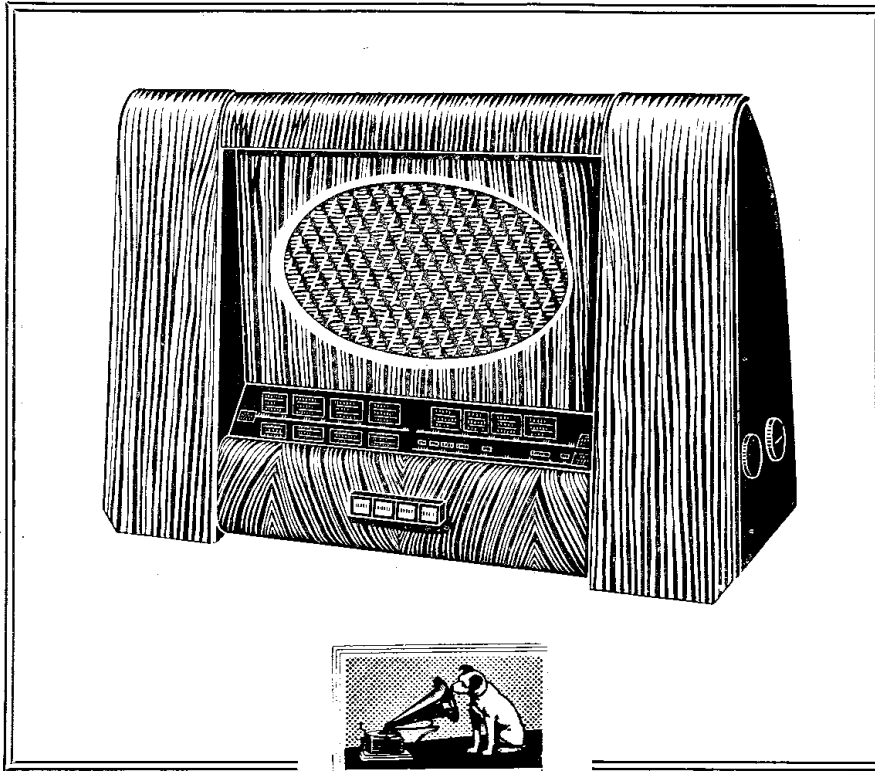


# “His Master’s Voice”



*The Hallmark of Quality*

## SERVICE MANUAL

Model 1123

5-valve Push-Button Superhet  
for A.C. Mains

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# MODEL 1123

## SPECIFICATION

### Physical.

Height	..	..	..	..	14 $\frac{1}{2}$ inches	} Approx. Overall.
Depth	..	..	..	..	9 $\frac{3}{4}$ inches	
Width	..	..	..	..	21 $\frac{1}{2}$ inches	
Weight	..	..	..	..	22 lbs.	

### Mains Supply.

195—255 volts, 50—100 cycles.

### Consumption.

40 watts.

### Wave Ranges.

S.W.	..	..	..	16.3—51.7 metres.
M.W.	..	..	..	187—575 metres.
L.W.	..	..	..	900—2,000 metres.

### Push-Button Ranges.

Button 1	..	..	..	1,175—2,000 metres.
Button 2	..	..	..	330—510 metres.
Button 3	..	..	..	273—400 metres.
Button 4	..	..	..	187—300 metres.

The buttons are numbered from left to right looking at front of cabinet.

### Intermediate Frequency.

470 kc. s.

### Rated Output.

4 watts maximum.

### Valves.

V1	X78	Frequency Changer.
V2	W77	I.F. Amplifier.
V3	DH77	Detector, A.G.C. and A.F. Amplifier.
V4	N78	Output.
V5	U78	Rectifier.

### Lamps and Fuses.

Two Lamps—6.8 volts, 0.3 amp.

Two Fuses—1.0 amp., Cartridge type.

### Loudspeaker.

The loudspeaker is a dust-proof, 10 $\frac{1}{2}$ -inch elliptical cone permanent magnet moving coil loudspeaker. The speech coil has a D.C. resistance of 3 ohms and an impedance of 5 ohms at 1,000 cycles.

Sockets are provided for the connection of an external loudspeaker.

### Connection of Pick-Up.

A pick-up or record player may be connected to the sockets provided. The Volume and Tone controls are operative on gramophone.

## INSTALLATION

### The Aerial and Earth.

**INTERNAL AERIAL.**—The receiver is equipped with an internal plate aerial for use on the Medium and Long wavebands; no external aerial will be needed to obtain reception from a selection of stations on these bands.

Plug the lead from the "PLATE AERIAL" socket into the "AERIAL" socket.

**EXTERNAL AERIAL.**—To receive a selection of stations on the Short waveband or in difficult reception circumstances, i.e., in areas of strong electrical interference or in a steel framed or heavily screened building, and wherever it is desired to obtain maximum sensitivity from the receiver an efficient external aerial must be fitted.

A lightning arrester or switch should be fitted and the aerial must be insulated from all grounded objects.

Plug the external aerial into the socket marked "AERIAL" and see that the lead from the "PLATE AERIAL" is plugged into the "PLATE AERIAL OFF" socket.

**EARTH.**—An efficient earth should be provided; never use a telephone earth or a hot water or gas pipe as an earth.

### Mains Supply.

The receiver may be adjusted to operate on A.C. mains supplies of 195—255 volts, 50—100 cycles.

Insert the voltage adjustment plug into the appropriate sockets.

## DISMANTLING

Complete access to the chassis can be gained by simply removing the card back.

To withdraw the chassis, remove the four control knobs

(spring fixing) unscrew the four chassis fixing bolts, remove the earth connection from the chassis and unsolder the loudspeaker leads.

## I.F. AND R.F. ALIGNMENT

### General.

If the I.F. circuits have been disturbed, complete I.F. and R.F. alignment must follow. Either S.W., M.W., or L.W. bands can be reganged without affecting the other bands.

The oscillator tracks at a higher frequency than the signal on all wavebands.

Whilst ganging, the input to the receiver must be progressively reduced as the circuits are brought into line so that the output does not exceed 500 mW (1.58 v. across the speech coil).

An A.C. voltmeter (rectifier type) connected across the loudspeaker speech coil may be used as an output meter.

### I.F. Alignment.

Set the Waveband switch to M.W., the Volume and Tone controls fully clockwise and the gang capacitor to minimum capacity (plates fully disengaged).

1. Inject a modulated signal at 470 kc/s into the grid of V1.
2. Adjust cores L19, L18, L17 and L16 in that order for maximum output.

### R.F. Alignment.

#### Short Waves.

Set Volume and Tone controls fully clockwise and Waveband switch as required. Inject test signal into aerial and earth sockets via a S.W. dummy aerial.

Waveband Switch Position.	Op. No.	Scale Setting.	Tune Signal Generator to		Operation.
			m.	Mc/s.	
S.W. . . . .	1	As Generator	50	6	Adjust L2 and L8 for maximum output. Adjust TC1 and TC4 for maximum output. Repeat operations 1 and 2.
	2	As Generator	16.8	17.8	
	3	—	—	—	

#### Medium Waves.

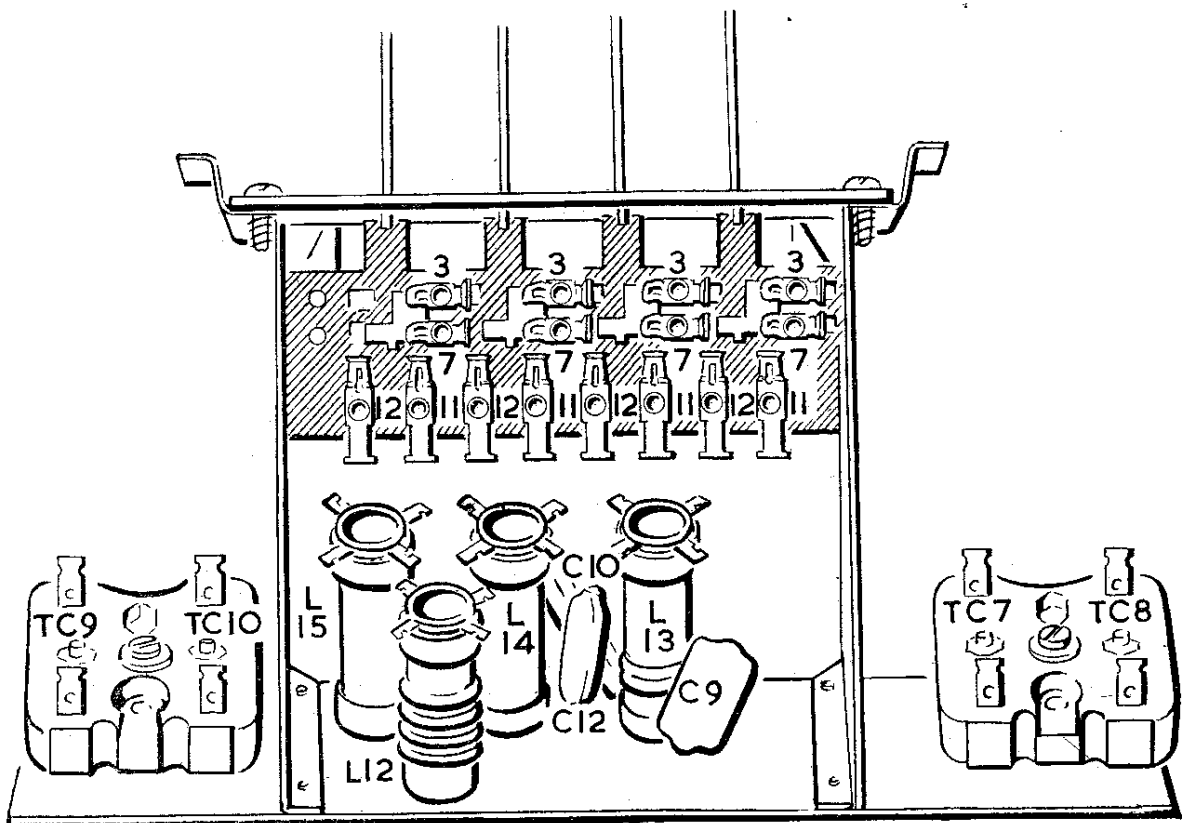
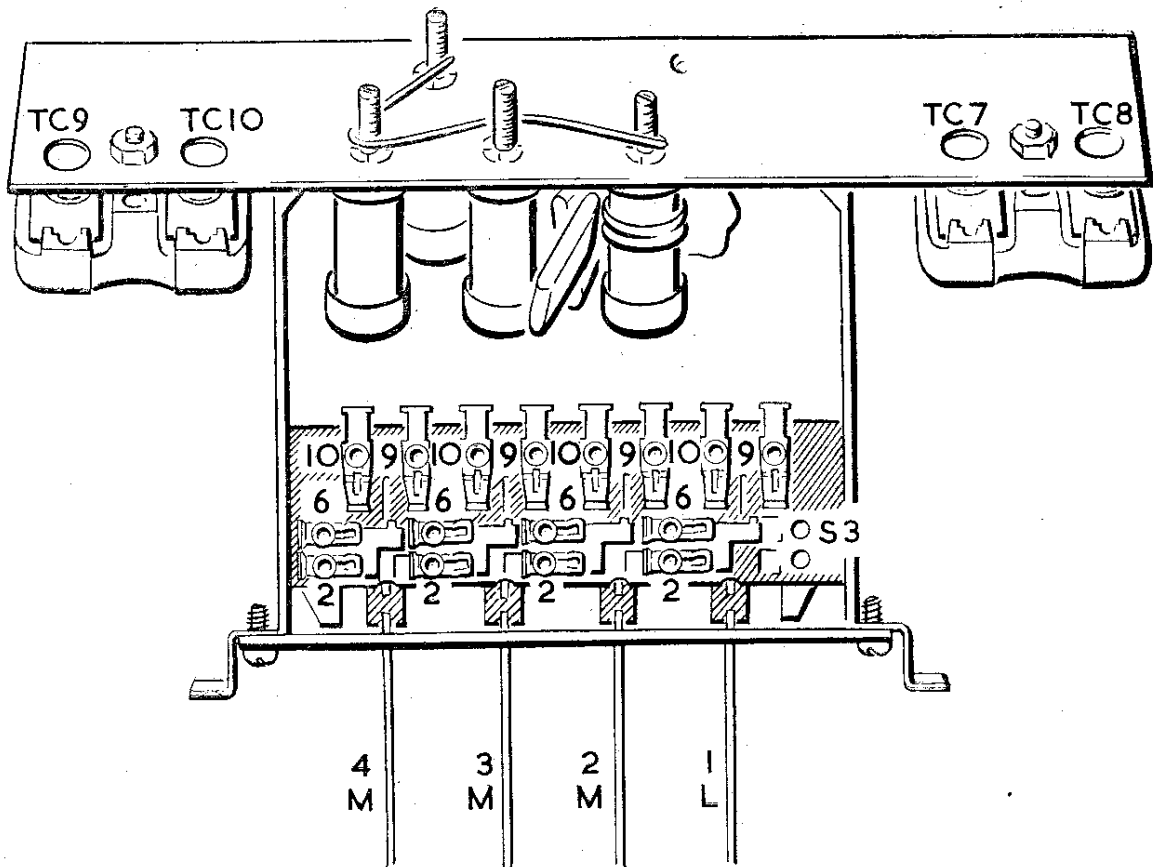
Controls as before, but with Waveband switch set to M.W. M.W. dummy aerial to be used.

Waveband Switch Position.	Op. No.	Scale Setting.	Tune Signal Generator to		Operation.
			m.	kc/s.	
M.W. . . . .	1	As Generator	510	588	Adjust L4 and L10 for maximum output. Adjust TC5 for maximum output. Adjust TC2 for maximum output. Repeat operations 1 to 3.
	2	As Generator	186.9	1,605	
	3	Rock Gang	210	1,427	
	4	—	—	—	

#### Long Waves.

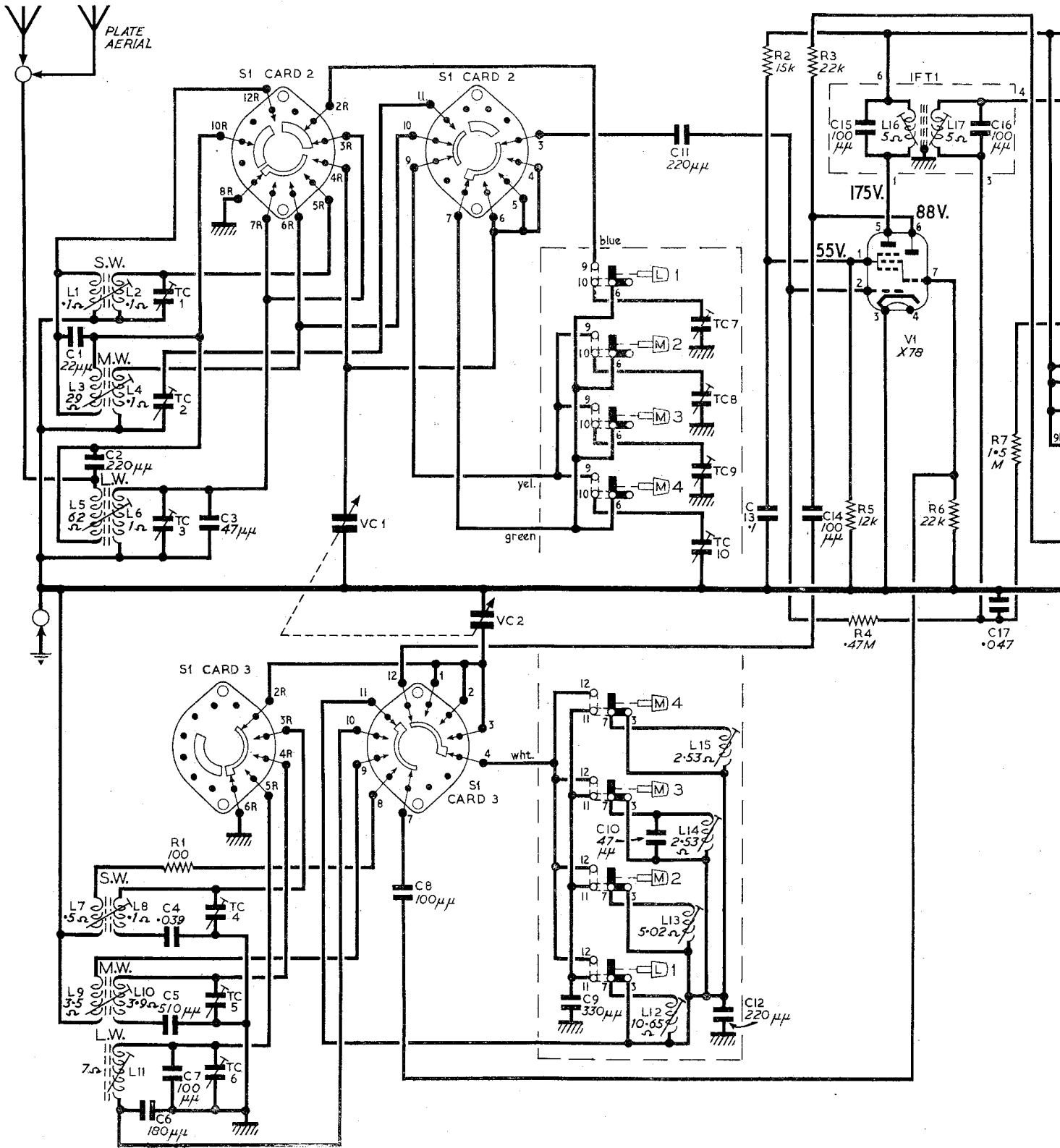
Controls as before, but with Waveband switch set to L.W. L.W. dummy aerial to be used.

Waveband Switch Position.	Op. No.	Scale Setting.	Tune Signal Generator to		Operation.
			m.	kc/s.	
L.W. . . . .	1	As Generator	1,850	162	Adjust L6 and L11 for maximum output. Adjust TC3 and TC6 for maximum output.
	2	As Generator	1,000	300	



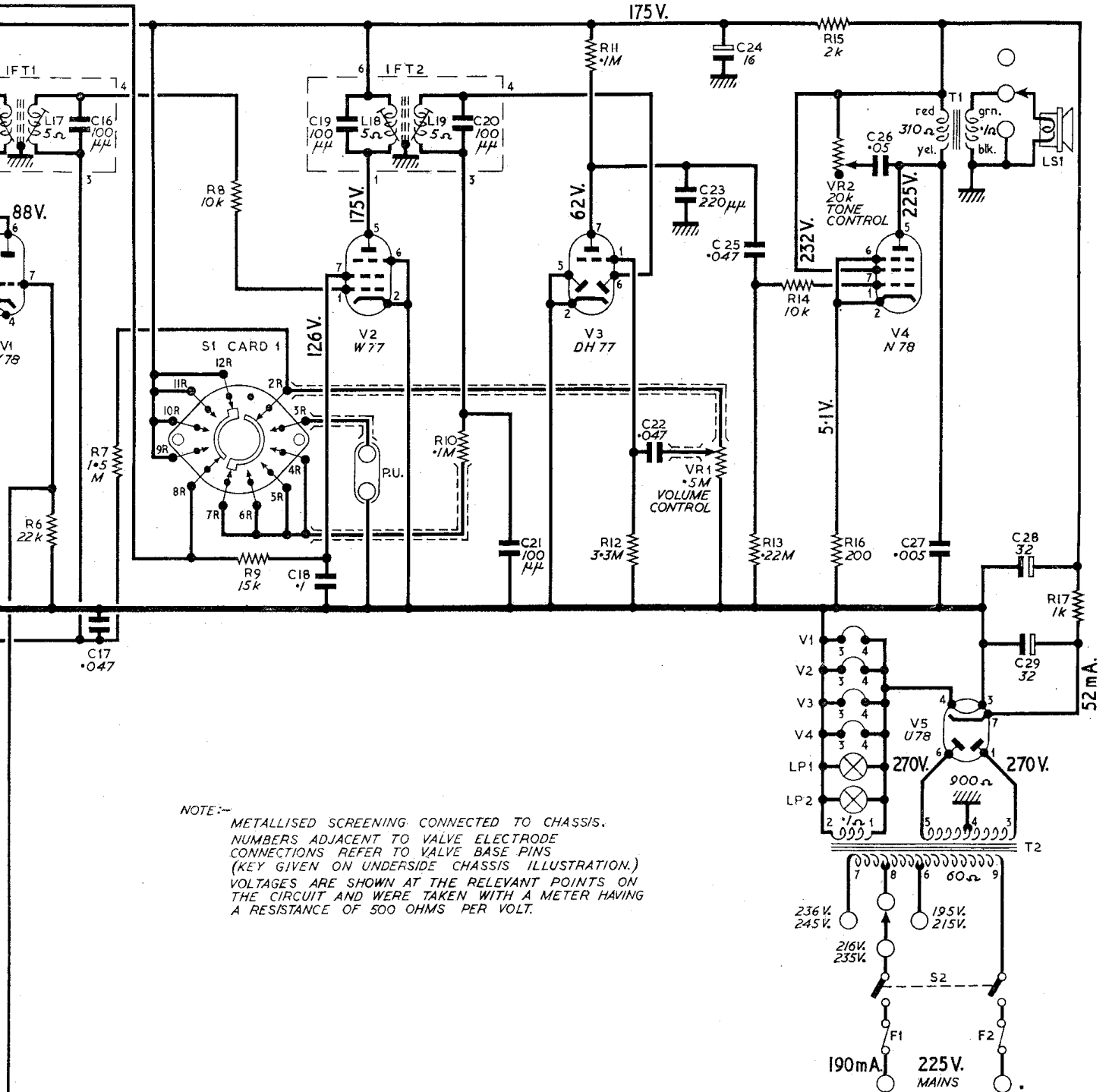
PUSH-BUTTON UNIT

C	1	2	4,5,6,7	3	8	9	10	11	13,12	14,15	16,17	
R	1											
MISC.	L1 TO L11	TC1,2,3	TC4,5,6	VC1	VC2	L12 TO L15, TC7 TO 10				L16, V1, IFT1, L17		

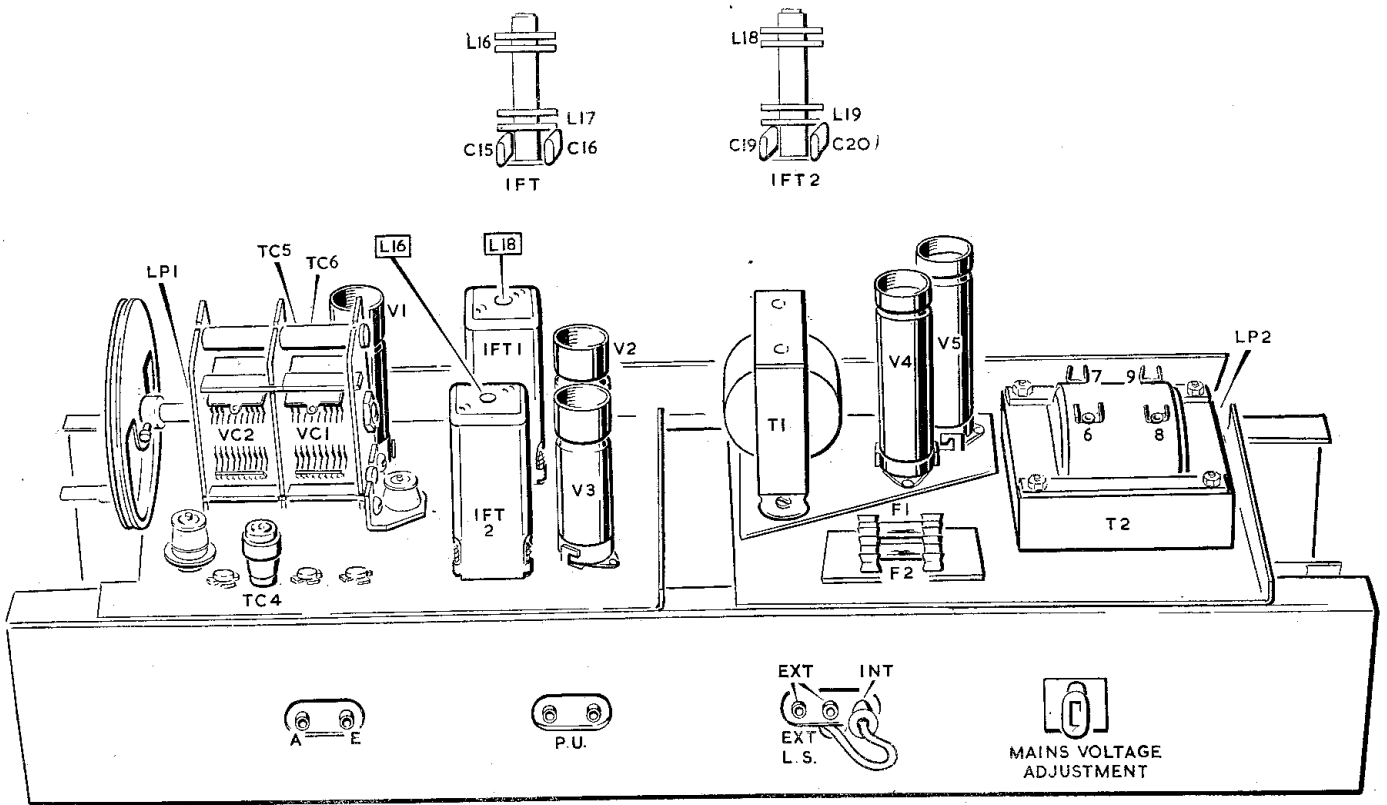


CIRCUIT FOR MODE

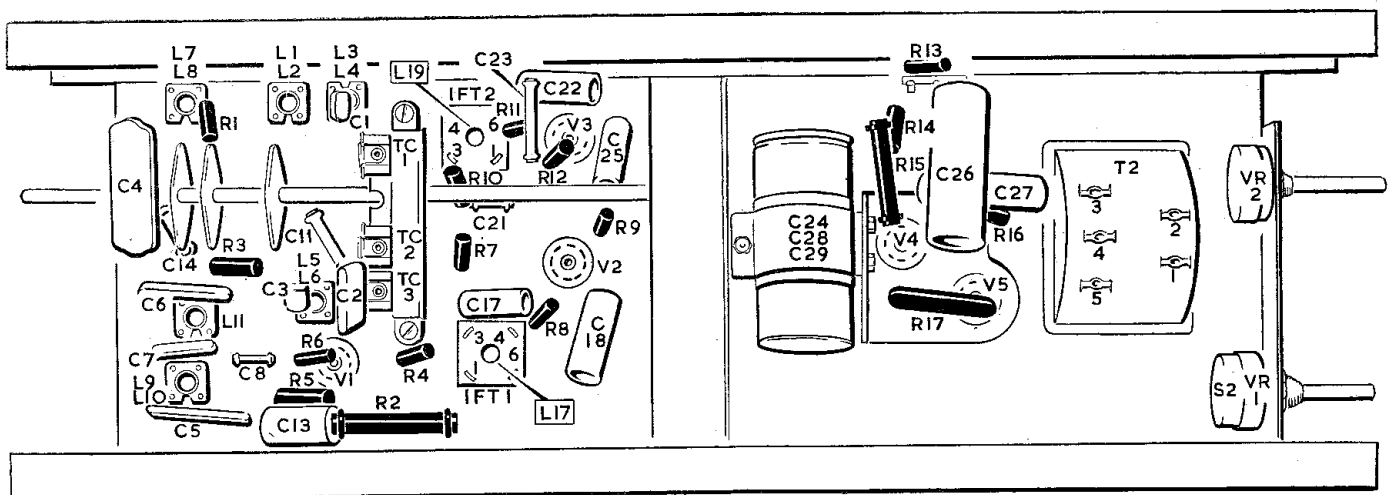
6	7	16,17	18,19	20	21	22	23,25,24	26	27	28,29	C
V1, IFT1, L17			V2, L18, P.U., IFT2, L19		V3	VR1	LP1, LP2, VR2	F1, V4, V5, S2, T1	F2	T2, LS1	MISC.



NOTE:- METALLISED SCREENING CONNECTED TO CHASSIS.  
 NUMBERS ADJACENT TO VALVE ELECTRODE CONNECTIONS REFER TO VALVE BASE PINS  
 (KEY GIVEN ON UNDERSIDE CHASSIS ILLUSTRATION.)  
 VOLTAGES ARE SHOWN AT THE RELEVANT POINTS ON THE CIRCUIT AND WERE TAKEN WITH A METER HAVING A RESISTANCE OF 500 OHMS PER VOLT.



TOP-SIDE CHASSIS VIEW.



VALVE BASE  
NUMBERS

UNDER-SIDE CHASSIS VIEW.

**Push-Button Alignment.**

1. Set Volume and Tone controls fully clockwise and Waveband switch as required.
2. Inject test signal into aerial and earth sockets via dummy aerial.
3. Tune respective Oscillator and Aerial circuits for maximum output.

When the models leave the factory the push-buttons are aligned as follows:—

P.B.	Waveband.	Station.	Frequency. kc s.	Wavelength. m.	Adjust for Maximum Output.
1	L.W. . . . .	Light . . . . .	200	1,500	L12 and TC7.
2	M.W. . . . .	Third . . . . .	647	463.4	L13 and TC8.
3	M.W. . . . .	Home . . . . .	908	330.2	L14 and TC9.
4	M.W. . . . .	Light . . . . .	1,214	247.0	L15 and TC10.

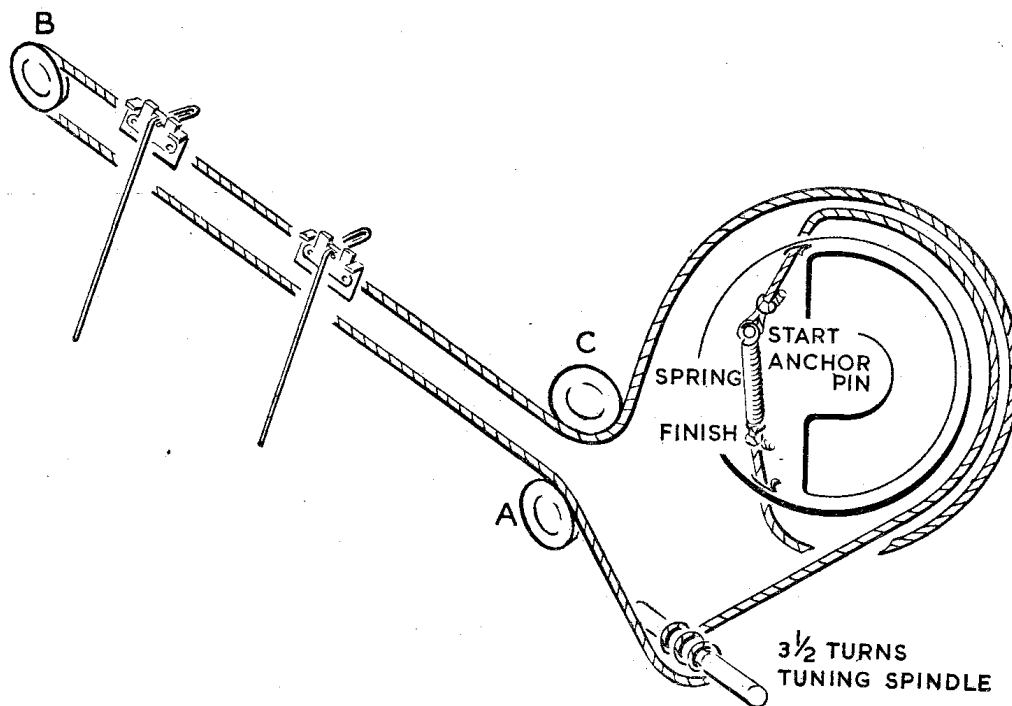
**CORD DRIVE**

Use only correct nylon cord 6370 × 0012 ; approximately 62 inches of cord is used.

1. Form a loop in one end of cord with an opening of approximately 1/8-inch in diameter and assemble on anchor pin.

2. Wind cord round pulleys as shown in diagram.
3. Secure cord to tension spring and assemble spring.

*NOTE.—The knots, to prevent slipping, should be tied as reef knots and secured with shellac.*



**CORD-DRIVE**



## SPARE PARTS LIST

Part No.	Description of Part.	No. per Inst.	Fin.	Part No.	Description of Part.	No. per Inst.	Fin.
45308	Instruction card.. ..	1	—	40970B	L9, L10—Oscillator coil, M.W.	1	—
45264	Cabinet label .. ..	1	—	40970K	L11—Oscillator coil, L.W.	1	—
42963	Transit label .. ..	1	—	27389BZ	L12—L.W. PB Oscillator coil..	1	—
47124A	Station name sheet .. ..	1	—	27389CB	L13—M.W. PB Oscillator coil..	1	—
				27389CA	L14—M.W. PB Oscillator coil..	1	—
				27389CA	L15—M.W. PB Oscillator coil..	1	—
<b>CABINET PARTS AND FITTINGS</b>							
414001	Cabinet complete .. ..	1	Pol.	See IFT1	L16—IFT1 Primary .. ..	1	—
47150	Trade mark label .. ..	1	—	See IFT2	L17—IFT1 Secondary .. ..	1	—
413616A	Baffle card (silked) .. ..	1	—		L18—IFT1 Primary .. ..	1	—
31573	Cabinet back brackets .. ..	2	689		L19—IFT1 Secondary .. ..	1	—
9545	Screws securing brackets .. ..	4	—	46553	Coil trimmer for L1-L11 .. ..	6	—
47125A	Cabinet back assy. complete with aluminium foil .. ..	1	—	32944A	Coil trimmer for L12-L15 .. ..	4	—
19896	Screw .. ..	2	676	47133	Retaining wire for coils L12-L15	1	—
19895	Washer } securing back to brackets .. ..	2	676	46551J	IFT1—First IF transformer, complete with L16, L17, C12, C14 .. ..	1	—
201300	Washer } .. ..	2	667	46551J	IFT2—Second IF transformer, complete with L18, L19, C16, C17 .. ..	1	—
200020H	Screw } securing back to cabinet .. ..	4	689	46553	Trimmer for IFT's .. ..	4	—
201302	Washer } .. ..	4	689	46552	Can for IFT's .. ..	2	—
1950	Trade mark transfer .. ..	1	—	13517	P.K. screw securing IFT's .. ..	4	—
47011A	Tuning scale .. ..	1	—	22628BS	T1—Output transformer .. ..	1	—
47018	Clip .. ..	6	—	10606	P.K. screw securing T1 .. ..	2	—
47142	Rubber tube } securing scale to cabinet .. ..	6	—	44490C	T2 mains transformer .. ..	1	—
8718	Woodscrew } .. ..	6	689	200404	Nut .. ..	4	689
				201304	Washer } securing T2 .. ..	4	689
				201804	S.P. Washer } .. ..	4	689
<b>CONTROLS</b>							
35432C	Knob—" TONE " .. ..	1	—	<b>RESISTORS</b>			
35432H	Knob—" G.S.M.L.PB." .. ..	1	—	33360G	R1—100 ohms, $\pm 5\%$ .. ..	1	—
35432E	Knob—"VOLUME ON/OFF" .. ..	1	—	33373V	R2—15,000 ohms, $\pm 5\%$ .. ..	1	—
35432F	Knob—" TUNING " .. ..	1	—	33363DW	R3—22,000 ohms .. ..	1	—
35418	Springs for knobs .. ..	4	—	33360EE	R4—0.47 megohm .. ..	1	—
47138	Push button knobs .. ..	4	—	33363PM	R5—12,000 ohms, $\pm 5\%$ .. ..	1	—
				33360DW	R6—22,000 ohms .. ..	1	—
<b>LOUDSPEAKER</b>							
46570B	Loudspeaker complete .. ..	1	—	33360EH	R7—1.5 megohm .. ..	1	—
46575	Dust cover for magnet .. ..	1	—	33360DU	R8—10,000 ohms .. ..	1	—
8626	Woodscrew securing loudspeaker .. ..	4	689	33360V	R9—15,000 ohms, $\pm 5\%$ .. ..	1	—
				33360EA	R10—0.1 megohm .. ..	1	—
				33360EA	R11—0.1 megohm .. ..	1	—
				33360EK	R12—3.3 megohms .. ..	1	—
				33360EC	R13—0.22 megohm .. ..	1	—
				33360DU	R14—10,000 ohms .. ..	1	—
				37870FP	R15—2,000 ohms, $\pm 5\%$ .. ..	1	—
				33363AW	R16—200 ohms, $\pm 5\%$ .. ..	1	—
				37870N	R17—1,000 ohms, $\pm 5\%$ .. ..	1	—
				37941FJ	VR1—0.5 megohm, Volume control switch .. ..	1	—
				37941GJ	VR2—20,000 ohms, Tone control .. ..	1	—
<b>RADIO UNIT</b>							
47000L	Radio Unit complete .. ..	1	—	<b>CAPACITORS</b>			
200025S	Screw .. ..	4	689	38050DC	C1—22 mmfd. .. ..	1	—
201302	Washer } securing radio unit .. ..	4	689	38001J	C2—220 mmfd. .. ..	1	—
201502	Spring washer } .. ..	4	—	38001ZJ	C3—47 mmfd., $\pm 2\%$ .. ..	1	—
47127A	Chassis fixing bar (front) .. ..	1	689	38001WF	C4—0.0039 mfd., $\pm 2\%$ .. ..	1	—
47126B	Chassis fixing bar complete (rear) .. ..	1	689	38001VQ	C5—510 mmfd., $\pm 2\%$ .. ..	1	—
				38000VE	C6—180 mmfd., $\pm 2\%$ .. ..	1	—
				38004TF	C7—100 mmfd., $\pm 2\%$ .. ..	1	—
<b>VALVES</b>							
V1	X78—Frequency changer						
V2	W77—I.F. amplifier						
V3	DH77—Detector A.G.C. and A.F. amplifier						
V4	N78—Output						
V5	U78—Rectifier						
<b>INDUCTANCES</b>							
40970G	L1, L2—Aerial coil, S.W. .. ..	1	—				
40970H	L3, L4—Aerial coil, M.W. .. ..	1	—				
40970J	L5, L6—Aerial coil, L.W. .. ..	1	—				
40970A	L7, L8—Oscillator coil, S.W. .. ..	1	—				

Part No.	Description of Part.	No. per Inst.	Fin.	Part No.	Description of Part.	No. per Inst.	Fin.
38100A	C8—100 mmfd., 750 V.	1	—	6250	Washer } securing tuning	1	689
38000VK	C9—330 mmfd., ± 2%	1	—	2856	Circlip } spindle	1	689
38004ZJ	C10—47 mmfd., ± 2%	1	—	47128A	Pulley assy. (2 pulleys)	1	—
38100M	C11—220 mmfd., 750 V.	1	—	47128B	Pulley assy. (1 pulley)	1	—
38000VF	C12—220 mmfd., ± 2%	1	—	8777	P.K. screw securing pulley assys.	4	—
38210EA	C13—0.1 mfd.	1	—	47010A	Scale backing plate assy.	1	833
38100A	C14—100 mmfd., 750 V.	1	—	47012	Lamp brackets	2	689
38006TF	C15—100 mmfd., ± 2%	1	—	47025	Light screen, L.H.	1	—
38006TF	C16—100 mmfd., ± 2%	1	—	47026	Light screen, R.H.	1	—
38210DY	C17—0.047 mfd.	1	—	8777	P.K. screw securing brackets and screens	2	—
38210GA	C18—0.1 mfd.	1	—	47011A	Tuning scale	1	—
38006TF	C19—100 mmfd., ± 2%	1	—	47018	Clip	6	—
38006TF	C20—100 mmfd., ± 2%	1	—	47142	Rubber tube } securing scale to cabinet	6	—
38100A	C21—100 mmfd., 750 V.	1	—	8718	Woodscrew } to cabinet	6	689
38210DY	C22—0.047 mfd.	1	—	47001A	Cursor and pointer assy.	1	—
38100M	C23—220 mmfd., 750 V.	1	—	6370 × 0012	Nylon cord drive (in bulk)	55"	—
38150N	C24 (with C28 and C29)—16 mfd. electrolytic	1	—	46954	Spring for drive cord	1	—
38190B	Condenser clip	1	—	44615A	Lampholder	2	—
47019	Insulating strip	1	—	35421D	Scale lamps	2	—
200040F	Screw } securing	2	689	<b>SWITCHES</b>			
201804	S.P. Washer } condenser clip	2	—	47134A	S1—Waveband switch complete with Card 2 and Card 3 (less Card 1)	1	—
200404	Nut } condenser clip	2	689	201322	Washer for S1 fixing	1	689
200040M	Screw } securing	1	689	47135A	Switch card No. 1 only	1	—
201804	S.P. Washer } condenser in clip	1	—	47136	Switch card bracket	1	689
200404	Nut } condenser in clip	1	689	12619	P.K. screw securing bracket	1	—
38216DY	C25—0.047 mfd.	1	—	47137	Spacer	2	—
38214H	C26—0.05 mfd., 1,000 V.	1	—	47021	Insulating Washer } securing S.W. card No. 1 to bracket	2	—
38214E	C27—0.005 mfd., 1,000 V.	1	—	200068N	Screw } card No. 1 to bracket	2	689
See C24	C28—32 mfd., electrolytic	1	—	200406	Nut } card No. 1 to bracket	2	689
See C24	C29—32 mfd., electrolytic	1	—	201806	Washer } card No. 1 to bracket	2	—
39653A	TC1, TC2, TC3—Three bank trimmer assy.	1	—	See VR1	S2—On/Off switch	1	—
47017	Pillar	2	—	47129A	S3—P.B. switch	1	—
200040R	Screw } securing trimmer assy.	2	689	11187	P.K. screw securing S3	2	—
17362	Insulating Washer } securing trimmer assy.	2	—	<b>R.F. UNIT</b>			
201304	Washer } securing trimmer assy.	2	689	47000K	R.F. unit complete	1	—
201804	S.P. Washer } securing trimmer assy.	2	689	47031	P.K. screw securing R.F. unit to chassis fixing bars	6	—
200404	Nut } securing trimmer assy.	2	689	41674A	Valveholder (type B7G) for V1, V2 and V3	3	—
35480B	TC4—Trimmer (3–30 mmfd.)	1	—	59119AB	Rivet securing valveholders	6	—
35480B	TC5—Trimmer (3–30 mmfd.)	1	—	37095BB	Tag panel assy.	1	—
35480B	TC6—Trimmer (3–30 mmfd.)	1	—	37095AA	Tag panel assy.	1	—
26350BM	TC7—Trimmer (10–135 mmfd.)	1	—	12619	P.K. screw securing tag panels	2	—
	TC8—Trimmer (100–450 mmfd.)	1	—	40029A	Insulated tag (small)	4	—
	TC9—Trimmer (100–450 mmfd.)	1	—	59007CD	Rivet securing tags	4	—
26350BN	TC10—Trimmer (100–450 mmfd.)	1	—	20334A	Insulated tag (large)	1	—
200040P	Screw } securing TC7, 8 & TC9, 10	2	689	12619	P.K. screw securing tag	1	—
201804	S.P. Washer } securing TC7, 8 & TC9, 10	2	689	36489	Tag	1	104
201304	Washer } securing TC7, 8 & TC9, 10	2	689	10606	P.K. screw securing tag	1	—
200404	Nut } securing TC7, 8 & TC9, 10	2	689	16755	Rubber grommet	1	—
37101H	VC1 VC2—Twin gang capacitor	1	—	16576	Tag on trimmer assy.	1	454
46958	Rubber bush } securing VC1, VC2	3	—	<b>POWER UNIT</b>			
46250	Washer } securing VC1, VC2	3	—	47014A	Power unit complete	1	—
42856	Circlip } securing VC1, VC2	3	—	47031	P.K. screw securing power unit to chassis fixing bars	6	—
<b>TUNING DETAILS</b>				47003	Control panel for VR1 and VR2	1	689
28441H	Tuning drum assy.	1	689				
13387	Screw securing tuning drum assy.	2	03				
47008	Tuning spindle	1	03				
47009	Tuning spindle bracket	1	689				
8777	P.K. securing bracket	2	—				

Part No.	Description of Part.	No. per Inst.	Fin.	Part No.	Description of Part.	No. per Inst.	Fin.
12619	P.K. screw securing panel ..	3	—	12619	P.K. screw securing tag ..	1	—
47027	Deck plate for T1, T4 and V5	1	689	47141	Presspaper shield ..	1	—
47028	Spacer	4	689	<b>VALVEHOLDERS, PANELS, ETC.</b>			
200040N	Screw } securing deck	4	689	41764A	Valveholder (type B7G) ..	5	—
201804	S.P. Washer } plate	4	—	59119AB	Rivet securing valveholders ..	10	—
200404	Nut } plate	4	689	45969A	Valve screen for V4 and V5 ..	2	—
41674A	Valveholder (type B7G) for V4 and V5 ..	2	—	44577A	Valve screen for V1, V2, V3 ..	3	—
59119AB	Rivet securing valveholders ..	4	—	44578	Valve screen for springs ..	5	—
46956A	Fuse panel ..	1	—	20314A	Panel—Aerial/Earth ..	1	—
47029	Spacer } securing fuse	2	689	20314A	Panel—Record player ..	1	—
11805	P.K. Screw } panel	2	—	36399A	Panel—Ext/Int L/S ..	1	—
37095AA	Tag panel assy. ..	1	—	39119CC	Rivets securing panels ..	6	—
12619	P.K. screw securing panel ..	1	—	47006A	Voltage adjustment panel ..	1	—
40029A	Insulated tag (small) ..	1	—	59119AC	Rivet securing panel ..	4	—
690070CD	Rivet securing tag ..	1	—	44562B	Voltage adjusting plug ..	1	—
16757	Rubber grommet ..	3	—	16289J	Plug (Yellow) ..	2	—
38825D	Fuse, 1 amp. ..	2	—	3475G	Plug (Yellow), small ..	1	—
<b>P.B. UNIT</b>				16289B	Plug (Black) ..	1	—
47132C	P.B. unit complete ..	1	—	7229	Tag (for loudspeaker) ..	2	104
47031	P.K. screws securing P.B. unit ..	4	—	18888A	Mains lead carton ..	1	—
47130	Bracket supporting coil panel, R.H. } viewed from underside of chassis	1	689	20988	Clip } for carton	1	—
47131	Bracket supporting coil panel, L.H. } viewed from underside of chassis	1	689	29296	Rubber band } for carton	1	—
8777	P.K. screws securing coil panel to brackets ..	4	—	20852B	Mains lead ..	1	—
37019	Grommet ..	2	—	4201 × 2300	Mains lead (in bulk) ..	6 ft.	—
36489	Tag (on coil panel) ..	1	104	408450	Cleat securing mains lead ..	1	—
				201304	Washer } securing cleat for earth lead	1	689
				10606	P.K. screw } securing cleat for earth lead	1	—
				11802	Tag (open) } for earth lead	1	104
				15140	Tag } for earth lead	1	104
				38825D	Fuse, 1 amp. ..	2	—

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

1. Model number and serial number.
2. Spare part number and description, as given above.
3. Quantity required.

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

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