiogram).

POWER CONSUMPTION.

Approximately 127 watts (radio).
,, 150 watts (gramophone).

FUSES.

It is recommended that these instruments are connected only to supply points protected with 2 ampere fuses.

SPEECH OUTPUT.

Approximately 5 watts undistorted.
Anode dissipation of KT66 output valve, 17 watts.

WAVELENGTH RANGE.

L.W.—725–2,000 metres.
M.W.—195–580 metres.
S.W.1—35–100 metres.
S.W.2—11–35 metres.

DIMENSIONS.

Model 538—
Height ... ... 20⅜ inches.
Width ... ... 18¾ inches.
Depth ... ... 12⅛ inches.

Model 539—
Height ... ... 30¼ inches.
Width ... ... 31 inches.
Depth ... ... 20 inches.

WEIGHT.

Model 538 ... 54½ lb. net. 64 lb. gross.
,, 539 ... 122 ,,

VALVES.

Marconi W63 or KTW63 H.F. Amplifier.
,, X64 ... ... Mixer.
,, Z63 or KTZ63... Oscillator.
,, W63 or KTW63 I.F. Amplifier.
,, D63 ... ... Detector and A.V.C. Diodes.
,, Z63 or KTZ63... L.F. Amplifier.
,, KT66 ... ... Output Valve.
,, U50 ... ... H.T. Rectifier.
,, 6G5 ... ... Tuning Indicator.

LOUDSPEAKER.

No. 24460S.
The elliptical cone loudspeaker has an energised field coil, and the chassis incorporates three high capacity electrolytic smoothing condensers (C39, C40, C41). The field is connected in the positive H.T. lead where it acts as a smoothing choke.
D.C. resistance of speech coil, 4 ohms.
Impedance at 800 cycles, 5 ohms.
D.C. resistance of field coil, 400 ohms.

PICK-UP (Radiogram).

No. 28060C.
D.C. resistance, 850 ohms.
For full service data see separate manual already issued.

MOTOR (Radiogram).

No. 24S induction disc motor is wired across the 195 to 223 tapping of the mains transformer. This ensures a consistent voltage across the motor, no other voltage adjustment being necessary.

AUTO BRAKE.

No. 230E.
Standard friction-feed type. For full service particulars, see Models 219, 239, Service Manual.

CONNECTING A PICK-UP (Table Model).

A high resistance pick-up, such as Marconiphone No. 25, may be permanently connected to the sockets provided.

EXTRA LOUDSPEAKERS.

These models will operate up to four extra loudspeakers without greatly reducing the volume from the built-in speaker. The total speech coil impedance of extra speakers should be approximately 5 ohms, and Marconiphone Models 144 or 196, are very suitable.

ANTI-STATIC AERIAL.

This receiver has, in addition to ordinary aerial and earth sockets, a specially designed input circuit to match the line impedance of the Marconiphone Static-free Aerial type 72. This aerial equipment is provided with a special non-reversible plug attached to the transmission line, which fits two special sockets on the receiver. The link-plug included in the aerial equipment must be inserted between aerial and earth sockets when using the anti-static aerial.

CIRCUIT DESCRIPTION

AERIAL CIRCUIT.

For standard aerial the input circuit consists of a separate aerial transformer for each of the four wavebands. Connexion to the transmission line socket for the anti-static aerial is made through a bank of switch contacts (S2) to an impedance matching tap on the tuned secondaries of these transformers.

H.F. AMPLIFIER.

The secondaries tune the grid circuit of an H.F. amplifier (W63) with A.V.C. bias control. This valve has a tuned anode circuit, the anode lead being tapped into the medium and long wave inductances. A small condenser couples this circuit to the grid of the heptode mixer.

MIXER AND OSCILLATOR.

The two-valve frequency changer has been chosen because of the extremely high frequency stability required for low wavelengths. The oscillator valve V3 (Z63) incorporates a Hartley type circuit with centre tapped inductances, and individual padding for each waveband. An additional reaction coil L17 is included on the shortest waverange to ensure consistent oscillation. The oscillator voltage is injected from the cathode of the oscillator valve via C11 into the heptode mixer V2 (X64) which has in its anode circuit the primary of a variable coupling I.F. transformer.

I.F. AMPLFIER.

A variable mu I.F. amplifier valve V4 (W63) is A.V.C. controlled and is coupled by the second I.F. transformer to the diode detector V5. The coupling of both I.F. transformers is varied by switch S12 (ganged to the treble tone control) and its operation is to short circuit tertiary coils (L22, L24) placed between the primary and secondary of the transformers. Eddy current losses introduced when these coils are shorted reduce the coupling and so give higher selectivity. A compensating coil (L23) is included in IFTI to balance the inductance and preserve a good band pass effect in the fidelity position.

DETECTOR AND A.V.C. CIRCUITS.

The double diode (D63) has one diode fed direct from the tapped secondary of IFT2 for signal rectification (load R13, filter C23, R14, C49, R40), and the A.V.C. diode fed from the same tapping via C24. Delay is obtained by connecting the A.V.C. diode cathode to a tapping on the self-bias circuit (R20, R21) of V6, whilst the A.V.C. diode load (R16, R41) is connected down to chassis. It will be noted that V1, V2 and the tuning indicator take full A.V.C. voltage, whilst V4 takes half voltage.

L.F. AMPLIFIER AND TONE CONTROL.

The valve V6 (Z63) connected as a triode L.F. amplifier is fed from the volume control VR1 and is parallel fed (R23, C35) transformer coupled to the next valve. The bass tone control circuit is in series with the primary of this transformer, whilst the treble control VR3 shunts a condenser across the secondary.

OUTPUT STAGE AND SUPPLY.

The output valve V7 (KT66) has a negative feed-back circuit (C37, R29) which ensures a very level frequency response and low harmonic distortion. Bias is obtained by means of the cathode resistance R28.

The full-wave rectifier V8 (U50) supplies current for all valves and a two-stage smoothing filter, in which the loudspeaker field is the second smoothing choke, is employed. The high capacity electrolytic smoothing condensers C39, C40 and C41 are mounted on the loudspeaker chassis.

PRELIMINARY TESTS

This receiver employs the new " International " type valves with eight pin (octal) bases. With these valves the grid connexion is made to the top cap, and therefore it is more difficult to check individual H.T. voltages. On the table model checking is facilitated by the removable cabinet bottom ; on all models the following tests can be made without disturbing the chassis.

1. **Maximum H.T. Voltage.**—Measure voltage between tag 5 on L.S. panel and chassis. This should be approximately 330 volts. High values indicate low H.T. current, and possibly faulty CK1, loudspeaker field, output valve, etc. Low voltage indicates high H.T. current, possibly faulty electrolytic condensers or an " earth " on the H.T. wiring or smoothing chokes.
2. **Smoothed H.T. Voltage.**—Tag 6 L.S. panel to chassis approximately 310 volts. Tag 7 L.S. panel to chassis, approximately 250 volts.
3. **L.F. Test.**—Operation of the L.F. end of the receiver can be tested by removing the earth lead and touching the left-hand pick-up socket, and then the top grid of V6. A loud hum will be heard if the L.F. and output stages are in good order.
4. **H.F. Test.**—The earlier stages of the receiver can be systematically eliminated by contacting the aerial lead on to fixed vanes VC1, then fixed vanes VC2. Medium wave results should be obtained, and if at some point signals appear the fault will be found in one of the earlier stages. See continuity checks, page 11, valve socket tests and valve table, page 10.

DISMANTLING INSTRUCTIONS

MODEL 538.

Removal of Chassis.

1. Remove back and knobs.
2. Unsolder leads from loudspeaker and remove fixing cleat.
3. Remove four fixing bolts from underside of cabinet. The chassis may now be withdrawn.

(*Note.*—If uncleated, the loudspeaker leads are sufficiently long to enable the chassis to be withdrawn for inspection without disconnecting the loudspeaker.)

Removal of Loudspeaker.

1. Disconnect leads to speaker panel.
2. Remove four fixing screws and withdraw speaker.

Connexions to L.S. Panel.

Tag No.	Lead Colour.
1	Yellow.
3	Black.
5	Yellow-black.
6	Red.
7	Red-yellow.
L.S. frame	Black VIR:

MODEL 539.

Access to Underside of Chassis.

Remove two wood screws on right-hand side of radio control panel and remove volume control knob. The right-hand side panel may now be withdrawn.

Removal of Radio Chassis.

1. Remove side panel as detailed above.
2. Remove knobs and four wood screws securing control panel and remove panel.
3. Disconnect from chassis aerial, earth, pick-up, motor and motor earth leads, and leads on loudspeaker panel.
4. Remove four bolts securing radio chassis.

The chassis may now be withdrawn.

Removal of Loudspeaker.

1. Disconnect leads from radio chassis and extra L.S. panel at loudspeaker panel.
2. Remove four fixing screws and withdraw speaker.

Connexions to Loudspeaker.

Tag No.	Lead Colour.	
2	Yellow	To Radio Chassis.
3	Black	
5	Yellow-black	
6	Red	
7	Red-black	
L.S. frame	Black V.I.R.	
1	Yellow	To Ext. L.S. Panel.
2	Yellow-black	
3	Black	

H.F. TESTS AND ADJUSTMENTS

The alignment of this receiver should not be attempted unless adequate apparatus is available, and must be done with great care. A shielded oscillator or signal generator tuning from 11 to 2,000 metres fitted with an attenuator and an output meter, or an 0-2 A.C. voltmeter are required. The E.M.I. Service equipment is recommended. The receiver, and the oscillator if mains driven, should be switched on at least a quarter of an hour before commencing ganging operations.

SEQUENCE OF ALIGNMENT.

Be very careful not to bend or alter the position of leads in the vicinity of the wavechange switch and tuning coils. The shortest wave-range is provided with a form of inductance trimming for the oscillator coil in addition to the usual trimming condensers. Generally speaking the alignment of the different wave-bands is not interdependent, but it is suggested that if work has been done on a given band, when re-aligning this band the others should be touched up or alternatively carefully checked with a tuning wand (see page 7). In cases where re-alignment of the I.F. circuits is necessary it is essential to follow this with the entire H.F. alignment procedure.

CONNEXION OF OUTPUT METER.

If an E.M.I. Service Output Meter is used it should be connected between the anode of the output valve (KT66) and chassis. If the A.C. voltmeter is used it must be connected to the extra L.S. sockets (see that the L.S. switch is in the central position). During all ganging operations the input to the receiver from the oscillator should be progressively reduced as the circuits are brought into line, so that the reading on the output meter does not exceed 500 mW or 1·6 volts.

I.F. ALIGNMENT.

IMPORTANT.—A signal modulation of not more than 30 per cent. must be used for I.F. ganging.

Set receiver to S.W.2 band, gang condenser to maximum, volume control to maximum, bass tone control fully anti-clockwise, and top tone control as far anti-clockwise as possible without switching to high fidelity.

1. Connect oscillator to top grid V2 (X64) via an 0·1 mfd condenser and chassis ; and tune oscillator *exactly* to 465 kc.
2. Adjust TC15, TC16, TC17 and TC18 for maximum deflection on output meter.
3. Check these adjustments in the same and in the reverse order until no further increase can be obtained.

LONG WAVES.

Set tone and volume controls as for I.F. alignment, but switch to L.W. and gang to minimum. Connect oscillator to aerial and earth sockets.

1. Note the indication of the vernier dial. Now turn the gang condenser 10 degrees (on the vernier scale) in. The wavescale pointer should now register accurately on 725 metres. If it does not do so slacken the pointer fixing screws and adjust.
2. Tune oscillator to 725 metres and adjust TC9 for maximum output.
3. Set oscillator to 850 metres, tune in signal on receiver and adjust TC1 and TC5 for maximum.
4. Set oscillator to 1,900 metres, tune in signal and adjust TC13 for maximum, at the same time " rocking " the gang condenser.

   IMPORTANT.—Unless the latter adjustment is done with a hard fibre or other entirely non-metallic screw driver, the screwdriver must be withdrawn from the trimmer hole to ascertain if the correct setting has been obtained. Bear in mind that the presence of the screwdriver *adds* to the trimmer capacity, and allow for this.

5. Return oscillator and receiver to 725 metres and check the setting of TC9.
6. Repeat operations 3, 4 and 5.

MEDIUM WAVES.

Connect oscillator and set tone and volume controls as for L.W. Unless you have already checked the correctness of the wave-scale pointer, do so as detailed under L.W.

1. Set oscillator to 195 metres and receiver to the same wavelength by the wave-scale.
2. Adjust TC10 carefully for maximum output.
3. Set oscillator to 210 metres, tune-in on receiver and adjust TC2 and TC6 for maximum.
4. Tune oscillator to 530 metres and adjust TC14 for maximum at the same time " rocking " the gang condenser.

IMPORTANT.—This trimmer screw is not at earth potential and consequently any metal in the screw-driver will affect the adjustment. See important note under operation 4 in the L.W. ganging.

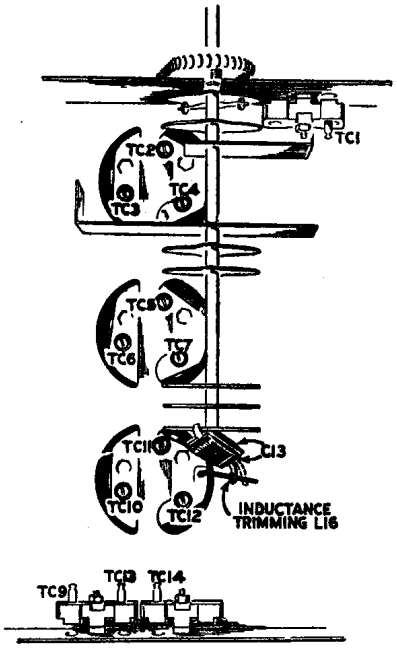
SHORT WAVES.

See that all trimmers are accessible before commencing adjustments and do not bend any leads after trimming is completed. Unless you have not already done so, check the correctness of the wave-scale pointer as detailed under " Long Waves."

Band 35-100 metres.

Set volume and tone controls as for I.F. alignment and switch receiver to 35-100 metre band.

1. Adjust tuning control so that the pointer reads 725 metres on the L.W. scale.
2. Tune oscillator to 35·2 metres and adjust TC11 for maximum output.
3. Adjust oscillator to 37·5 metres and tune in signal on receiver.
4. Adjust TC3 and TC7 for maximum output, at the same time " rocking " the gang condenser.
5. Repeat operations 1 to 4 to verify settings of trimmers.



Band 11-35 metres.

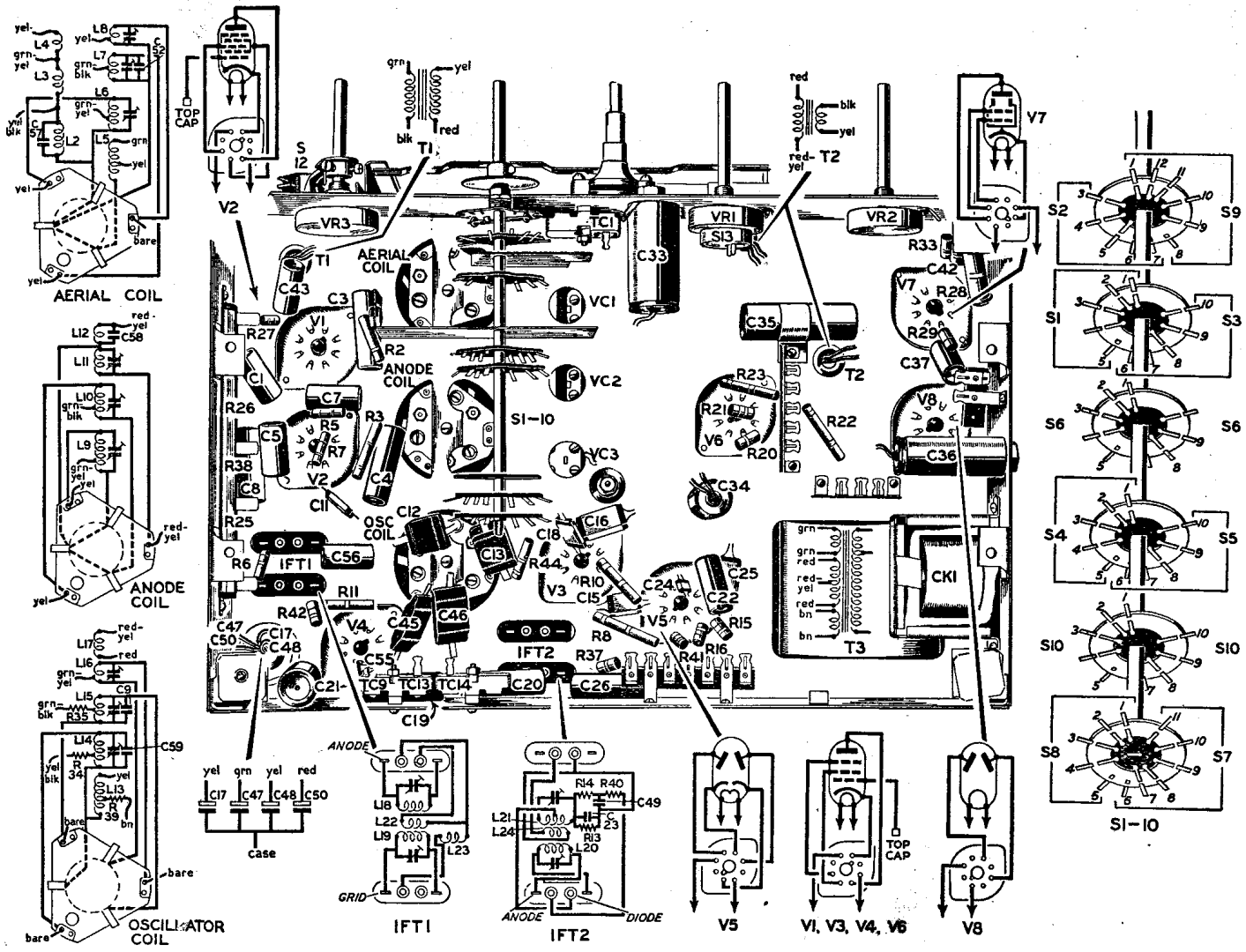
1. Set receiver waveband switch to 11-35 metre range and fully unscrew TC4
2. Tune oscillator to 11·3 metres, tune in signal on receiver and adjust TC12 for maximum output, at the same time " rocking " the gang condenser.
3. Adjust TC4 for maximum.
4. Inductance adjustment of the oscillator circuit should only be done if the tuning coils of this wave-range have been seriously disturbed. If this is not the case conclude the ganging of this band by repeating operations 2 and 3. Otherwise continue on the following lines.
5. Set oscillator to 30 metres and tune signal in on receiver. Insert the ferrocart end of a tuning wand into can containing L12. If the output reading rises the inductance of L16 must be *decreased* by unsoldering the junction between C13 and its connecting wire and sliding the condenser tag down towards the coil base until the insertion of either end of the wand into L12 produces a fall in output.
6. If the insertion of the ferrocart end of the wand produces a fall in output but the insertion of the brass end raises the output then the inductance of L16 must be increased by sliding the tag of C13 upwards until the condition outlined at the end of paragraph 5 above is achieved.

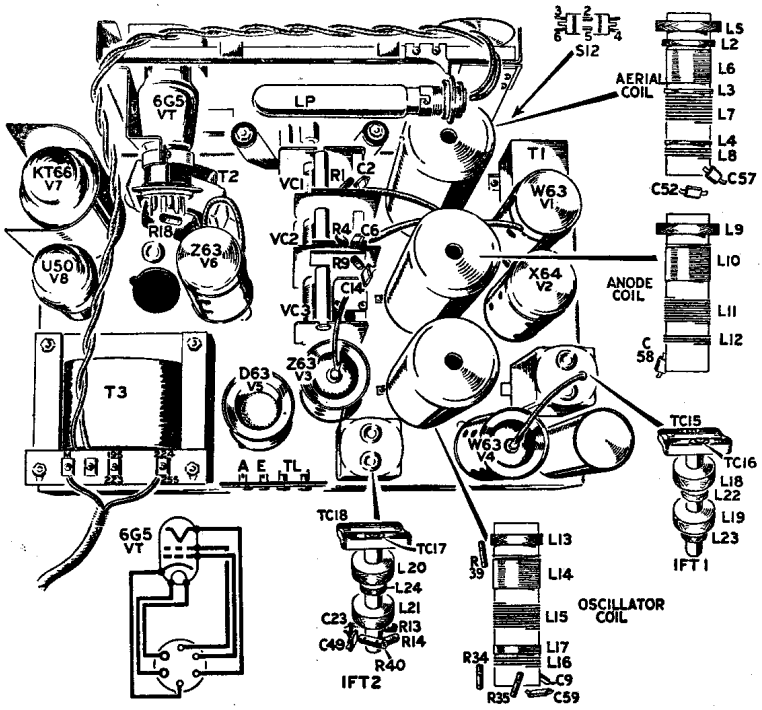
NOTE.—If two condensers in parallel are used for C13 it is very important to ensure that when resoldering the tags to the wire good connexion is made *between* the tags of the two condensers as far up to the moulded cases as possible.

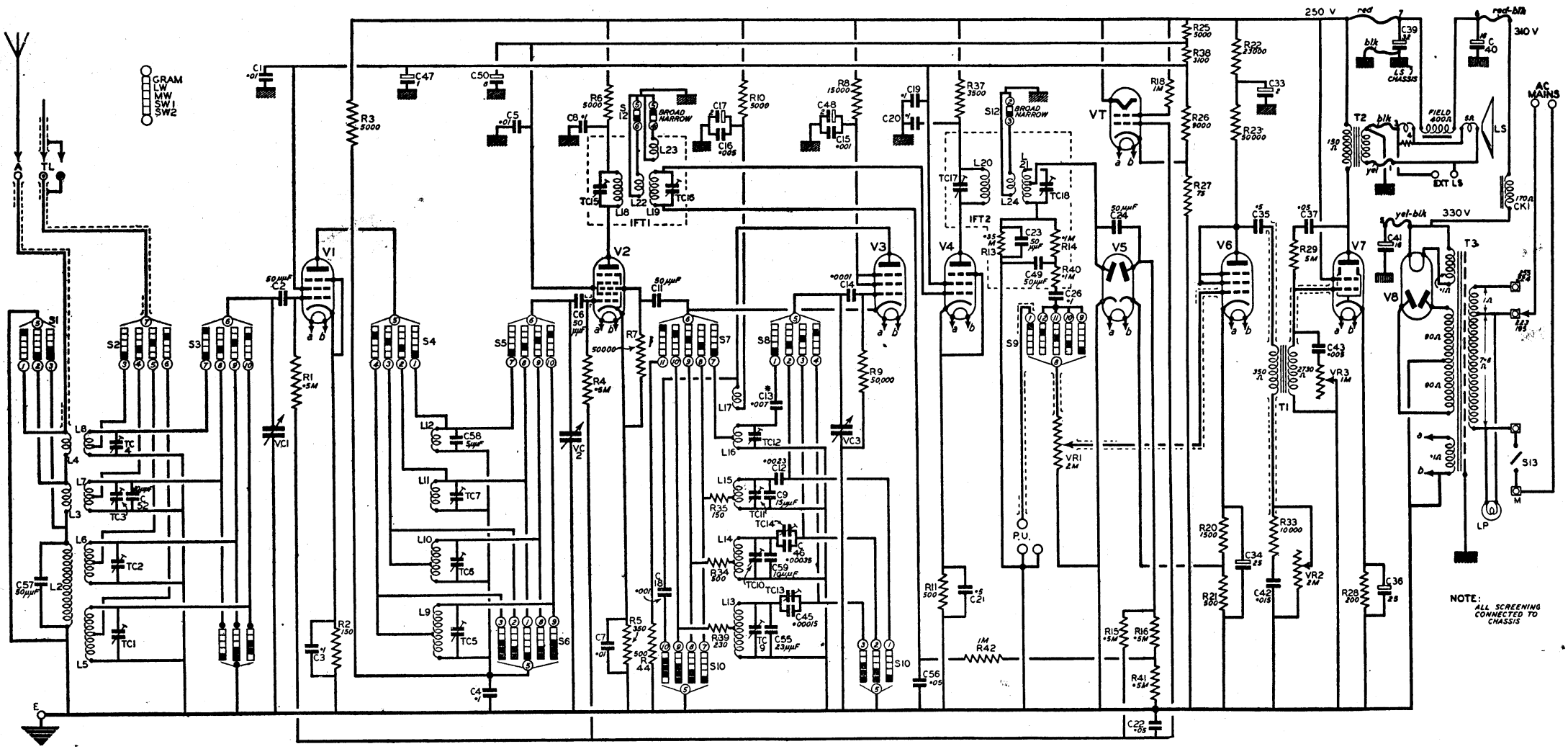
7. Repeat operations 1, 2 and 3.

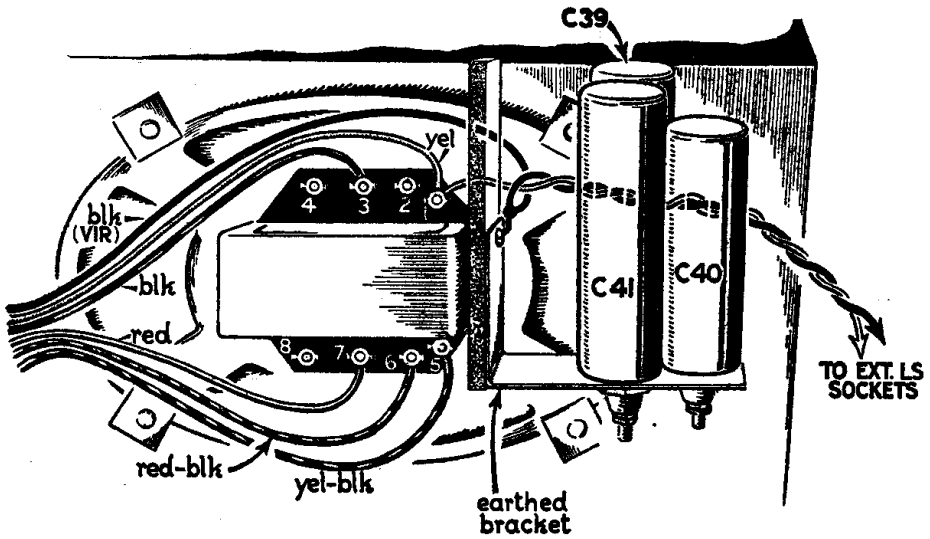
GENERAL NOTES.

1. Do not unnecessarily disturb or bend leads.
2. Use a screwdriver with an absolute minimum of metal in the blade (such as the E.M.I. Service trimming tool).
3. Apart from the inductance trimming of L16 for which one is essential, the use of a " tuning wand " (obtainable from E.M.I. Service) will facilitate all ganging operations. The wand should be used as follows :—
   (*a*) Insert the ferrocart end of the wand into the can containing the coil of the circuit being aligned. If output reading falls, leave trimmer set and if reading increases, increase capacity by screwing down trimmer until peak reading is obtained.
   (*b*) Insert brass end of wand, and if reading falls leave trimmer set, but if output reading increases decrease trimmer capacity until a peak reading is obtained.

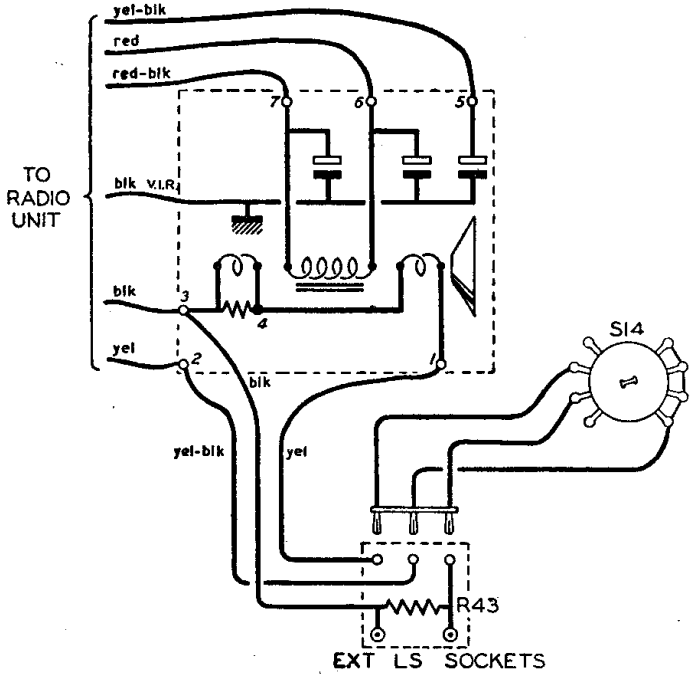

AERIAL COIL
ANODE COIL
OSCILLATOR COIL
IFT1
IFT2
V5
V1, V3, V4, V6
V8
S1-10
TOP CAP
case
T1
T2
T3
V1
V2
V3
V4
V5
V6
V7
V8
VC1
VC2
VC3
VR1
VR2
VR3
S12
S13
TC1
CK1
ANODE
GRID
DIODE


6G5 V7
KT66 V7
U50 V8
Z63 V6
W63 V1
X64 V2
Z63 V3
D63 V5
W63 V4
6G5 V7
T1
T2
T3
LP
S12
AERIAL COIL
ANODE COIL
OSCILLATOR COIL
IFT1
IFT2
A E TL


GRAM
LW
MW
SW1
SW2
TL
A
E
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
V1
V2
V3
V4
V5
V6
V7
V8
VT
T1
T2
T3
IFT1
IFT2
VC1
VC2
VC3
VR1
VR2
VR3
P.U.
LS
EXT LS
LP
CK1
AC MAINS
250 V
330 V
340 V
BROAD
NARROW
FIELD 400Ω
LS CHASSIS
NOTE: ALL SCREENING CONNECTED TO CHASSIS



Loudspeaker for table model. For radiogram, see adjacent diagram.



Above is the loudspeaker wiring for the radiogram. The motor is connected across the 195–223 volt section of the mains transformer.

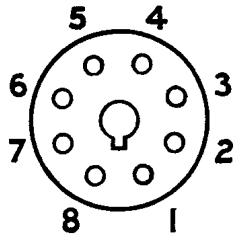
NOTE.—On the wavechange switch, the contacts shown without numbers represent switch actions which are purely automatic within the switch, *i.e.*, these contacts have no external wiring to them.

VALVE SOCKET TESTS

Remove all valves and pilot lamp, switch to M.W. Values ± 15 per cent. "S" stands for short circuit, "O" for open circuit.

Valve	Socket Numbers (see Diagram).								
	1	2	3	4	5	6	7	8	Top
V1, W63	S	S	22,200	9,100	150	2,700	0·1	150	2M
V2, X64	S	S	22,200	12,200	50,400	S	0·1	350	2M
V3, Z63	S	0·1	22,200	32,200	32,200	22,200	S	500	50,000
V4, W63	S	0·1	20,700	9,100	500	0·5M	S	500	1·5M
V5, D63	S	S	0·35M	S	1M	0·1	0·1	500	—
V6, Z63	S	S	90,000	90,000	90,000	500	0·1	2,000	6 ohms to 2M (VR1)
V7, KT66	S	S	17,300	17,200	2,700	10,300 to 2M (VR2)	0·1	200	—
V8, U50	O	17,750	O	90	O	90	O	17,750	—

The above are resistance values in ohms measured between the points indicated and chassis.



VALVE SOCKET SEEN FROM TOP

VALVE TABLE

The following table was taken with a receiver operating on 230 volt mains, switched to medium waves (unless otherwise stated) and aerial disconnected. Values ± 15 per cent.

Valves	V1 (W63)	V2 (X64)	V3 (Z63)	V4 (W63)	V5 (D63)	V6 (Z63)	V7 (KT66)	V8 (U50)	V7 (6G5)
Anode-Frame, volts ...	Radio 200* Gram., nil	210	195	215	—	95	230	350 A.C.	240 (Target)
Screen-Frame, volts ...	95	130	190	95	—	—	240	—	—
Anode Feed, mA ...	6·5†	3·5†	8·0*	5·0†	—	1·9	72	—	0·2†
Screen-Feed, mA ...	2·0†	7·5†	3·0*	1·2†	—	—	5·0*	—	—
Cathode Frame, volts	1·3	4·0	5·5	3·0	1·0 (One cathode is at chassis potential)	3·5	15	320	0·75

Voltage at tag 6 on L.S. panel ... ... 310 volts.
Voltage across L.S. field (measured at tags 6 and 7 on L.S. panel) ... ... 55 volts.
Total H.T. feed measured at tag 7 on L.S. panel... ... ... 125 mA
Feed in screen potentiometer R25, R26, R27, R38 ... ... 10·5 mA.

* Increases with strong signal. † Decreases with strong signal due to A.V.C. action.

CONTINUITY CHECKS

Remove valves and pilot lamp ; values ± 15 per cent.

Component	Measured	Switch	Resistance
L2, L3, L4	Aerial and earth sockets	Gram. ... ... LW ... ... MW ... ... SW1 ... ... SW2	Short. (L2, L3, L4), 48 ohms. (L2, L3, L4), 48 ohms. (L3, L4), 9 ohms. (L4), 1 ohm.
L5, L6, L7, L8	(*a*) Fixed vanes VC1 and chassis ; (*b*) smaller TL socket and chassis	Gram. ... ... LW ... ... MW ... ... SW1 ... ... SW2	(*a*) (*b*) 0·1 ohm Open. (L5) 19 ohms 0·4 ohm. (L6) 6·0 ohms 0·3 ohm. (L7) 0·2 ohm 0·1 ohm. (L8) 0·1 ohm 0·1 ohm.
L9, L10, L11, L12	Tag 7, L.S. panel and fixed vanes VC2	SW2	5,000 ohms. (L9) 19 ohms. (L10) 6 ohms. (L11) 0·2 ohm. (L12) 0·1 ohm.
L13, L14, L15, L16, R34, R35, R39	(*a*) Cathode V3 (Z63) and chassis ; (*b*) across ends	Gram. ... ... LW ... ... MW ... ... SW1 ... ... SW2	(*a*) (*b*) 500 ohm — 260 ohms (L13) 5 ohms. 500 ohms (L14) 6 ohms. 150 ohms (L15) 0·1 ohm. Short. (L16) 0·1 ohm.
L17, R10	Anode V3 (Z63) and tag 7, L.S. panel	—	5,000 ohms (L17, 8·5 ohms).
L18, R6	Anode V2 (X64) and tag 7, L.S. panel	—	5,000 ohms (L18, 6·7 ohms).
L19, R4	Grid V2 (X64) and grid V4 (W63)	—	0·5 megohm (L19, 6·7 ohms).
L22	Contacts 5 and 6, S12	Broad	4·0 ohms.
L23	Contacts 4 and 5, S12	Narrow	4·5 ohms.
L20, R37	Anode V4 (W63) and tag 7, L.S. panel	—	3,500 ohms (L20, 6·7 ohms).
L21, R13	Diode V5 (D63) and chassis	—	0·35 megohm (L21, 6·7 ohms.)
L24	Contacts 2 and 3, S12	Broad	4·0 ohms.
R1, R15, R16, R41	Grid V1 (W63) and chassis	—	2 megohms.
R4, R42, R41	Grid V2 (X64) and chassis)	—	2 megohms.
R9	Grid V3 (Z63) and chassis	—	50,000 ohms.
VR1	Grid V6 (Z63) and chassis	—	6 ohms to 2 megohms.
For T1, T2, T3, CK1, L.S. Field, Speech Coil	See circuit diagram.		

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	Instructions.				
28263	Valve position label	1	—	0 0 1	Each.
28038	Instruction card	1	—	0 0 6	,,
22291	Station chart	1	—	0 0 6	,,
26111	Voltage adjustment label	1	—	0 0 1½	,,
26173	Voltage adjustment label (metal)	1	—	0 0 6	Doz.
25821	Transit label	1	—	0 0 1	Each.
	CABINET PARTS AND FITTINGS				
83270B	Cabinet	1	Pol	6 2 3	Each.
8195	Rubber foot	4	—	0 0 8	Doz.
—	Baffle board, with insert nuts	1	Std	0 4 6	Each.
14922	Insert nut for loudspeaker	4	CB	0 1 4	Doz.
9553	Screw, securing baffle board	8	—	0 0 2	,,
25499	Wire mesh	1	AnBr	0 5 0	Each.
19273	Pin, securing wire mesh to baffle	4	—	0 0 1	Doz.
—	Felt for wire mesh, ⅛-inch, S1429, 225/82316	—	—	0 0 9	Sq. ft.
—	Felt for wire mesh, ¼-inch, S1459, 225/84316	—	—	0 1 0	,,
24873	Bracket for cabinet back	5	CdP	0 0 1	Each.
8602	Screw securing brackets	10	—	0 0 2	Doz.
28035A	Cabinet back (printed)	1	—	0 2 6	Each.
19896	Screw } securing cabinet back	5	ParB	0 0 1	,,
19895	Washer } securing cabinet back	5	ParB	0 0 4	Doz.
28034	Tuning escutcheon	1	—	0 1 3	Each.
9545	Screw, securing escutcheon	4	BzP	0 0 3	Doz.
28028	Window	1	—	0 0 4½	Each.
26128	Clamping rubber, top	1	—	0 0 4½	Doz.
26129	Clamping rubber, side	2	—	0 0 2	,,
28029	Clamping rubber, bottom	2	—	0 0 4	,,
26107	Clamp } securing window	4	—	0 0 4½	,,
14791	Screw } securing window	4	BzP	0 0 4	,,
21406C	A.E. bracket with sockets	1	—	0 1 0	Each.
8651	Screw, securing bracket	2	WN	0 0 2	Doz.
	LEADS, PLUGS.				
12599E	Mains lead, with two tags	1	—	0 2 6	Each.
11802	Tag	2	—	0 0 3	Doz.
27916B	Loudspeaker lead	1	—	0 2 0	Each.
25296C	Ext. L.S. lead	1	—	0 0 4½	,,
16289B	Plug, black	3	—	0 0 2	,,
16289J	Plug, yellow	3	—	0 0 2	,,
18889A	Carton, for mains lead and plugs	1	—	0 0 1	,,
7155	Cleat	1	WN	0 0 1	,,
16578	Cleat	1	WN	0 0 1	,,
8602	Screw, securing cleats	2	WN	0 0 2	Doz.
	CONTROLS				
24371	Knob—Tuning, large	1	—	0 0 7	Each.
24855A	Knob—" Tuner "	1	ChF	0 0 7	,,
11773	Grub screw, securing tuner knob	1	WN	0 0 5	Doz.
17054U	Knob—" Brilliance "	1	ChF	0 0 7	Each.
17054Q	Knob—" Wave Band "	1	ChF	0 0 7	,,
17054F	Knob—" Volume " and On/Off	1	ChF	0 0 7	,,
17054X	Knob—" Bass "	1	ChF	0 0 7	,,
11805	Screw, PK, securing knobs	4	ChF	0 0 6	Doz.

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	LOUDSPEAKER				
24460S	Loudspeaker, complete with C39, C40 and C41	—	—	2 0 0	Each.
11543R	Field coil	1	—	0 4 6	,,
26308	Hum coil	1	—	0 0 7½	,,
21966B	Terminal panel, with eight tags	1	—	0 1 0	,,
12947	Washer, felt	1	—	0 0 2	,,
21456	Washer, presspahn	4	—	0 0 4	Doz.
21968	Top plate	1	CdP	0 1 0	Each.
28055	Stud	4	WN	0 0 1	,,
24460M	Cone chassis with four studs and four brackets	1	CdP	0 2 6	,,
11627	Nut, securing magnet assembly to cone chassis	4	WN	0 0 6	Doz.
25224A	Panel, with two tags	1	—	0 0 1	Each.
13810	Rivet, securing panel to cone chassis	2	—	0 0 3	Doz.
24461B	Speech coil and cone	1	—	0 3 0	Each.
19585	Card washer	2	—	0 0 1	Doz.
25205	Washer plate	1	WN	0 0 1½	Each.
19687	Nut	2	AcD	0 0 2	Doz.
25204	Felt	1	—	0 0 1½	Each.
26515	Stop	1	BMEn	0 0 6	Doz.
25022	Sleeve } securing stop to magnet core	1	WN	0 0 6	,,
25023	Screw }	1	WN	0 0 6	,,
28030A	Condenser bracket	1	CdP	0 0 7½	Each.
11213	Screw } securing bracket	3	WN	0 0 2	Doz.
3167	Washer, SP }	3	—	0 0 2	,,
7229	Tag	1	—	0 0 4	,,
28189	Insulation	1	—	0 0 2	Each.
22675E	C39—32 mfd., electrolytic	1	—	0 7 6	,,
28160A	C40—12 mfd., electrolytic	1	—	0 6 0	,,
22675H	C41—16 mfd., electrolytic	1	—	0 7 6	,,
11213	Screw } securing speaker to insert nuts in baffle board	4	WN	0 0 2	Doz.
3167	Washer, SP }	4	—	0 0 2	,,
26135A	Lamp	1	—	0 3 0	Each.
	RADIO UNIT				
28000D	Radio unit	1	—	14 5 9	Each.
11216	Bolt	4	WN	0 0 4	Doz.
10173C	Spring washer } securing radio unit	4	—	0 0 2	,,
14997	Washer }	4	WN	0 0 2	,,
11206	Transit screw	4	Red head	0 0 3	,,
10173B	Spring washer	4	—	0 0 2	,,
24778	Plate	4	WN	0 0 6	,,
	INDUCTANCES				
28026A	L2—M.W. and L.W. aerial coil L3—S.W.1 aerial coil L4—S.W.2 aerial coil L5—L.W. coupling coil L6—M.W. coupling coil L7—S.W.1 coupling coil L8—S.W.2 coupling coil } aerial coil assembly	1	—	0 7 6	Each.
28027A	L9—L.W. anode coil L10—M.W. anode coil L11—S.W.1 anode coil L12—S.W.2 anode coil } anode coil assembly	1	—	0 5 6	,,
28027B	L13—L.W. oscillator coil L14—M.W. oscillator coil L15—S.W.1 oscillator coil L16—S.W.2 oscillator coil L17—Reaction coil } oscillator coil assembly	1	—	0 5 0	,,
—	L18—Primary } in I.F.T.1				
—	L19—Secondary }				
—	L20—Primary } in I.F.T.2				
—	L21—Secondary }				
—	L22—Selectivity coil } in I.F.T.1				
—	L23—Selectivity coil }				
—	L24—Selectivity coil in I.F.T2				

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	INDUCTANCES—*continued*				
22624P	CK1—Smoothing choke	1	—	0 4 6	Each.
10606	Screw, PK, securing CK1	2	—	0 0 6	Doz.
26330AH	I.F.T.1—1st I.F. transformer complete with L18, L19, L22, L23, TC15 and TC16	1	—	0 7 6	Each.
26330AJ	I.F.T.2—2nd I.F. transformer complete with L20, L21, L24, R13, R14, R40, C23, C49, TC17 and TC18	1	—	0 12 6	,,
12619	Screw, PK, securing I.F. transformers	4	—	0 0 6	Doz.
15811J	T1—Intervalve transformer	1	—	0 8 3	Each.
8777	Screw, PK, securing T.1	2	—	0 0 6	Doz.
28024A	T2—Output transformer	1	—	0 7 6	Each.
8777	Screw, PK, securing T2	2	—	0 0 6	Doz.
18511G	T3—Mains transformer	1	—	1 10 0	Each.
28031B	Terminal panel with four tags and three screws	1	—	0 0 6	,,
11228	Terminal screws	3	WN	0 0 4	Doz.
14512	Tag	4	—	0 0 5	,,
14511	Nut	4	—	0 0 4	,,
27878	Spacer	2	WN	0 0 1	Each.
3167	Washer, SP } securing terminal panel	2	—	0 0 2	Doz.
11627	Nut	2	WN	0 0 6	,,
17301	Tag	1	—	0 0 4	,,
11627	Nut	4	WN	0 0 6	,,
3167	Washer, SP } securing T3	4	—	0 0 2	,,
	RESISTANCES				
24150N	R1—500,000 ohms	1	—	0 0 9	Each.
17140AF	R2—150 ohms	1	—	0 0 9	,,
17140F	R3—5,000 ohms	1	—	0 0 9	,,
24150N	R4—500,000 ohms	1	—	0 0 9	,,
24150AD	R5—350 ohms	1	—	0 0 9	,,
17140F	R6—5,000 ohms	1	—	0 0 9	,,
24150J	R7—50,000 ohms	1	—	0 0 9	,,
17140AG	R8—15,000 ohms	1	—	0 0 9	,,
24150J	R9—50,000 ohms	1	—	0 0 9	,,
17140F	R10—5,000 ohms	1	—	0 0 9	,,
17140N	R11—500 ohms	1	—	0 0 9	,,
19202AK	R13—350,000 ohms	1	—	0 0 9	,,
19202L	R14—100,000 ohms	1	—	0 0 9	,,
24150N	R15—500,000 ohms	1	—	0 0 9	,,
24150N	R16—500,000 ohms	1	—	0 0 9	,,
24150P	R18—1 megohm	1	—	0 0 9	,,
24150AF	R20—1,500 ohms	1	—	0 0 9	,,
24150A	R21—500 ohms	1	—	0 0 9	,,
17410AA	R22—23,000 ohms	1	—	0 0 9	,,
17140P	R23—50,000 ohms	1	—	0 0 9	,,
24097J	R25—5,000 ohms R26—9,000 ohms R38—3,100 ohms	1	—	0 2 9	,,
10606	Screw securing R25, R26 and R28	2	—	0 0 7	Doz.
24150Y	R27—75 ohms	1	—	0 0 9	Each.
19105SM	R28—200 ohms, SL	1	—	0 2 3	,,
24150CK	R29—5 megohms	1	—	0 0 9	,,
24150F	R33—10,000 ohms	1	—	0 0 9	,,
24150A	R34—500 ohms	1	—	0 0 9	,,
24150AB	R35—150 ohms	1	—	0 0 9	,,
24150AG	R37—3,500 ohms	1	—	0 0 9	,,
	R38—3,100 ohms, with R25 and R26				
25150AC	R39—230 ohms	1	—	0 0 9	Each.
19202L	R40—100,000 ohms	1	—	0 0 9	,,
24150N	R41—500,000 ohms	1	—	0 0 9	,,
24150P	R42—1 megohm	1	—	0 0 9	,,
19104AA	R43—50 ohms	1	—	0 1 0	,,
17140N	R44—500 ohms	1	—	0 0 9	,,
18300CP	VR1—2 megohm volume control with S13 On/Off switch	1	—	0 5 0	,,
18300CV	VR2—2 megohm bass control	1	—	0 5 0	,,
18300CU	VR3—1 megohm brilliance control	1	—	0 5 0	,,

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	CONDENSERS				
24900N	C1—0·01 mfd.	1	—	0 1 0	Each.
22164J	C2—50 mmfd.	1	—	0 0 9	,,
24900AA	C3—0·1 mfd.	1	—	0 1 4	,,
24900AA	C4—0·1 mfd.	1	—	0 1 4	,,
24900N	C5—0·01 mfd.	1	—	0 1 0	,,
22164J	C6—50 mmfd.	1	—	0 0 9	,,
24900N	C7—0·01 mfd.	1	—	0 1 0	,,
24900AA	C8—0·1 mfd.	1	—	0 1 4	,,
22164D	C9—15 mmfd.	1	—	0 0 9	,,
22001A	C11—50 mmfd.	1	—	0 0 9	,,
22330BW	C12—0·0023 mfd., SL	1	—	0 2 6	,,
*22330CP	C13—0·0035 mfd., SL	1	—	0 2 6	,,
22001B	C14—100 mmfd.	1	—	0 0 9	,,
22001F	C15—0·001 mfd.	1	—	0 0 9	,,
22005A	C16—0·005 mfd.	1	—	0 1 6	,,
24019C	C17—2 mfd., electrolytic, with C47, C48 and C50	1	—	0 6 6	,,
22001F	C18—0·001 mfd.	1	—	0 0 9	,,
24900AA	C19—0·1 mfd.	1	—	0 1 4	,,
24900AA	C20—0·1 mfd.	1	—	0 1 4	,,
24900AJ	C21—0·5 mfd.	1	—	0 1 6	,,
24900W	C22—0·05 mfd.	1	—	0 1 3	,,
22164J	C23—50 mmfd.	1	—	0 0 9	,,
22164J	C24—50 mmfd.	1	—	0 0 9	,,
22005B	C23—0·01 mfd.	1	—	0 2 0	,,
24900AA	C26—0·1 mfd.	1	—	0 1 4	,,
21553D	C33—2 mfd., electrolytic	1	—	0 2 9	,,
21555A	C34—25 mfd., electrolytic	1	—	0 2 6	,,
24900AJ	C35—0·5 mfd.	1	—	0 1 6	,,
21553B	C36—25 mfd., electrolytic	1	—	0 2 6	,,
24900W	C37—0·05 mfd.	1	—	0 1 3	,,
22675E	C39—32 mfd., electrolytic	1	—	0 7 6	,,
28160A	C40—12 mfd., electrolytic	1	—	0 6 0	,,
22675H	C41—16 mfd., electrolytic	1	—	0 7 6	,,
24900Q	C42—0·015 mfd.	1	—	0 1 0	,,
24900J	C43—0·005 mfd.	1	—	0 1 0	,,
22330BG	C45—·00015 mfd.	1	—	0 2 6	,,
22330BL	C46—0·00035 mfd.	1	—	0 2 6	,,
	C47—1 mfd., electrolytic, with C17				
	C48—2 mfd., electrolytic, with C17				
22164J	C49—50 mmfd.	1	—	0 0 9	Each.
	C50—8 mfd., electrolytic, with C17				
22164C	C52—10 mmfd.	1	—	0 0 9	Each.
*22330CP	C53—0·0035 mfd.	1	—	0 2 6	,,
22164E	C55—0·23 mfd.	1	—	0 0 9	,,
24900W	C56—0·05 mfd.	1	—	0 1 3	,,
22164J	C57—50 mmfd.	1	—	0 0 9	,,
22164M	C58—5 mmfd.	1	—	0 0 9	,,
22164C	C59—10 mmfd.	1	—	0 0 9	,,
* Note.—	On some models C13 may be increased to 0·007 mfd. (part No. 22005T) and C53 left out.				
26350AH	TC1—Single pre-set condenser	1	—	0 1 0	Each.
23922D	TC2, TC3 and TC4—Triple pre-set condenser	1	—	0 2 0	,,
23922D	TC5, TC6 and TC7—Triple pre-set condenser	1	—	0 2 0	,,
26350A	TC9 and TC13—Double pre-set condenser	1	—	0 1 3	,,
23922B	TC10, TC11 and TC12—Triple pre-set condenser	1	—	0 2 0	,,
	TC13—With TC9				
26350AG	TC14—Single pre-set condenser	1	—	0 1 3	Each.
	TC15 and TC16—In IFT1				
	TC17and TC18—In IFT2				
10710	Screw, 4BA }	3	WN	0 0 2	Doz.
3166	Washer, S.P , 4BA }	3	—	0 0 2	,,
11628	Nut, 4BA } securing single and double pre-set condensers	3	WN	0 0 4	,,
11231	Screw, 6BA }	3	WN	0 0 2	,,
3165	Washer, S.P., 6BA }	3	—	0 0 2	,,
10050	Screw }	3	WN	0 0 3	,,
3166	Washer, SP } securing triple pre-set condenser	3	—	0 0 2	,,
26130J	VC1, VC2 and VC3—Three gang condenser	1	—	0 19 6	Each.

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	CONDENSERS—*continued*				
26113	Bracket	1	AlSp	0 0 2	Each.
11219	Screw	2	WN	0 0 3	Doz.
3166	Washer, SP } securing bracket to front of three-gang condenser	2	—	0 0 2	,,
21236	Rubber bush	3	—	0 0 1	Each.
6305	Washer	3	WN	0 0 1	Doz.
3167	Washer, SP } securing three-gang condenser	3	—	0 0 2	,,
11627	Nut	3	WN	0 0 6	,,
	SWITCHES				
28004A	S1–S10—Wave band switch	1	—	0 12 3	Each.
11628	Nut	2	WN	0 0 4	Doz.
3166	Washer, SP	2	—	0 0 2	,,
18817A	S12—Variable selectivity switch	1	—	0 2 6	Each,
14697	Nut, securing S12 to bracket	2	WN	0 0 11	Doz.
25402	Bracket	1	CdP	0 0 1	Each.
25404A	Switch operating arm	1	CdP	0 0 3	,,
13387	Screw, securing operating arm to spindle of VR3	2	WN	0 0 3	Doz.
	S13—Mains On/Off switch—*see* VR1				
	CONDENSER DRIVE AND TUNING DETAILS				
28015A	Spring gear assembly	1	—	0 1 3	Each.
24045	Spring	2	—	0 0 1	,,
13387	Screw, securing spring assembly to spindle of three-gang condenser	2	WN	0 0 3	Doz.
28013A	Plate and bush	1	AlSp	0 0 6	Each.
1021	Washer } securing plate to pillars on three-gang condenser	2	WN	0 0 3	Doz.
11627	Nut }	2	WN	0 0 6	,,
28017A	Intermediate gear, with friction disc	1	—	0 0 6	Each.
24833K	Condenser drive mechanism	1	—	0 3 0	,,
26114	Outer spindle	1	CP	0 1 0	,,
26115	Inner spindle	1	—	0 0 4½	,,
3658	Ball	3	—	0 0 2	Doz.
24832	Retaining washer	2	—	0 0 1	Each.
24834	Clamping ring	1	—	0 0 9	Doz.
11328	Screw } securing clamping ring	4	WN	0 0 2	,,
25092	Spring }	4	—	0 0 6	,,
11222	Screw } securing drive mechanism to plate	2	WN	0 0 2	,,
3166	Washer, SP }	2	—	0 0 2	,,
21823B	Disc drive assembly	1	—	0 0 3	Each.
11805	Screw, PK, securing disc drive assembly to spindle of drive mechanism	1	—	0 0 6	Doz.
26159A	Pointer	1	CB	0 0 3	Each.
13893	Screw, securing pointer to spring gear assembly	2	WN	0 0 8	Doz.
28010A	Scale frame assembly	1	BnBak Sp local	0 3 9	Each.
8777	Screw, PK, securing scale frame assembly to chassis	4	—	0 0 6	Doz.
28009B	Scale (printed)	1	—	0 4 0	Each.
26147	Scale clamping strip, LH, securing scale	2	BnEn local	0 0 1	,,
26147A	Scale clamping strip, RH, securing scale	1	BnEn local	0 0 1	,,
28092	Washer	2	WN	0 0 3	Doz.
28093	Rubber strip, short	8	—	0 0 3	,,
28094	Rubber strip, long	1	—	0 0 6	,,
11805	Screw, PK	4	—	0 0 6	,,
28020B	Vernier dial (printed)	1	—	0 0 6	Each.
10257	Grub screw, securing vernier dial	2	WN	0 0 1	,,
26610D	Wave band indicator dial (printed)	1	—	0 0 9	,,
28012A	Indicator bracket	1	CdP	0 0 3	,,
11219	Screw	2	WN	0 0 3	Doz.
3166	Washer, SP } securing indicator bracket	2	—	0 0 2	,,
26609	Clamping plate	1	CdP	0 0 2	,,
26612	Pivot spindle for indicator dial	1	WN	0 0 2	Each.

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	CONDENSER DRIVE AND TUNING DETAILS—*continued*				
10615	Circlip, securing indicator dial on spindle	1	WN	0 0 2	Doz.
13387	Screw, securing pivot spindle	1	WN	0 0 3	,,
18751A	Sprocket	1	—	0 0 8	Each.
13387	Screw, securing sprocket to spindle of S1–S10	2	WN	0 0 3	Doz.
26138D	Chain	1	—	0 0 6	Each.
27957	Spring	1	—	0 0 1	,,
28016	Lamp bracket	1	CdP	0 0 1	,,
8777	Screw } securing lamp bracket	2	—	0 0 6	Doz.
3166	Washer, SP } securing lamp bracket	2	—	0 0 2	,,
26136A	Lamp holder	1	—	0 0 9	Each,
26135A	Lamp	1	—	0 3 0	,,
27915	Screen, for lamp	1	CdP	0 0 4	,,
8777	Screw, PK, securing screen	2	—	0 0 6	Doz.
23987G	Lamp lead	1	—	0 0 9	Each.
28018A	Bracket,for VT	1	CdP	0 0 6	,,
11219	Screw }	2	WN	0 0 3	Doz.
3166	Washer, SP } securing bracket for V.T.	2	—	0 0 2	,,
28033	Clamping strip }	1	CdP	0 0 3	,,
24369	Clamp	1	CdP	0 0 1	Each.
11219	Screw } securing clamp to bracket for VT	2	WN	0 0 3	Doz.
3166	Washer, SP } securing clamp to bracket for VT	2	—	0 0 2	,,
24380G	Visual tuner socket and lead with R18	1	—	0 2 6	Each.
24380A	VT socket	1	—	0 0 6	,,
28044A	VT lead	1	—	0 1 3	,,
	VALVE HOLDERS, SCREENS, PANELS, ETC.				
26005A	Valve holder	8	—	0 0 6	Each.
24981	Valve screen base	6	CdP	0 0 1½	,,
16358	Rivet, securing holder and valve screen base	12	—	0 0 1	Doz.
16353	Rivet, securing valve holders (V7 and V8)	4	—	0 0 1	,,
24982A	Valve screen	6	—	0 1 9	Each.
26112	Valve screen, top (V1, V2 and V6)	3	—	0 0 2	Doz.
22267A	Valve screen (V7)	1	Syn Bl En	0 0 6	,,
12619	Screw, securing valve screen	3	—	0 0 6	,,
28002A	Coil screen	3	—	0 1 0	Each.
8777	Screw, PK, securing coil screens	6	—	0 0 6	Doz.
24013	Coil spacer	3	—	0 0 3	,,
27651A	Bracket with panel and seven sockets (A.E., etc.)	1	—	0 1 3	Each.
10606	Screw, PK, securing bracket	3	—	0 0 7	Doz.
27915	Lamp screen	1	CdP	0 0 4	Each.
8777	Screw, PK, securing lamp screen	2	—	0 0 6	Doz.
21282B	Screen, with panel and four tags	1	—	0 0 6	Each.
28007A	Screen, with two panels, each with four tags	1	—	0 0 9	,,
8777	Screw, PK, securing screens to top of three-gang condenser	2	—	0 0 6	Doz.
25174A	Tag panel, with seven tags (two long ones at ends)	1	—	0 0 3	Each.
25174B	Tag panel, with seven tags	1	—	0 0 3	,,
24017A	Tag panel, with five tags	1	—	0 0 3	,,
24020A	Tag panel, with three tags	2	—	0 0 2	,,
12619	Screw, PK, securing tag panels	10	—	0 0 6	Doz.
19810	Clip, for C21 and C35	2	CdP	0 0 8	,,
12619	Screw, PK, securing clips	2	—	0 0 6	,,
24038	Clip, for top of valves	5	—	0 0 1	Each.
7155	Cleat	3	WN	0 0 1	,,
12619	Screw, PK, securing cleats	3	—	0 0 6	Doz.
17304	Long tag	4	—	0 0 3	,,
16755	Insulating bush	3	—	0 0 1	Each.
16755	Insulating bush (large)	8	—	0 0 1	,,

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	MODEL 539				
	Instructions.				
28263	Valve position label	1	—	0 0 1	Each.
28048	Instruction card	1	—	0 0 6	,,
22291	Station chart	1	—	0 0 6	,,
26111	Voltage adjustment label	1	—	0 0 1½	,,
26173	Voltage adjustment label (metal)	1	—	0 0 6	Doz.
25821	Transit label	1	—	0 0 1	Each.
8936	Transfer " Close lid whilst playing "	1	—	0 0 1	,,
4896	Oiling diagram	1	—	0 0 1	,,
	CABINET PARTS AND FITTINGS				
83790B	Cabinet	1	Pol	20 10 0	Each.
9359	Dome, for base	4	Pol	0 0 1	,,
—	Lid with felt	1	Pol	4 13 0	,,
9385A	Lid hinge	1	BzP	0 5 0	,,
9525	Lid hinge screw	18	BzP	0 0 2	Doz.
6208AJ	Lid stay, R.H.	1	BzP	0 6 6	Each.
6208AK	Lid stay, L.H.	1	BzP	0 6 6	,,
9561	Lid stay screw	8	BzP	0 0 2	Doz.
9290A	Lid lock	1	BzP	0 2 6	Each.
V3769	Lid lock keeper	1	BzP	0 0 4	,,
9958	Lid lock and keeper screw	4	BzP	0 0 2	Doz.
9776	Lid lock escutcheon	1	BzP	0 0 4	Each.
18636	Lid lock escutcheon pin	2	—	0 0 1	Doz.
9778	Lid lock key	1	BzP	0 0 6	Each.
—	Motor board	1	Pol	1 5 0	,,
8684	Motor board screw	4	BzP	0 0 6	Doz.
—	Radio panel	1	Pol	0 19 6	Each.
8639	Radio panel screw, to bearers	2	BzP	0 0 4½	Doz.
19144	Radio panel screw, to side panel	2	BzP	0 0 3	,,
14670	Lifting knob, for radio panel and motor board	2	BzP	0 0 6	Each.
11214	Screw, securing lifting knob	2	WN	0 0 2	Doz.
—	R.H. side panel	1	Pol	0 18 6	Each.
23198	Felt for side panel	2	—	0 0 1	,,
—	Baffle board, with insert nuts	1	Std	0 4 3	,,
14922	Insert nut, for loudspeaker	4	CB	0 1 4	Each.
15832	Screw, securing baffle board	8	—	0 0 2	Doz.
25069	Wire mesh	1	AnBr	0 6 6	Each.
19273	Pin, securing wire mesh to baffle	6	—	0 0 1	Doz.
—	Felt for wire mesh, ⅛ inch, S1429, 225/82316	—	—	0 0 9	Sq. ft
—	Feltfor wire mesh, ¼ inch, S1459, 225/84316	—	—	0 1 0	,,
—	Felt for lid, 1/16 inch, S999, 225/85501	—	—	0 0 9	,,
24873	Bracket, for cabinet back	4	CdP	0 0 1	Each.
2418	Screw, securing brackets	8	—	0 0 3	Doz.
28046A	Cabinet back (printed)	1	—	0 2 9	Each.
19896	Screw	4	ParB	0 0 1	,,
19895	Washer } securing cabinet back	4	ParB	0 0 4	Doz.
	CONTROLS				
24371	Knob—Tuning, large	1	—	0 0 7	Each.
24855A	Knob—" Tuner "	1	ChF	0 0 7	,,
11773	Grub screw, securing tuner knob	1	WN	0 0 5	Doz.
17054U	Knob—" Brilliance "	1	ChF	0 0 7	Each.
17054Q	Knob—" Wave Band "	1	ChF	0 0 7	,,
17054H	Knob—" On/Off "	1	ChF	0 0 7	,,
17054X	Knob—" Bass "	1	ChF	0 0 7	,,
17054F	Knob—" Volume "	1	ChF	0 0 7	,,
17054V	Knob—" Ext. Int. Speaker "	1	GoldF	0 0 7	,,
11805	Screw, PK, securing knobs	6	—	0 0 6	Doz.

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	CONTROLS—*continued*				
	On Side Panel.				
4375	Volume control escutcheon	1	—	0 0 6	Each.
8717	Screw, securing escutcheon	3	BzP	0 0 2	Doz.
	On Radio Panel.				
28034	Tuning escutcheon	1	—	0 1 3	Each.
9545	Screw, securing escutcheon	4	BzP	0 0 3	Doz.
28028	Window	1	—	0 0 4½	Each.
26128	Rubber, top	1	—	0 0 4½	Doz.
26129	Rubber, side	2	—	0 0 2	,,
28029	Rubber, bottom	2	—	0 0 4	,,
26107	Clamp } securing window	4	—	0 0 4½	,,
14791	Screw } securing window	4	BzP	0 0 4	,,
	On Motor Board.				
394W	Turntable, with felt and friction band	1	BzP	0 5 5	Each.
3569	Felt, brown	1	—	0 0 6	,,
282	Friction band	1	—	0 0 2	,,
13869	Spring ring	1	—	0 0 6	Doz.
1002	Turntable clip	1	ChP	0 1 0	,,
24S	**Motor**	1	—	2 17 6	Each.
1176	Governor bearing, grooved, worm end	1	WN	0 0 1	,,
1403	Governor bearing, plain	1	WN	0 0 1	,,
3540	Governor bearing, ball	2	—	0 0 1	Doz.
2438	Governor bearing, screw	2	WN	0 0 5	,,
19708A	Governor assembly	1	—	0 4 0	Each.
19708	Governor spindle	1	—	0 1 2	,,
19702A	Collar	1	—	0 0 4	,,
11851	Screw, securing collar to spindle	1	WN	0 0 4	Doz.
19704B	Friction disc and sleeve	1	—	0 0 7	Each.
19705A	Ball and spring	3	—	0 0 2	,,
19707	Clip securing ball and spring to collar and sleeve	2	OB	0 0 10	Doz.
17918A	Regulator bracket with friction pad, felt strip and securing screw	1	—	0 0 6	Each.
9403	Friction pad	1	—	0 0 2	Doz.
17919	Felt strip	1	—	0 0 3	,,
13811	Rivet } securing felt strip	1	—	0 0 2	,,
1750	Washer } securing felt strip	1	WN	0 0 1	,,
2318	Screw	1	WN	0 0 7	,,
13610	Regulator lever	1	—	0 0 3½	Each.
3926	Regulator spring	1	—	0 1 9	Doz.
3399	Stop pin	1	WN	0 0 4	,,
3395	Collar	1	WN	0 2 3	,,
2318	Screw, securing collar to regulator spindle	1	WN	0 0 7	,,
3904	Turntable spindle bearing screw	1	WN	0 1 5	,,
3905	Lock nut	1	WN	0 0 9	,,
3523	Ball, for bearing	1	—	0 0 2	,,
24449	Turntable spindle	1	BzP	0 1 0	Each.
16440	Turntable drive washer	1	—	0 0 2	,,
16442	Turntable drive collar	1	WN	0 0 2	,,
10674	Grub screw, securing collar	1	WN	0 0 4	Doz.
3900A	Induction disc rotor	1	—	0 5 3	Each.
2500	Screw, securing rotor	2	WN	0 0 4	Doz.
25527A	Governor drive gear	1	—	0 1 3	Each.
25528	Screw, securing drive gear to spindle	2	WN	0 0 3	Doz.
3903K	Coil unit, complete	1	—	1 1 0	Each.
15346A	Terminal strip, with two tags	1	—	0 0 1	,,
16091	Screw } securing terminal strip	2	WN	0 0 7	Doz.
1088	Washer } securing terminal strip	2	WN	0 0 3	,,
16092	Distance piece } securing terminal strip	2	AcD	0 0 7	,,
18945	Clamping plate } securing terminal strip	1	AcD	0 0 1	Each.
5629	Nut	2	WN	0 0 8	Doz.
16095Q	Condenser, 1 mfd.	1	—	0 1 6	Each.
2712	Screw, securing coil unit and condenser	4	WN	0 0 1	,,

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	CONTROLS—*continued*				
2405	Screw }	3	WN	0 0 2	Each.
3460	Spring Washer } securing motor	3	—	0 0 3	Doz.
1039	Washer }	3	WN	0 0 2	,,
25621	Spacer }	3	WN	0 0 9	,,
230E	**Auto switch brake**	1	BzP	0 7 3	Each.
2418	Screw, securing brake	3	WN	0 0 3	Doz.
246	Brake escutcheon	1	BzP	0 0 4	Each.
2418	Screw, securing escutcheon	2	BzP	0 0 4	Doz.
2440A	Speed regulator screw	1	BzP	0 0 4	Each.
4698A	Speed regulator escutcheon	1	BzP	0 0 5	,,
8717	Screw, securing escutcheon	2	BzP	0 0 2	Doz.
9430	Needle bowl	1	AcD	0 0 4	Each.
4369	Needle bowl cover	1	—	0 0 9	,,
3484	Needle bowl support	1	WN	0 0 2	,,
9932	Needle bowl support screw	3	WN	0 0 2	Doz.
18899	Needle box clip	1	BzP	0 0 6	Each.
2418	Screw, securing clip	2	BzP	0 0 4	Doz.
15969A	Pick-up rest, with felt	1	BzP	0 0 9	Each.
15970	Felt, brown	1	—	0 0 2	Doz.
2418	Screw, securing rest	2	BzP	0 0 4	,,
28060C	**Pick-up and arm**	1	—	1 12 0	Each.
17495	Trade mark insert	1	—	}	
28060	Pick-up arm	1	—	0 1 6	,,
28063A	Pick-up head assembly	1	—	0 10 0	,,
28063	Pick-up head moulding	1	—	0 0 9	,,
16101	Pole piece	2	WN	0 1 9	,,
16113	Screw, securing pole pieces	4	WN	0 0 8	Doz.
16109	Armature	1	CdP	0 0 6	Each.
16103	Armature pivot	2	—	0 0 6	Doz.
16102	Damping rubber	1	—	0 0 1	Each.
16104	Damping rubber clamp	1	WN	0 0 5	Doz.
16126	Screw, securing clamp	2	WN	0 0 4	,,
17856	Needle screw	1	BzSp	0 0 1½	Each.
16110	Magnet	1	—	0 2 1	,,
16111A	Coil	1	—	0 2 0	,,
16119	Insulating sleeve, for lead joints	3	—	0 0 10	Doz.
16106	Lead clamp	1	WN	0 0 7	,,
16118	Bracket supporting lead cover	1	CB	0 0 1	Each.
11238	Screw, securing bracket and lead clamp	1	BzP	0 0 2	Doz.
21036	Fibre washer	1	—	0 0 2	,,
16115	Rubber pad	2	—	0 0 6	,,
16112	Screw, securing pick-up head to arm	1	WN	0 0 1	Each.
19156A	Pick-up lead	1	—	0 1 3	,,
16700	Lead cover	1	—	0 0 3	Doz.
18769	Bracket } supporting rear end of lead cover	1	BMEn	0 0 1½	Each.
11237	Screw }	1	BzP	0 0 5	Doz.
16122	Support pillar	1	—	0 0 11	Each.
16121	Fixing base	1	—	0 0 8	,,
16107A	Spring and anchor rings	1	CB	0 0 2	,,
16108	Spring anchor	1	WN	0 0 6	Doz.
16114	Pivot screw, for P.U. arm	1	BzP	0 0 1½	Each.
3519	Ball	8	—	0 0 1½	Doz.
17001	Spacer, for balls	1	WN	0 0 3	Each.
16128	Stop screw	1	BzP	0 0 8	Doz.
16127A	Brake arm and pin	1	BzP	0 0 11	Each.
11228	Screw, securing brake arm	3	BzP	0 0 4	Doz.
9547	Screw, securing P.U.	1	—	0 0 2	,,
21490F	S14 extra L.S. switch	1	—	0 2 0	Each.
26637	Bracket	1	CdP	0 0 1½	,,
8651	Screw, securing bracket to motor board	2	BzP	0 0 3	Doz.
	LOUDSPEAKER				
24460S	Loudspeaker (as on table model)	1	—	2 0 0	Each.
11213	Screw } securing loudspeaker	4	WN	0 0 2	Doz.
3167	Washer, SP }	4	—	0 0 2	,,

Part No.	Description	Parts per Inst.	Finish	Retail List Price £ s. d.	Per
	LEADS, PLUGS, PANELS, ETC.				
27917A	Aerial lead, with two plugs	1	—	0 1 9	Each.
16289B	Plug, black	1	—	0 0 2	,,
16289J	Plug, yellow	1	—	0 0 2	,,
27918A	Anti-static aerial lead with one plug	1	—	0 1 6	,,
16289J	Plug, yellow	1	—	0 0 2	,,
27916A	L.S. lead	1	—	0 2 6	,,
26377C	Ext. L.S. lead	1	—	0 1 0	,,
26377E	L.S. switch lead with three-pin panel	1	—	0 1 3	,,
26179A	Three-pin panel	1	—	0 0 3	,,
22997C	Motor to transformer lead, with clip and two tags	1	—	0 1 0	,,
11892	Clip	1	AcD	0 0 6	Doz.
19829	Tag	2	—	0 0 2	,,
22998B	Motor earth lead with one tag	1	—	0 0 3	Each.
3338	Tag	1	—	0 0 6	Doz.
12599E	Mains lead with two tags	1	—	0 2 6	Each.
11802	Tag	2	—	0 0 3	Doz.
16289B	Plug, black	2	—	0 0 2	Each.
16289J	Plug, yellow	2	—	0 0 2	Each.
18888A	Carton for mains lead and plugs	1	—	0 0 1	,,
27651C	Bracket with panel and five sockets (A.E., etc.)	1	—	0 1 3	,,
27924A	Panel with sockets	1	—	0 0 6	,,
16353	Rivet, securing panel to bracket	4	—	0 0 1	Doz.
9559	Screw, securing bracket to cabinet	3	WN	0 0 4	,,
26635A	Bracket, with panel and sockets for Ext. L.S. switch and sockets for Ext. L.S.	1	—	0 1 6	Each.
11531G	Panel with three sockets	1	—	0 0 3	,,
13803	Rivet, securing panel to bracket	2	—	0 0 3	Doz.
19104AA	R43—50 ohms	1	—	0 1 0	Each.
9559	Screw, securing bracket to cabinet	2	WN	0 0 4	Doz.
	RADIO UNIT				
28000F	Radio unit	1	—	14 7 6	Each.
11216	Screw } securing radio unit	4	WN	0 0 4	Doz.
10173C	Spring washer } securing radio unit	4	—	0 0 2	,,
14748	Washer } securing radio unit	4	WN	0 0 2	,,
11206	Transit bolt	4	Red head	0 0 3	,,
10173B	Spring washer	4	—	0 0 2	,,
24778	Special washer	4	WN	0 0 6	,,
	Parts of Radio Unit different from those on table model.				
18300CV	VR1, volume control	1	—	0 5 0	Each.
27980	Bracket	1	CdP	0 0 2	,,
11805	Screw, securing bracket	2	—	0 0 6	Doz.
22304P	S13—Mains On/Off switch	1	—	0 2 0	Each.
28042B	Tuning scale	1	—	0 4 0	,,
28020C	Vernier dial (printed)	1	—	0 0 6	,,
26610F	Wave band indicator dial (printed)	1	—	0 0 9	,,
28043A	Visual tuner bracket	1	CdP	0 0 6	,,

"FINISH" CODE

AcD	Acid Dip.
AlSp	Aluminium Spray.
AnBr	Antique Brass.
BMEn	Black Matt Enamel.
BnBakSp	Brown Bakelite Spray.
BSp	Black Spray
BzP	Bronze Polish
BzSp	Bronze Spray.
CB	Camera Black.
CdP...	Cadmium Plate.
ChF...	Chrome Filled.
CP...	Copper Plate.
OB...	Oil Black.
ParB...	Parkerised Black.
Pol	Polished.
Std	Standard.
SynBEn	Synthetic Black Enamel.
WN...	White Nickel.

In order to expedite delivery of spare part orders, please quote :—

1. Model number and serial number.
2. Spare part number, description, and " finish " as given in the above list.
3. Quantity required.

Unless full particulars are quoted, delay in the execution of orders must inevitably result.

Order spare parts from :—

E.M.I. SERVICE, LTD.
SHERATON WORKS, HAYES, MIDDLESEX.

Telephone : Southall 2468. Telegraphic Address : Service, Hayes, Middlesex.

The Company reserves the right to make any modifications without notice.

H & S Ltd

Printed in England.