



MARCONIPHONE

SERVICE MANUAL

PRIVATE AND CONFIDENTIAL
TO THE TRADE ONLY



MODEL 857

5-Valve All-Wave Superhet
for A.C. Mains

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PART NO.

2 0 5 7 5

TECHNICAL SPECIFICATION

VOLTAGE RANGE

195 to 255 volts A.C.
50 to 100 cycles.

POWER CONSUMPTION

Approximately 70 watts.

FUSES

It is recommended that this instrument is connected only to supply points protected by 2-ampere fuses.

SPEECH OUTPUT

Approximately 3 watts.
Anode dissipation of KT63 output valve, 8 watts.

WAVELENGTH RANGE

S.W.—13.5 to 50 metres.
M.W.—195 to 580 metres.
L.W.—900-2,000 metres.

DIMENSIONS

Height, 16½ inches. Width, 17¼ inches. Depth, 11⅛ inches.

WEIGHT

32 lb. net. 62 lb. gross.

VALVES

Marconi X63	...	...	...	Frequency changer.
„ KTW63	...	...	...	I.F. amplifier.
„ DH63	...	...	...	Detector and A.V.C. diodes and L.F. amplifier.
„ KT63	...	...	...	Output Valve.
„ U50	...	...	...	H.T. rectifier.

LOUDSPEAKER.

No. 20277B.

The field winding of this loudspeaker is utilized as a smoothing choke in the positive H.T. supply lead. The output transformer is mounted on the radio chassis in this model.

D.C. resistance of speech coil, 3 ohms.

Impedance at 800 cycles, 3.75 ohms.

D.C. resistance of field coil, 1,660 ohms.

EXTRA LOUDSPEAKERS.

This receiver will operate two additional loudspeakers without greatly reducing the volume of the built-in speaker. Extra speakers should be connected across tags 1 and 5 on the loudspeaker panel, and their total impedance should be adjusted to approximately 5 ohms.

CONNECTING A PICK-UP.

A high resistance pick-up may be connected to the sockets provided. With the pick-up plugs in position, the volume and tone controls become operative on gramophone. The Marconiphone Model 25 Pick-up is recommended, and should have a 7,500-ohm resistance wired across it.

Both pick-up plugs must be removed to revert to radio reception.

CIRCUIT DESCRIPTION

For circuit diagram see page 9.

AERIAL COUPLING.

A single pre-selection circuit using high Q inductances, is employed between the aerial and the frequency changer. The coupling circuit contains image rejectors (L1, C5, C1) and high impedance coupling coils (L4, L5) for medium and long waves, and direct capacity coupling (C4) on short waves. The tuned circuits, L3, L6, L7, are switched across the tuning condenser and the grid of the frequency changer V1.

FREQUENCY CHANGER.

The heptode frequency changer (X63) has coupled coils L8, L11 for the production of oscillation on the short waves, but on medium and long waves single tapped inductances are used in a circuit giving capacity and inductance coupling. This valve is A.V.C. controlled and is coupled to the I.F. amplifier by an iron-cored I.F. transformer.

I.F. AMPLIFIER.

The KTW63 has an iron-cored I.F. transformer (465 kc.) coupling the anode to the double-diode-triode V3. A reduced A.V.C. voltage is applied to the grid of V2 from a tapping on the A.V.C. diode load.

SECOND DETECTOR.

The signal diode of V3 has a load resistance R6 and filter circuit R7, C16, feeding the volume control VRI which supplies the grid of the triode portion with L.F. signals. This triode grid is biased by the connexion of the bottom end of VRI to a tapping on the bias potentiometer across a bias dropping resistance R17, in the main H.T. lead. Initial bias for V1 and V2 is similarly obtained from the bias pot, and delay voltage for the A.V.C. diode, the tapped load for which (R10, R11, R12) is connected down to a third tapping. One pick-up socket is connected to the volume control whilst the other has two halves which, when shorted together by the plug, connect the grid of the I.F. valve to chassis via C38 thus silencing radio.

OUTPUT STAGE.

Resistance capacity coupling is employed between the DH63 and the KT63 tetrode output valve. A combined tone correction and tone control circuit (C22, VR2) is connected between its anode and grid.

H.T. SUPPLY.

The full-wave rectifier U50 supplies all valves with H.T. current which is smoothed by the loudspeaker field in conjunction with electrolytic condensers C25, C23, etc.

PRELIMINARY TESTS

The following tests, if systematically carried out, will help in locating a fault in the receiver. The majority may be performed without removing the receiver from the cabinet.

Measure across field coil tags on L.S. panel, 105 volts, 1,660 ohms.

If valves and pilot lamp light, but signals are unobtainable, check voltage across L.S. field. Absence of voltage may be due to faulty V5, T2 (windings 5, 6, 7, or 8, 9) open circuit in L.S. field winding or connecting leads, or in main H.T. lead.

L.F. Test.—Gramophone reproduction O.K., or a loud hum when top pick-up socket is touched, volume at maximum and earth disconnected.

Results on gramophone but not on radio indicate that the L.F. side of the receiver (V3, V4, V5) is O.K., and that the fault lies in the H.F. stages (V1, V2 or possibly V3). If no results are obtained from this test, check the speech coil for continuity.

H.F. Test.—Contact the aerial on to top grid VI (X63). This test eliminates the aerial tuning circuits ; medium wave results should be obtained, but with whistles and loss of selectivity.

Oscillator Test.—Contact voltmeter across R3 in oscillator circuit and note readings with L8, L9, L10, first in circuit and then shorted out.

This test shows whether the oscillator is functioning correctly. When the coils are shorted, the voltage should rise considerably, indicating an increase in oscillator anode current.

Note.—The readings will vary both with the waveband and with the point to which the receiver is tuned.

Crackles and Noise.—Faulty valves or bad contacts or connexions. Check all valves for freedom from inter-electrode contacts, see that valve legs are clean and make good contact, and examine all wiring carefully. If man-made static is causing interference, recommend the fitting of a Marconiphone Filter aerial.

CONTINUITY CHECKS

Resistance values \pm 20 per cent. Remove valves and pilot lamp.

Component	Measured	Switch	Resistance
L1, L2, L4, L5	Aerial and earth sockets	SW MW	(L1, L2 and L5) 44 ohms. (L1, L2, L4, L5) 10 ohms. (L1, 9.5 ohms) (L2, 33 ohms.) (L4, 0.4 ohms.) (L5, 1.6 ohms.)
L3, L6, L7	Fixed vanes VCI and C3	SW MW LW	0.1 ohm (L3). 2 ohms (L6). 9.0 ohms (L7).
L8	Contacts 9 and 13, S1	—	0.1 ohm.
L9	Contacts 10 and 14, S1	—	2.8 ohms.
L10	Contacts 12 and 16, S1	—	3.6 ohms.
L11	Across ends	—	1.2 ohms.
L12	Anode VI (X63) and field coil tag L.S. panel	—	4.5 ohms.
L13, L3, R11	Top cap V2 (KTW63) and top cap VI	SW	0.5 megohm. (L13, 4.5 ohms.)
L14	Anode V2 and field coil tag L.S. panel	—	4.5 ohms.
L15, R6	Diode V3 (DH63) and chassis	—	0.5 megohm. (L15, 4.5 ohms.)
R1	Oscillator grid VI and chassis	—	50,000 ohms.
R20	Across ends	—	75 ohms.
R6, R7	Top P.U. socket and chassis	—	0.73 megohm.
VR1	Control grid V3 and negative side C17	—	25 ohms to 2 megohms.
R10, L3	Diode V3 and top cap VI	SW	1 megohm.
R12, R13, R14, R16, R17, R21, L13	Top cap V2 and chassis	—	2.47 megohms.
R15, R16, etc.	Grid V4 and chassis	—	0.33 megohm.
VR2	Control grid V4 (KT63) and slider	—	25 ohms to 2 megohms.
For T1, T2, L.S. Field and Speech Coil	See circuit diagram	—	—

H.F. TESTS AND ADJUSTMENTS

The use of a tuning unit (comprising all R.F. coils, trimmers and wavechange switch) and the provision of fully adjustable inductances considerably simplifies ganging work on this model. For instance, in the event of a seriously faulty wave-change switch or coil, the entire unit can be replaced very easily (see below) and if the M.W. and L.W. inductance trimming has already been done on a standard chassis, only a slight touch-up will be needed to the trimmer condensers to bring the receiver perfectly into alignment.

In general, the iron cored inductances are very stable, and unless repair work or replacement has been carried out on the coil itself it is rarely necessary to re-adjust these inductances when ganging. The usual symptom of mismatched inductances is low sensitivity at the high end of the wavescale. In the event of it being thought necessary to adjust inductances it is important first to remove the shield covering the R.F. unit, and scrape or melt the wax away from the thread on the L.W. coil, and from the sides of the M.W. coil. Replace the shield before ganging.

REMOVAL OF COIL UNIT.

1. Remove cover shield.
2. Remove seven leads connecting the unit to the rest of the receiver.
3. Slacken switch fixing nut, and remove two screws securing switch bracket. The unit may now be lifted out.

GANGING

Always follow any adjustment to the I.F. trimmers with complete R.F. alignment (L.W., M.W., S.W.) but where work has been done or sensitivity is low on a specific band, it is necessary only to re-gang this band. For this the following are required. A screened oscillator (50 to 2,000 metres, 6 megacycles to 150 kilocycles) with an attenuator, an output meter or 0-1 A.C. voltmeter, a trimming screwdriver with a minimum of metal in the blade, and if the inductance trimming on M.W. requires to be done, a special tool for this purpose. All the above may be obtained from E.M.I. Service Ltd.

In carrying out ganging operations the input to the receiver from the oscillator must be kept low and progressively reduced as the circuits are brought into line so that the output meter reading does not exceed 50 mW or 0.45 volt with the receiver volume control at maximum. The output meter should be connected between the anode of V4 (KT63) and chassis, but if an A.C. voltmeter is used it must be connected across the L.S. speech coil.

I.F. GANGING.

Switch receiver to L.W., set gang condenser to maximum capacity, volume control to maximum, and tone control to maximum top (fully anti-clockwise). Tune oscillator to 465 kc. (645.2 metres) and connect output leads to fixed vane tag of VCI (via a 0.1 mfd. condenser), and to chassis, leaving grid lead connected to V1 and the cap in place.

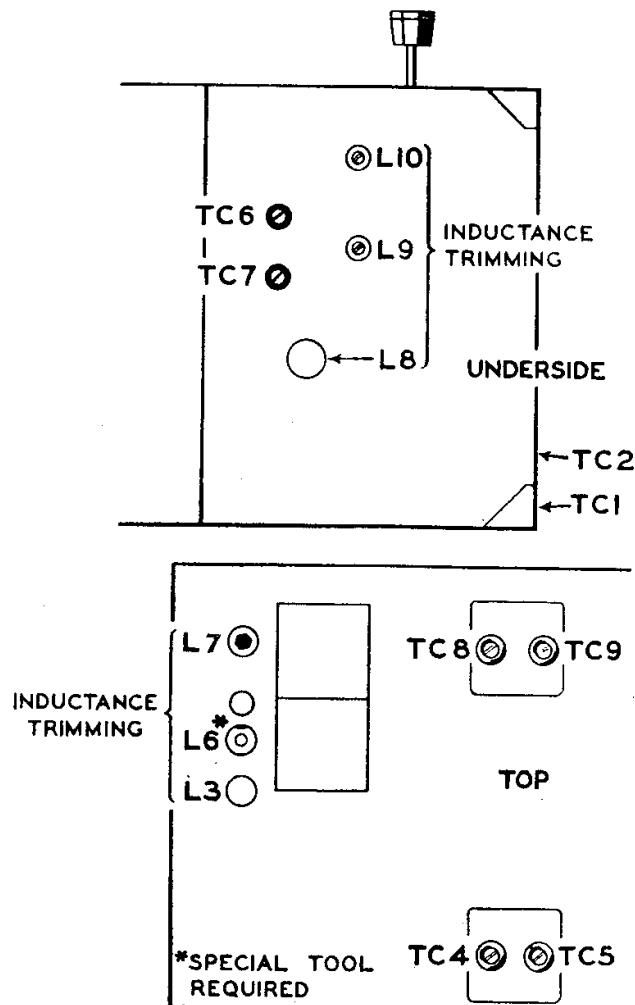
1. Switch on receiver and oscillator.
2. Adjust TC4, TC5, TC8 and TC9 in that order for maximum output.
3. Check adjustment in the same order.

MEDIUM WAVES.

Set receiver to M.W., volume to maximum and tone control fully anticlockwise. Connect oscillator to aerial and earth sockets.

IMPORTANT NOTE.—It is essential that before ganging, the position of the wavescale and pointer is checked. The scale must be positioned so that the pointer spindle hole is exactly concentric with the spindle, and the scale must be square in its frame. Now turn the gang condenser to maximum and adjust the pointer to coincide exactly with the small black spot which will be found at the top right-hand corner of the scale. All ganging is now done to settings on the scale itself, and the gang condenser must not be rocked, or the positioning of the pointer altered in any way. The use of this method will produce very good accuracy of calibration.

1. Set receiver (by spot on scale) and oscillator to 225 metres (1,333.3 kc.).
2. Adjust TC7 for maximum output.
3. Set receiver (by spot on scale) and oscillator to 530 metres (566 kc.).
4. Adjust spade trimmer of L9 for maximum output.
5. Repeat operations 1, 2, 3 and 4.
6. Repeat operations 1 and 2.
7. Tune receiver (by scale) and oscillator to 225 metres.
8. Adjust TC2 for maximum.
9. Tune receiver (by scale) and oscillator to 530 metres.
10. Rotate upper core of L6 for maximum by means of the special tool (obtainable from E.M.I Service, Part No. 20730A), which consists of a pointed rod of insulating material with a rubber bush. It should be inserted through the hole in the chassis, the point located in the hole in the paxolin coil mounting strip, and the rubber bush bearing on the core. The core may now be rotated by turning the tool.
11. Repeat operations 7 and 8.



LONG WAVES.

Switch receiver to L.W., volume and tone controls as for M.W.

1. Set receiver (by scale) and oscillator to 1,100 metres (272.7 kc.).
2. Adjust TC6 for maximum output.
3. Set receiver (by scale) and oscillator to 1,900 metres (158 kc.).
4. Adjust LI0 for maximum.
5. Repeat operations 1, 2, 3 and 4.
6. Repeat operations 1 and 2.
7. Adjust TCI for maximum output (1,100 metres).
8. Set receiver (by scale) and oscillator to 1,900 metres.
9. Adjust hexagonal-headed screw core of L7 for maximum.
10. Repeat operation 7 (on 1,100 metres).
11. Set oscillator and receiver (by scale) to 1,400 metres (214.3 kc.).
12. Readjust TCI for maximum.

SHORT WAVES.

Switch receiver to S.W. with volume and tone controls as before.

IMPORTANT.—For short wave ganging the oscillator output should preferably be terminated with a 100 ohm non-inductive resistance in parallel, and a 400 ohm non-inductive resistance in series with the "hot" lead.

1. Set receiver (by scale) and oscillator to 50 metres (6 megacycles).
2. Adjust loop in L8 for maximum output. This loop is adjusted through a hole in the shield. A strip of insulating material with a slot in it should be used to move the wire up or down.
3. Adjust L3 loop through hole in top of chassis for maximum output as in 2 above.

Do not alter the position of the pointer after ganging.

Do not "rock" the gang condenser whilst ganging.

CONDENSER DRIVE

Should the drive become stiff, lubricate frictional points with a light grease such as Mobil-grease No. 2 (not vaseline).

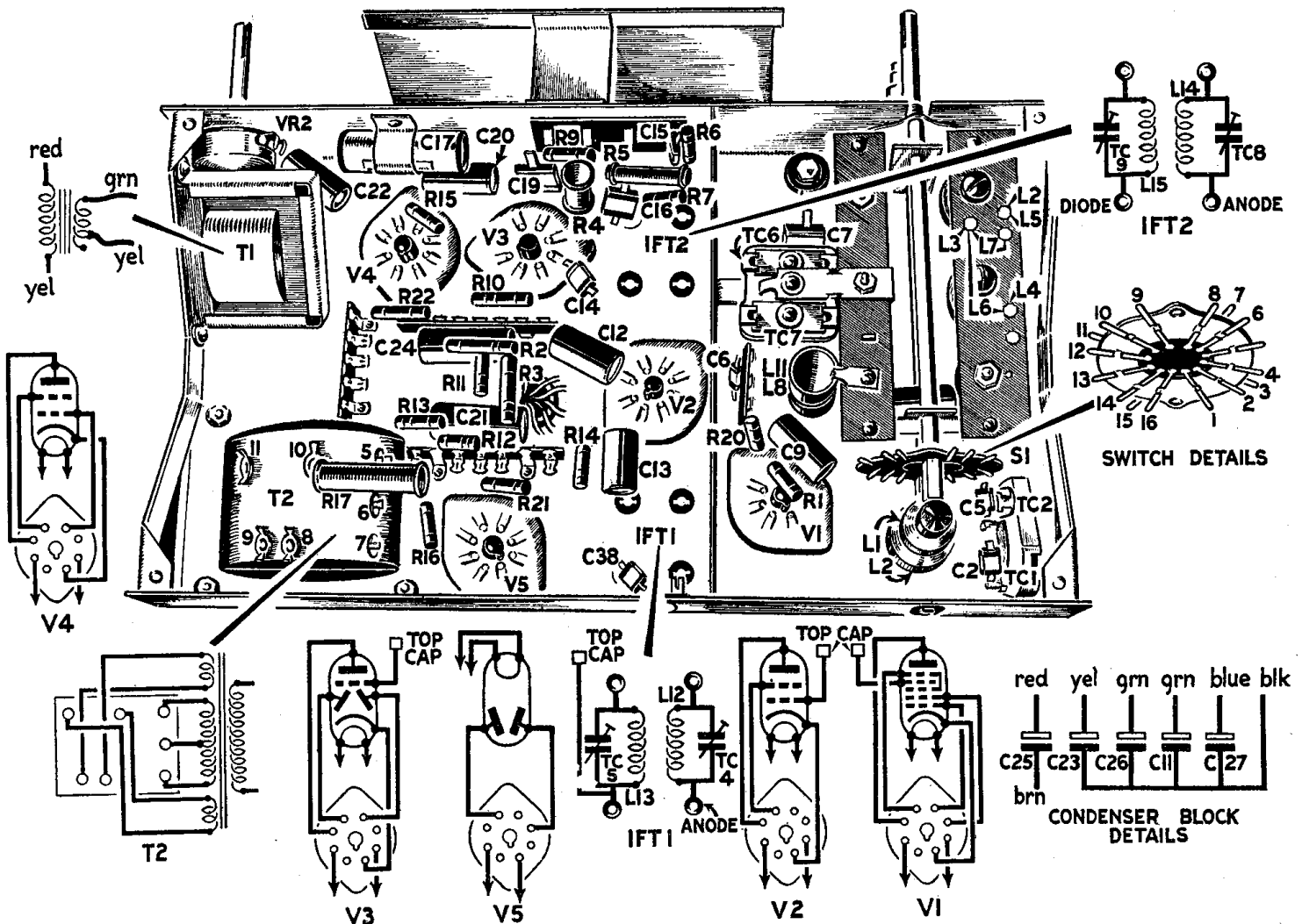
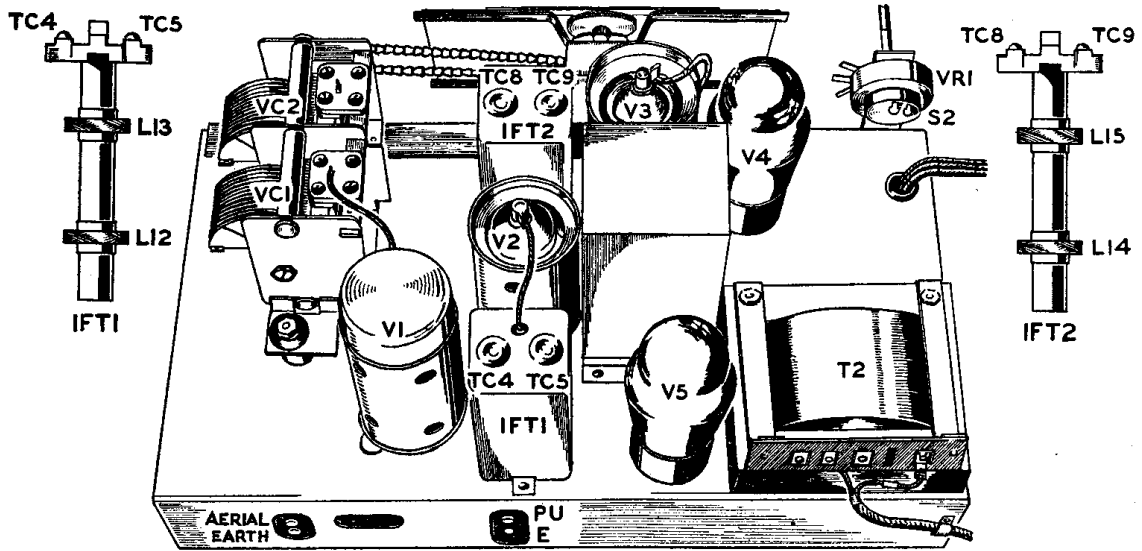
Backlash may be caused by incorrect adjustment of spring tensioned gears or the drive chain. For backlash between the tuner control and the condenser ascertain that the coil springs which tension the two half gears on the end of the condenser spindle are compressed.

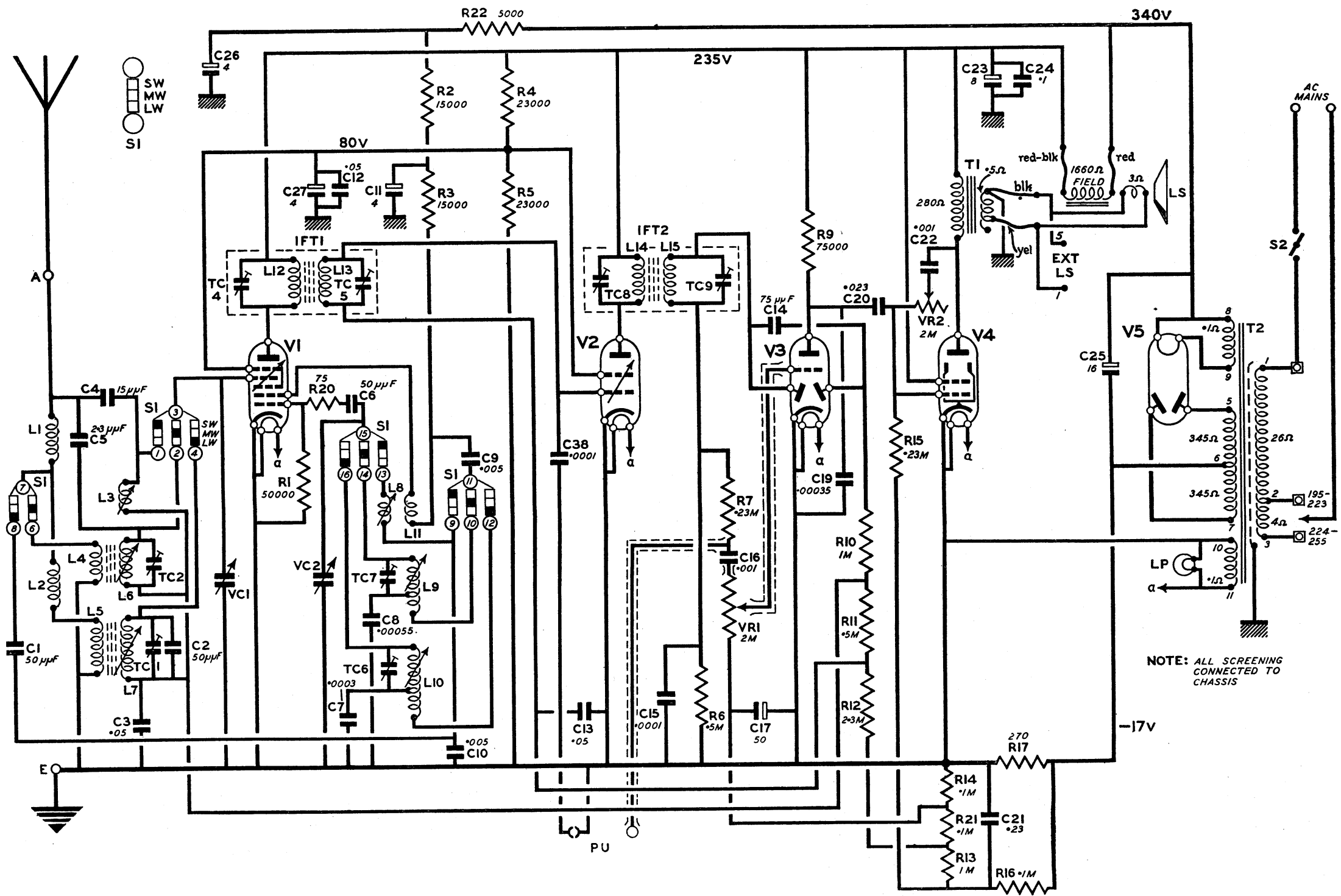
If the backlash occurs between the tuner control and the pointer the fault may be that the chain drive is slack. This drive has a screw connector. **This connection is not intended as an adjustment but must be screwed right home.**

The only remaining adjustment that may be required in the event of the scale and drive being dismantled is the spring loaded double gear which drives the vernier dial. Reassemble as follows:—

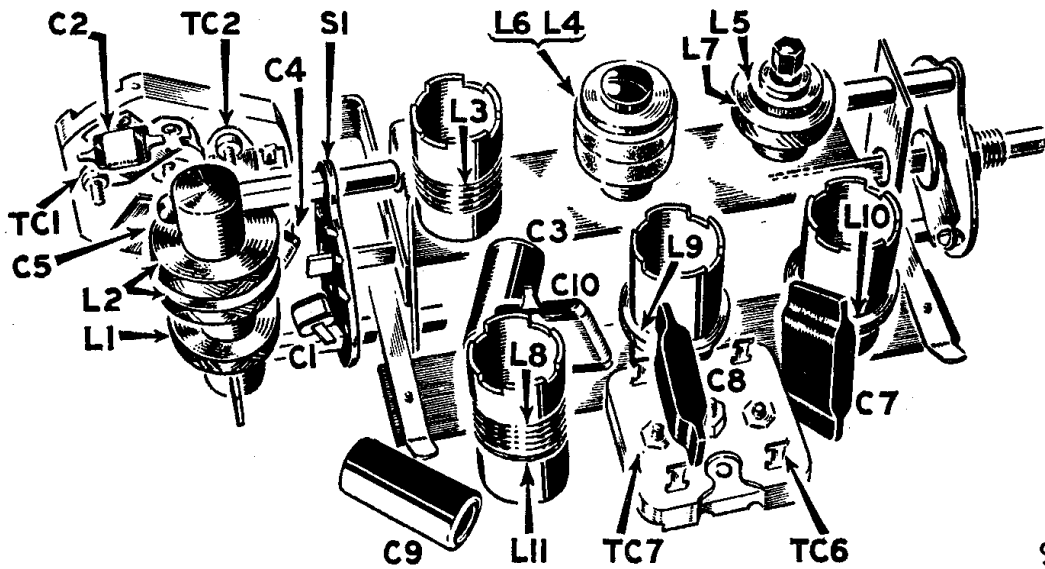
1. Re-assemble the spring gear with spring and cover making sure that the end of the spring is locating in the cut in the gear boss. Do not yet tighten the fixing nut.
2. Turn the condenser vanes to minimum, and being sure that the gear on the vernier disc is engaging with both the large gear wheels, turn the spring casing about two complete turns anti-clockwise and tighten the nut to fix it.
3. Re-assemble scale and pointer in accordance with the directions given on page 6.

It is most important that after any adjustment of the condenser drive the scale and pointer should be checked against the direction given on page 6 ("IMPORTANT NOTE").



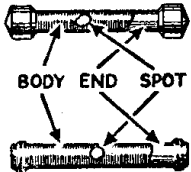


NOTE: ALL SCREENING
CONNECTED TO
CHASSIS



RESISTANCE COLOUR CODE

BODY AND END		SPOT Colours.	
Colours.		(Additional 0's.)	
(1st and 2nd figures.)			
0	Black.	.0	Black.
1	Brown.	0.	Brown.
2	Red.	00.	Red.
3	Orange.	000.	Orange.
4	Yellow.	0,000.	Yellow.
5	Green.	00,000.	Green.
6	Blue.		
7	Violet.		
8	Grey.		
9	White.		



WIRE COLOUR CODE

H.T. positive (+)	...	Red.
Anodes of valves when not direct to H.T. +	...	Red/Yellow.
Screening grids when not direct to H.T. +	...	Red/Black.
Grid circuits	...	Green.
Mains...	...	Red/Brown.
Heaters, filaments and cathodes	...	Brown.
Earth	...	Black.
General purpose colour	...	Yellow.

Yellow will be used for leads not falling in the general code, and when stocks of any colour are temporarily exhausted in the factory.

VALVE TABLE

(Voltage, Current and Resistance Tests.)

Values \pm 20 per cent.

Voltage and current readings taken on 225 volt mains with receiver switched to M.W., and aerial disconnected. Resistance readings (in ohms) taken with receiver disconnected from mains and valves and pilot lamp removed. S = short circuit. ∞ = open circuit. Socket numbers (see diagram below) are given in brackets.

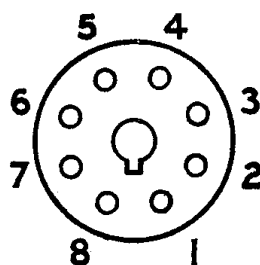
Valves	V1 (X63)	V2 (KTW63)	V3 (DH63)	V4 (KT63)	V5 (U50)
	Mxr.	Osc.			
Anode—					
Volts to chassis	235	170	235	130	225
Current (mA)	2.0	4.0	5.0	1.0	36.0
Resistance to chassis	(3) 46,000	(6) 82,660	(3) 46,000	(3) 121,000	(3) 46,280
					340 A.C. — (4) 615 (6) 615
Screen—					
Volts to chassis... ..	80	80	—	235	—
Current (mA)	2.5	1.0	—	6.0	—
Resistance to chassis	(4) 23,000	(4) 23,000	—	(4) 46,000	—
Cathode—Resistance to chassis	(8) S	(8) S	(8) S	(8) S	—
Bias—Voltage	2.6*	2.6*	1.3*	15.6*	—
Heater—					
Volts across sockets	6.3	6.3	6.3	6.3	5.0
Current (amps)	0.3	0.3	0.3	0.7	2.0
Resistance to chassis	(2) 0.1 (7) S	0.1 S	0.1 S	0.1 S	(2) 47,660 (8) 47,660
	(1) S (5) 50,000	(1) S (5) S (6) ∞	(1) S (4) 0.5 megohm (5) 4 megohms (6) ∞	(1) S (5) 0.33 megohm (6) 0.1 megohm	(1) ∞ (3) 270 ohms (5) ∞ (7) ∞
Other socket to chassis resistances	(Cap) 3 megohms	(Cap) 2.47 megohms	Cap 0.1 megohm to 2.1 megohms		

Voltage across field (measured across tags of L.S. panel) = 105 volts.

Total H.T. feed (measured at tag 6, T2)—65 mA.

Feed in screen potentiometer (R4, R5)—4.0 mA.

* Owing to high resistance in the bias potentiometer circuit these values cannot satisfactorily be measured with a voltmeter. A value of approximately 10 volts will be obtained between junction R13, R16 and chassis.



**VALVE SOCKET
SEEN FROM TOP**

SPARE PARTS LIST

MODEL 857

Part No.	Description	Parts per Inst.	Finish	Retail List Price	Per
				£ s. d.	
	Instructions.				
20386	Warning and valve position label	1	—	0 0 6	Doz.
20385	Instruction card	1	—	0 0 6	Each.
22291	Short wave guide	1	—	0 0 6	"
26111	Voltage adjustment label	1	—	0 0 1½	"
CABINET PARTS AND FITTINGS					
84657B	Cabinet	1	Pol	3 9 6	Each.
8195	Rubber foot	4	—	0 0 8	Doz.
—	Baffle board, with insert studs	1	Std	0 3 3	Each.
20296	Insert stud	3	ParB	0 0 1	"
9553	Screw, securing baffle board... ..	6	—	0 0 2	Doz.
20295	Wire mesh	1	AnBr	0 2 3	Each.
19273	Pin, securing mesh to baffle	4	—	0 0 1	Doz.
—	Felt for wire mesh, ½ in., S1429, 225/82316	—	—	0 0 9	Sq. ft.
—	Felt for wire mesh, ¼ in., S1459, 225/84316	—	—	0 1 0	"
24873	Bracket for cabinet back	2	CdP	0 0 1	Each.
8602	Screw, securing brackets	4	—	0 0 2	Doz.
20294B	Cabinet back, with two straps	1	—	0 2 3	Each.
20218	Hinge strap	2	—	0 0 1½	"
18882	Rivet, securing straps to back	2	—	0 0 1	Doz.
9545	Screw } securing straps to cabinet	2	WN	0 0 3	"
21883	Washer }	2	WN	0 0 9	"
19896	Screw } securing cabinet back to brackets	2	ParB	0 0 1	Each.
18985	Washer }	2	ParB	0 0 4	Doz.
20535	Tuning escutcheon	1	—	0 1 0	Each.
9545	Screw, securing tuning escutcheon	4	BzP	0 0 3	Doz.
20536	Rubber strip (long)	2	—	0 0 6	"
20537	Rubber strip (short)	2	—	0 0 3	"
20538	Window	1	—	0 0 1½	Each.
26107	Clamp } securing window to escutcheon	2	OB	0 0 4½	Doz.
14791	Screw }	2	WN	0 0 4	"
16578	Cleat, for loudspeaker lead	1	—	0 0 6	"
8692	Screw, securing cleat	1	WN	0 0 2	"
16289J	Aerial plug, yellow	1	—	0 0 2	Each.
16289B	Earth plug, black	1	—	0 0 2	"
18889A	Carton, for mains lead and plugs	1	—	0 0 1	"
LOUDSPEAKER					
20277B	Loudspeaker	1	—	0 19 3	Each
20277C	Cone chassis, complete with speech coil and cone	1	—	0 4 6	"
10173C	Spring washer } securing spider of cone to studs	2	—	0 0 2	Doz.
1092	Washer }	2	—	0 0 2	"
21233A	Split pin }	2	WN	0 0 1	"
12568A	Panel with two tags	1	—	0 0 4	Each.
11806	Tag	2	—	0 0 7	Doz.
16352	Rivet securing panel	2	—	0 0 1	"
11543S	Field coil (CKI)	1	—	0 5 0	Each.
20285A	Hum coil	1	—	0 0 6	"
21966B	Terminal panel with eight tags	1	—	0 1 0	"
12947	Washer (felt)	1	—	0 0 2	"
21456	Washer (presspahn)	3	—	0 0 4	Doz.
20286	Top plate	1	CdP	0 0 9	Each.
20481	Stud, securing top plate	4	WN	0 0 1	"
11627	Nut, securing cone chassis to studs... ..	4	—	0 0 6	Doz.
20287	Felt strip	3	—	0 0 1	Each.
26515A	Stop	1	BMEen	0 0 1	"
20289	Sleeve } securing stop to magnet core	1	AcD	0 0 6	Doz.
11263	Screw }	1	HdCB	0 0 6	"
1021	Washer } securing speaker to insert studs in baffle board	3	WN	0 0 3	"
11627	Nut }	3	WN	0 0 6	"

Part No.	Description	Parts per Inst.	Finish	Retail List Price	Per
				£ s. d.	
CONTROLS					
20273C	Knob, " Volume " and on/off	1	ChF	0 0 6	Each.
17054AE	Knob, " Tone "	1	ChF	0 0 7	"
17054AK	Knob, " LW, MW, SW "	1	ChF	0 0 7	"
11805	Screw, PK, securing knobs	3	—	0 0 6	Doz.
20273B	Knob, " Tuner "	1	ChF	0 0 6	Each.
11773	Grub screw securing tuner knob	1	WN	0 0 5	Doz.
RADIO UNIT					
20300B	Radio unit	1	—	7 15 0	Each.
17139	Screw	4	WN	0 0 1	"
10173C	Spring washer	4	—	0 0 2	Doz.
14748	Washer	4	WN	0 0 2	"
4378	Washer (large)	4	WN	0 0 3	"
H.F. UNIT					
20650C	H.F. Unit	1	—	1 16 6	Each.
20670A	L1 and L2 aerial coils	1	—	0 1 9	"
20671A	Panel with three tags	1	—	0 0 3	"
10400	Tag	3	—	0 0 1	Doz.
10710	Screw	2	WN	0 0 2	"
3166	Washer SP	2	—	0 0 2	"
20660B	Grid coils panel assembly	1	—	0 8 6	Each.
20657H	L3—SW grid coil	1	—	0 1 0	"
20652	Clip	1	—	0 0 6	Doz.
20653	Bush	1	—	0 0 6	"
20654	Nut	1	—	0 0 2	"
20666B	L4 and L6—MW coupling and grid coils	1	—	0 1 0	Each.
20662	Coil stem	1	—	0 0 6	"
20664	Screw, securing coil stem to panel	1	—	0 0 6	Doz.
20672	Core	2	—	0 1 3	Each.
20667	Insulating washer (between the two cores)	1	—	0 0 2	Doz.
20659	Felt washer	1	—	0 0 4 ¹ / ₂	"
20668	Insulating washer	1	—	0 0 1	"
20669	Screw	1	—	0 0 1	Each.
20661A	L5 and L7—LW coupling and grid coils	1	—	0 1 6	"
20729	Coil stem	1	—	0 0 2	"
20727	Spacer	1	—	0 0 1	"
20728	Screw	1	—	0 0 2	"
20542	Core screw for L5 and L7	1	—	0 0 6	"
20660A	Panel (for grid coils) with six tags	1	—	0 0 3	"
10400	Tag	6	—	0 0 1	Doz.
20650B	Oscillator coils panel assembly	1	—	0 4 9	Each.
20657F	L8 and L11—SW oscillator and reaction coil with mounting bracket	1	—	0 1 6	"
11228	Screw	1	WN	0 0 4	Doz.
3165	Washer, SP	1	—	0 0 2	"
20657C	L9—MW oscillator coil	1	—	0 1 0	Each.
20673	Bracket for TC6 and TC7	1	—	0 0 1	"
20652	Clip	1	—	0 0 6	Doz.
20653	Bush	1	—	0 0 6	"
20654	Nut	1	—	0 0 3	"
20655A	Adjusting screw and disc for L9	1	—	0 0 1	Each.
20657B	L10—LW oscillator coil	1	—	0 1 0	"
20652	Clip	1	—	0 0 6	Doz.
20653	Bush	1	—	0 0 6	"
20654	Nut	1	—	0 0 3	"
20655A	Adjusting screw and disc, for L10	1	—	0 0 1	Each.
20650A	Panel (for oscillator coils)	1	—	0 0 4 ¹ / ₂	"
8777	Screw, PK, securing panels to switch	4	—	0 0 6	Doz.
20288A	S1—Wave range switch, with nut	1	—	0 5 9	Each.
23922Q	TC1 and TC2—Twin pre-set condensers	1	—	0 1 6	"
24027	Adjusting screw	2	—	0 0 3	Doz.

SPARE PARTS LIST—continued.

MODEL 857

Part No.	Description	Parts per Inst.	Finish	Retail List Price			Per
				£	s.	d.	
H.F. UNIT—continued.							
19050	Screw	1	WN	0	0	3	Doz.
3166	Washer	1	—	0	0	2	„
26350AL	TC6 and TC7—Twin pre-set condenser	1	—	0	1	6	Each.
25067	Adjusting screw	2	AcD	0	0	6	Doz.
1485	Washer	2	—	0	0	2	„
10710	Screw	1	WN	0	0	2	„
3166	Washer, SP	1	—	0	0	2	„
11628	Nut	1	WN	0	0	4	„
22164J	C1—50 mmfd. condenser	1	—	0	0	9	Each.
22164J	C2—50 mmfd. condenser	1	—	0	0	9	„
24900W	C3—05 mfd. condenser	1	—	0	1	3	„
22164D	C4—15 mmfd. condenser	1	—	0	0	9	„
22164H	C5—2.3 mmfd. condenser	1	—	0	0	9	„
22330BY	C7—0003 mfd. condenser	1	—	0	2	6	„
22330CS	C8—00055 mfd. condenser...	1	—	0	2	6	„
24900J	C9—005 mfd. condenser	1	—	0	1	0	„
22005A	C10—005 mfd. condenser	1	—	0	1	6	„
1061	Washer	1	WN	0	0	3	Doz.
5673	Washer, SP	1	—	0	0	4	„
8777	Screw, PK	2	—	0	0	6	„
20305A	Screen, for H.F. unit	1	CdP	0	0	9	Each
8777	Screw, PK, securing screen	3	—	0	0	6	Doz.
26330AR	1st I.F. transformer (with lead and valve top clip)	1	—	0	6	9	Each.
26330AQ	2nd I.F. transformer	1	—	0	6	9	„
12619	Screw, PK, securing I.F. transformers	4	—	0	0	6	Doz.
22624S	T1—Output transformer	1	—	0	6	6	Each.
11220	Screw	2	WN	0	0	2	Doz.
3166	Washer, SP	2	—	0	0	2	„
11628	Nut	2	WN	0	0	4	„
26120D	T2—Mains transformer	1	—	0	15	6	Each.
26124B	Terminal panel with 3 screws and tags	1	—	0	0	4	„
14512	Tag	3	—	0	0	5	Doz.
14511	Nut	3	—	0	0	4	„
11228	Terminal screw	3	WN	0	0	4	„
12619	Screw, PK, securing terminal panel	2	—	0	0	6	„
20284	Stiffener strip	1	CdP	0	0	2	Each.
11627	Nut	4	WN	0	0	6	Doz.
3167	Washer, SP	4	—	0	0	2	„
—	CK1—Field coil (see Loudspeaker)	—	—	—	—	—	„
RESISTANCES							
24150J	R1—50,000 ohms	1	—	0	0	9	Each.
17140AG	R2—15,000 ohms	1	—	0	0	9	„
17140AG	R3—15,000 ohms	1	—	0	0	9	„
19105AY	R4—23,000 ohms	1	—	0	2	0	„
19104P	R5—23,000 ohms	1	—	0	1	0	„
24150N	R6—500,000 ohms	1	—	0	0	9	„
24150M	R7—230,000 ohms	1	—	0	0	9	„
24150K	R9—75,000 ohms	1	—	0	0	9	„
24150P	R10—1 megohm	1	—	0	0	9	„
24150N	R11—5 megohm	1	—	0	0	9	„
24150AM	R12—2.3 megohm	1	—	0	0	9	„
24150P	R13—1 megohm	1	—	0	0	9	„
24150L	R14—100,000 ohms	1	—	0	0	9	„
24150M	R15—230,000 ohms	1	—	0	0	9	„
24150L	R16—100,000 ohms	1	—	0	0	9	„
10451BH	R17—270 ohms, S.L.	1	—	0	1	0	„
24150Y	R20—75 ohms	1	—	0	0	9	„
24150L	R21—100,000 ohms	1	—	0	0	9	„
19202E	R22—5,000 ohms	1	—	0	0	9	„
18300DC	VR1 and S2—Volume control and mains On/Off switch with nut	1	—	0	5	0	„
20301	Bracket, for VR1	1	CdP	0	0	1	„
12619	Screw, PK securing bracket	2	—	0	0	6	Doz.
15159	Tag	1	—	0	0	3	„
18300DD	VR2—Tone control with nut	1	—	0	3	6	Each.
1061	Washer	2	WN	0	0	3	„
5673	Washer, SP	2	—	0	0	4	„

Part No.	Description	Parts per Inst.	Finish	Retail List Price	Per
CONDENSERS					
—	C1—C5—See H.F. unit			£ s. d.	
22164	C6—50 mmfd.	1	—	0 0 9	Each.
—	C7—C10—see H.F. unit				
20276A	C11—4 mfd. electrolytic (with C23, C25, C26 and C27)	1	—	0 12 6	„
12619	Screw, PK, securing elec. condenser block	4	—	0 0 6	Doz.
24900W	C12—.05 mfd.	1	—	0 1 3	Each.
24900W	C13—.05 mfd.	1	—	0 1 3	„
22164K	C14—75 mmfd.	1	—	0 0 9	„
22164L	C15—.0001 mfd.	1	—	0 0 9	„
26300A	C16—.001 mfd.	1	—	0 1 0	„
17250F	C17—50 mfd. electrolytic	1	—	0 2 6	„
19810	Clip	1	WN	0 0 8	Doz.
12619	Screw, PK } securing C17	1	—	0 0 6	„
22001AE	C19—.00035 mfd.	1	—	0 0 9	Each.
26300S	C20—.023 mfd.	1	—	0 1 0	„
24900AE	C21—.23 mfd.	1	—	0 1 9	„
26300A	C22—.001 mfd.	1	—	0 1 0	„
—	C23—8 mfd. electrolytic (with C11)				
24900AA	C24—.1 mfd.	1	—	0 1 4	„
—	C25—16 mfd. electrolytic (with C11)				
—	C26—4 mfd. electrolytic (with C11)				
—	C27—4 mfd. electrolytic (with C11)				
22164L	C38—.0001 mfd.	1	—	0 0 9	„
—	TC1 and TC2—see H.F. unit				
—	TC4 and TC5—part of 1st I.F.T.				
—	TC6 and TC7—see H.F. unit				
—	TC8 and TC9—part of 2nd I.F.T.				
20280B	VCI and VC2—Two gang condenser	1	—	0 11 9	„
20327	Bracket	1	AISp	0 0 1	„
10606	Screw, PK, securing bracket to rear of condenser	2	—	0 0 7	Doz.
20329	Front bracket	1	AISp	0 0 3	Each.
11219	Screw	2	WN	0 0 3	Doz.
3166	Washer, SP } securing front bracket to condenser	2	—	0 0 2	„
8777	Screw, PK, securing front bracket to angle strip	2	—	0 0 6	„
21236	Rubber bush	3	—	0 0 1	Each.
6305	Washer	3	WN	0 0 1	Doz.
3167	Washer, SP } securing condenser gang and angle strip	3	—	0 0 2	„
11627	Nut	3	WN	0 0 6	„
20310B	Angle strip with scale support and rubber strips	1	CMEn local	0 2 0	Each
20315	Rubber strip (long)	2	—	0 0 4½	Doz.
20316	Rubber strip (short)	2	—	0 0 2	„
CONDENSER DRIVE AND TUNING DETAILS					
20325A	Condenser drive mechanism	1	—	0 2 6	Each.
20325	Spindle	1	—	0 0 9	„
20326A	Sleeve and pinion	1	CP Bz Sp Local	0 1 0	„
24053B	Flange and barrel	1	—	0 0 4	„
5183	Circlip (holding sleeve in barrel)	1	WN	0 0 2	Doz.
3522	Ball	3	—	0 0 1	„
3540	Ball (small)	7	—	0 0 1	„
24057	Washer	1	CP	0 0 1	„
24055	Spring	1	—	0 0 1	Each.
8777	Screw, PK, securing drive mechanism to front bracket	2	—	0 0 6	Doz.
20331A	Spring gear assembly	1	—	0 0 9	Each.
24045	Spring	2	—	0 0 1	„
13387	Set screw, securing spring gear assembly to spindle of condenser	2	WN	0 0 3	Doz.
26138E	Chain	1	—	0 0 6	Each.
20326A	Chain connector	1	—	0 0 3	„
20336	Connector body	1	—	0 0 1	„
20337	Link	1	—	0 0 1	„
20338	Link } threaded, with hook for chain with hole for split pin	1	—	0 0 1	„

SPARE PARTS LIST—continued.

MODEL 857

Part No.	Description	Parts per Inst.	Finish	Retail List Price	Per
CONDENSER DRIVE AND TUNING DETAILS—continued.					
21233A	Split pin	1	WN	£ s. d. 0 0 1	Doz.
20319A	Bush and sprocket	1	WN	0 0 4	Each.
11805	Screw, PK, securing bush to spindle	1	WN	0 0 6	Doz.
20318A	Spindle and gear	1	—	0 0 9	Each.
20290B	Vernier dial and pinion (printed)	1	—	0 0 4½	"
22244D	Spring gear and pinion assembly	1	—	0 2 0	"
4396	Washer } securing spring gear and pinion assembly	1	WN	0 0 2	Doz.
11629	Nut }	1	WN	0 0 6	"
20292A	Tuning pointer	1	MG Sp	0 0 6	Each.
13893	Screw, securing pointer	1	WN	0 0 8	Doz.
20274A	Tuning scale (printed)	1	—	0 2 6	Each.
20321	Clamp } securing tuning scale	1	CM En	0 0 1	"
8777	Screw, PK }	2	—	0 0 6	Doz.
20307	Lamp bracket	1	WN	0 0 6	"
12619	Screw, PK, securing lamp bracket	1	—	0 0 6	"
27730A	Lamp holder	1	—	0 0 3	Each.
27735A	Washer and eyelet (for lead to lamp)	1	—	0 0 1	"
27734	Spring	1	—	0 0 1	"
22704L	Lamp	1	—	0 0 9	"
SWITCHES					
—	S1—Wave range switch—see H.F. unit				
—	S2—Mains on/off switch—see VRI				
VALVE HOLDERS, SCREENS, PANELS, LEADS, ETC.					
26005A	Valve holder	5	—	0 0 6	Each.
24981	Valve screen base	3	CdP	0 0 1½	"
16353	Rivet, securing valve holder and valve screen base	10	—	0 0 1	Doz.
24982B	Valve screen	3	—	0 0 6	Each.
26112	Valve screen top	3	—	0 0 2	"
20314A	A. and E. panel with two sockets	1	—	0 0 2	"
20344A	P.U. panel, with sockets	1	—	0 0 3	"
16352	Rivet, securing panels	4	—	0 0 1	Doz.
22677D	Resistance panel, with eight tags	1	—	0 0 6	Each.
10439	Tag	1	—	0 0 2	Doz.
26139	Insulating panel	1	—	0 0 6	"
8777	Screw, PK, securing panels	2	—	0 0 6	"
24020A	Tag panel, with three tags	1	—	0 0 2	Each.
24017A	Tag panel, with five tags	1	—	0 0 3	"
25174B	Tag panel, with seven tags	1	—	0 0 3	"
12619	Screw, PK, securing tag panels	—	—	0 0 6	Doz.
20334A	Small bracket with insulated tag (anchoring R7)	1	—	0 0 2	Each.
12619	Screw, PK, securing bracket	1	—	0 0 6	Doz.
20322A	Loudspeaker lead	1	—	0 1 0	Each.
20852C	Mains lead, with one tag	1	—	0 1 3	"
11802	Tag	1	—	0 0 3	Doz.
4681	Cleat, for mains lead	1	WN	0 0 1	Each.
10606	Screw, securing cleat	1	—	0 0 7	Doz.
16755	Insulating bush	2	—	0 0 1	Each.
16757	Insulating bush, larger	3	—	0 0 1	"

“ FINISH ” CODE

AcD	Acid Dip.	CP	Copper Plate.
AlSp	Aluminium Spray.	CdP	Cadmium Plate.
AnBr	Antique Brass.	CMEn local	Cream Matt Enamel local.
BMen... ..	Black Matt Enamel.	MGSp	Matt Gold Spray.
BzP	Bronze Polish.	OB	Oil Black.
BzSp	Bronze Spray.	ParB	Parkerised Black.
CB	Camera Black.	Pol	Polished.
ChF	Chrome Filled.	Std	Standard.
ChP	Chromium Plate.	WN	White Nickel.

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

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