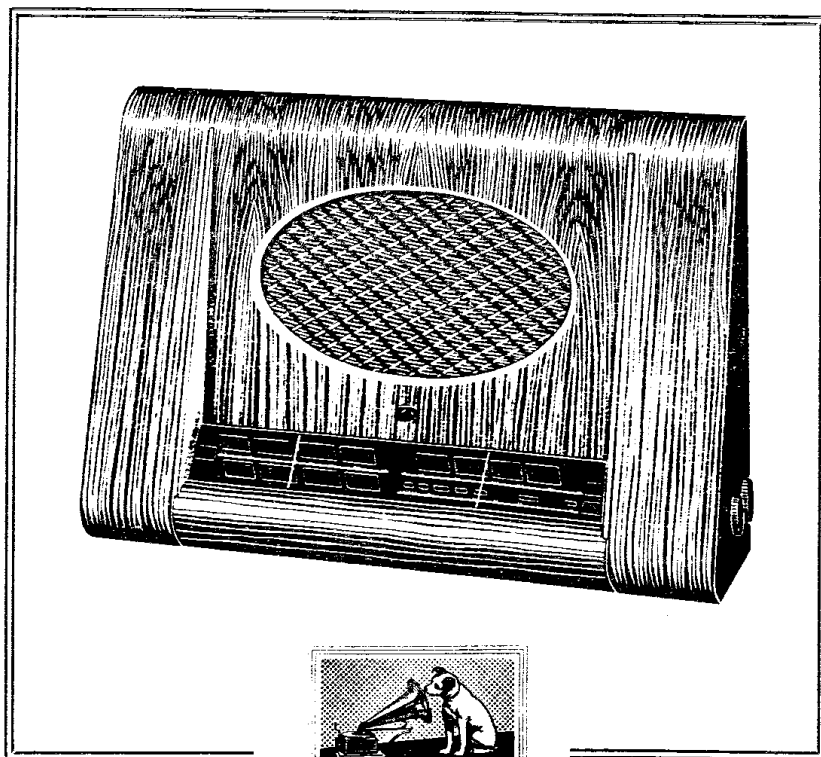


# “His Master’s Voice”



*The Hallmark of Quality*

## SERVICE MANUAL

Model 1122

5-valve Superhet Table Receiver

for A.C. Mains

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# MODEL 1122

## SPECIFICATION

### Physical.

Height	..	..	..	..	13 inches	} Approx. Overall.
Depth	..	..	..	..	9 inches	
Width	..	..	..	..	20 inches	
Weight	..	..	..	..	21½ 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.

### Intermediate Frequency.

465 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 volt, 0.3 amp.

Two Fuses—1.0 amp., Cartridge type.

### Loudspeaker.

The loudspeaker is a dust-proof, 10½-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.

Switch 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.

## CIRCUIT DESCRIPTION

### Frequency Changer.

The aerial is inductively coupled to tuned coils in the grid circuit of the triode hexode frequency changer V1 (X78).

The tuned grid coils are adjusted by iron dust-cores and parallel trimmer capacitors.

The local oscillator circuit also has tuned coils adjustable by means of iron-dust cores and parallel trimmer capacitors the tuned windings being in the anode circuit.

Capacity coupling C6 is used on the long wave band.

The first iron-dust cored I.F. transformer (IFT1) couples this valve to the I.F. amplifier.

### I.F. Amplifier.

The I.F. amplifier V2 (W77) amplifies at the intermediate frequency of 465 kc/s. The second I.F. transformer (IFT2) couples this valve to the detector.

### Detector, A.G.C. and A.F. Amplifier.

A diode of the double diode triode V3 (DH77) is used as a detector and A.G.C. rectifier. The Volume control

VR1 forms the diode load. The A.G.C. voltage is taken from the D.C. component of the speech voltage across VR1 and is applied to control the bias of the grid circuits of V1 and V2 which are decoupled by R7 and C13.

L.F. signals taken from VR1 are applied to the grid of the triode section of V3 and this section is resistance-capacity coupled to the grid of the output valve.

### Output.

The output valve V4 (N78) has its cathode biased by R16. Tone correction is given by C24 and variable tone control by C23 and VR2. This valve supplies the loudspeaker via an Output Transformer (T1).

### H.T. and Heater Supplies.

H.T. is supplied from the mains transformer T2 and the full wave rectifier V5 (U78). Smoothing is obtained by C26, R17 and C25.

The heater supply is taken from a separate winding on the mains transformer. Two scales lamps LP1 and LP2 are connected across this winding.

## 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 a 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. (1.4 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 465 kc/s into the grid of V2.
2. Adjust cores L16, L15, L14 and L13 in that order for maximum output.

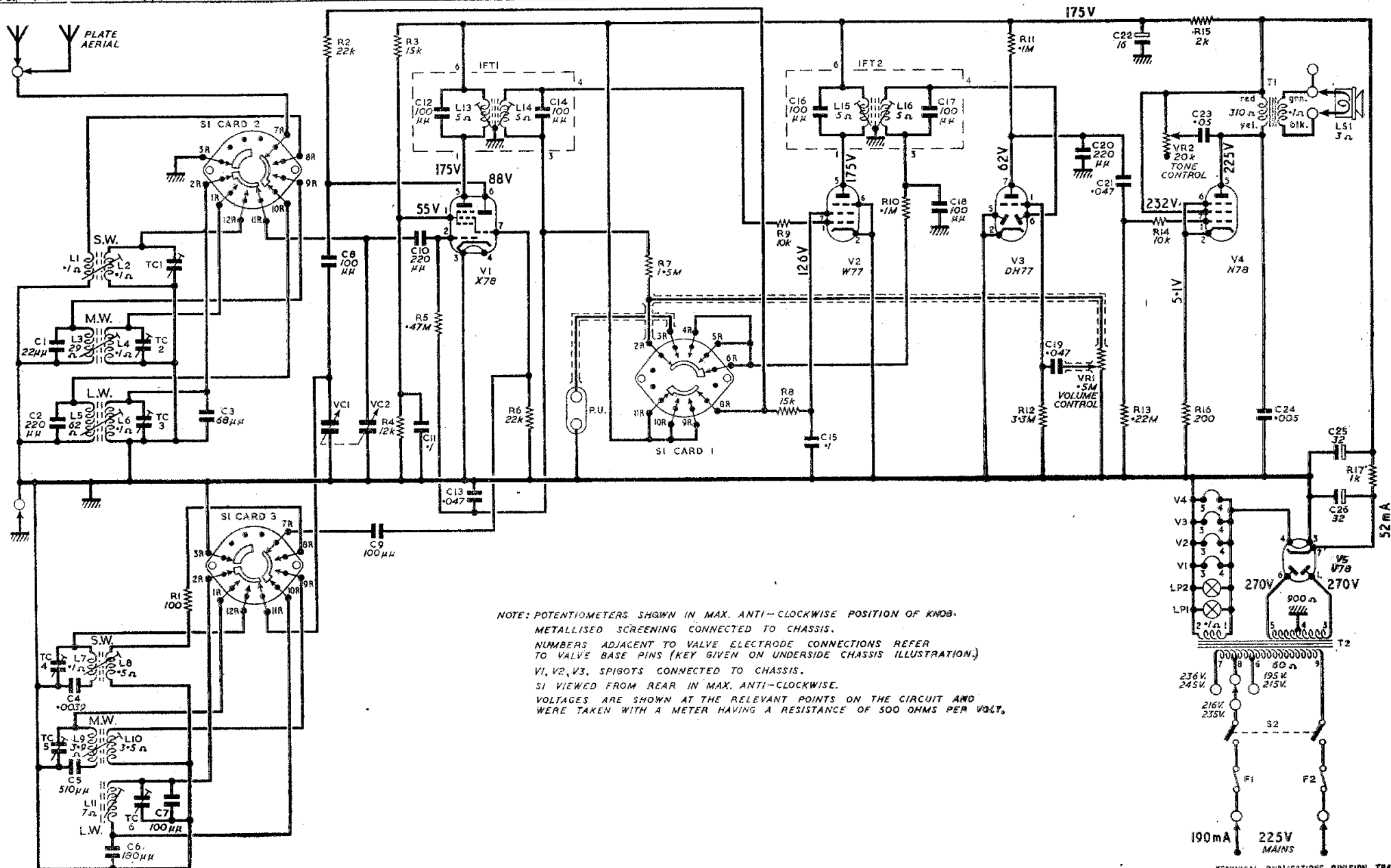
### R.F. Alignment.

#### Short Waves.

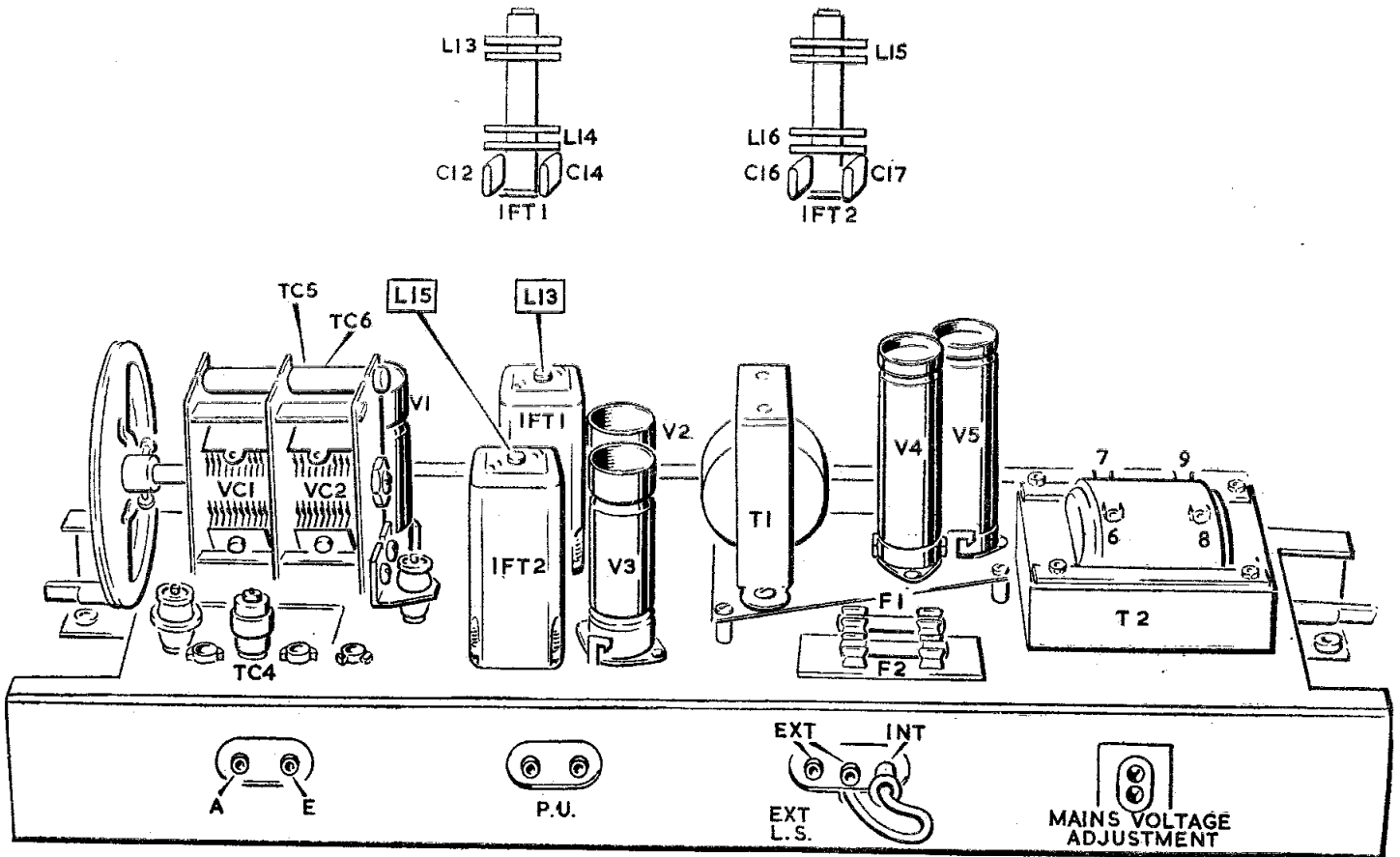
Set Volume and Tone controls fully clockwise and Waveband switch as required. Inject test signal into aerial and earth sockets via a S.W. dummy aerial.

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 L7 for maximum output.
	2	As Generator	16.8	17.8	Adjust TC1 and TC4 for maximum output
	3	—	—	—	Repeat operations 1 and 2.

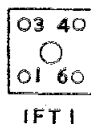
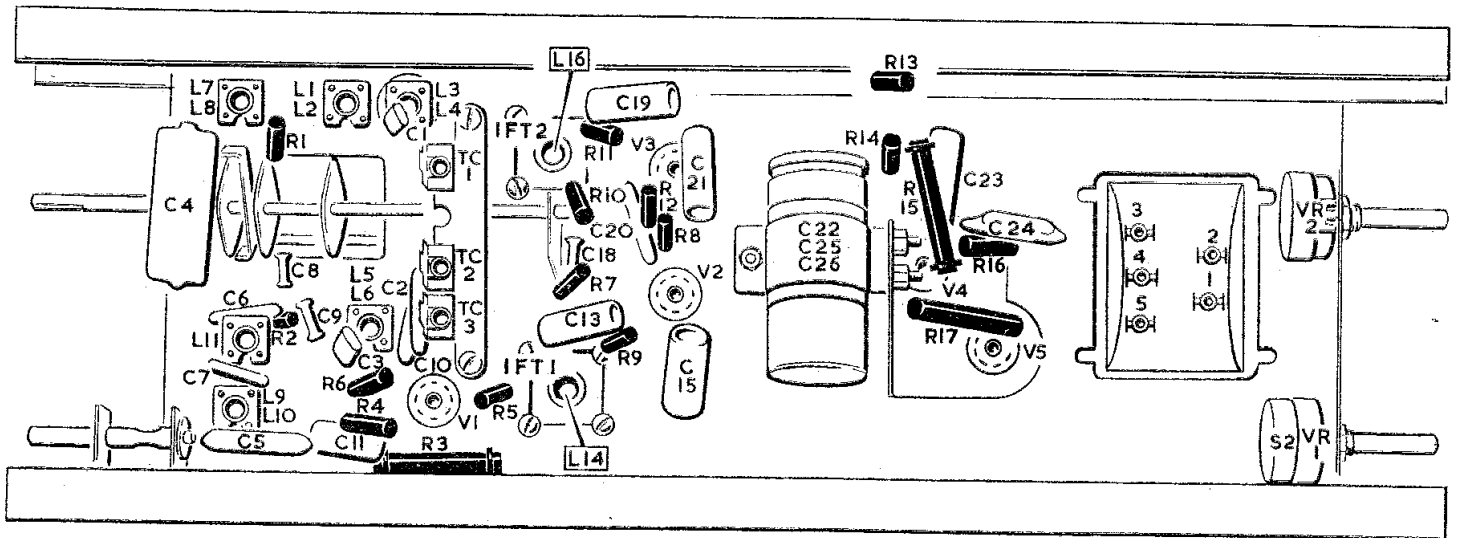
C	2	1	4,5	6	7	8	9	10,12,13	14	15	16	17	18	19	20,21,22	23	24	25,26	R								
MISC.	TC4, TC5	LI TO LH	TC1, 2, 3, 6	VC1	VC2	L13	VI, V1	IFT1	LI4	P.U.	7	8, 9	LI5, V2	IFT2	LI6	V3	12, 11	15, 14	15, 16	VR1	LP1, LP2, VR2	V4, FI	S2, T1	F2	LS1, V5	T2	MISC.



NOTE: POTENTIOMETERS SHOWN IN MAX. ANTI-CLOCKWISE POSITION OF KNOB.  
 METALLISED SCREENING CONNECTED TO CHASSIS.  
 NUMBERS ADJACENT TO VALVE ELECTRODE CONNECTIONS REFER TO VALVE BASE PINS (KEY GIVEN ON UNDERSIDE CHASSIS ILLUSTRATION).  
 V1, V2, V3, SPIGOTS CONNECTED TO CHASSIS.  
 SI VIEWED FROM REAR IN MAX. ANTI-CLOCKWISE.  
 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



UNDER-SIDE CHASSIS

**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 m.	Generator to kc/s.	Operation.
M.W. . . . .	1	As Generator	510	588	Adjust L4 and L9 for maximum output.
	2	As Generator	186.9	1,605	Adjust TC5 for maximum output.
	3	Rock Gang	210	1,427	Adjust TC2 for maximum output.
	4	—	—	—	Repeat operations 1 to 3.

**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 m.	Generator to kc/s.	Operation.
L.W. . . . .	1	As Generator	1,850	162	Adjust L6 and L11 for maximum output.
	2	As Generator	1,000	300	Adjust TC3 and TC6 for maximum output.

**CORD DRIVE**

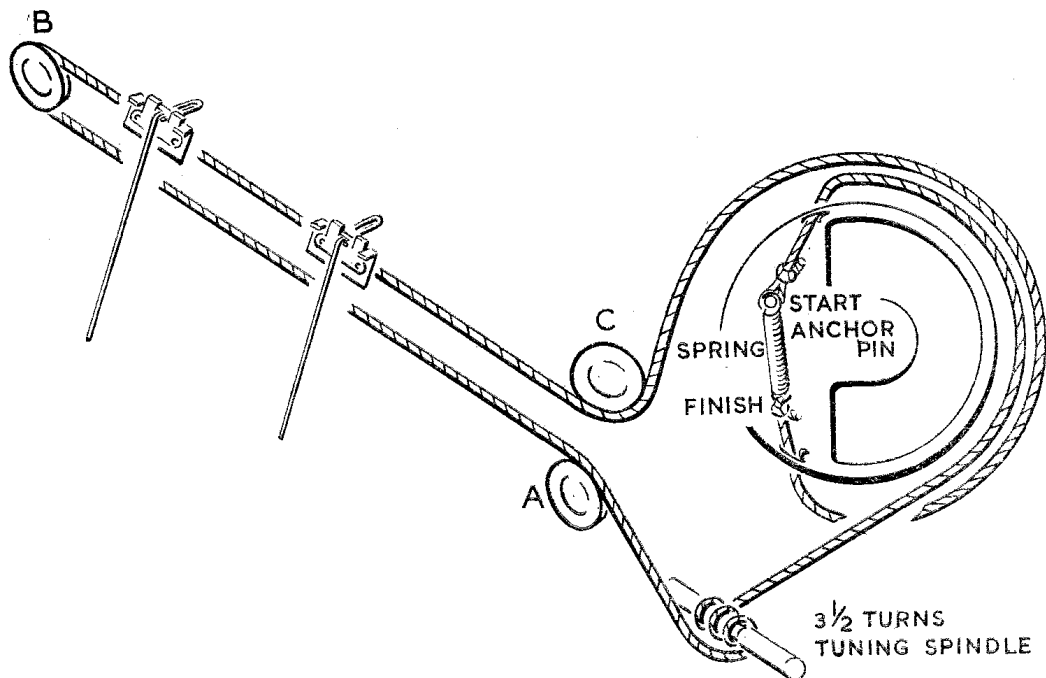
Use only correct nylon cord 6370 × 0012; approximately 72 inches of cord is used.

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

Ref.	Description.	Part No.	Ref.	Description.	Part No.
<b>CABINET AND FITTINGS</b>					
	Cabinet	413601	C25	32 mfd.	} See C22
	Cabinet Back	47013A	C26	32 mfd.	
	Scale	47011A	VC1	} Gang Condenser	} 37101G
	Knob—Volume On/Off	35432E	VC2		
	Knob—Tuning	35432F	TC1		
	Knob—Waveband	35432D	TC2	Trimmer, 4·30 mmfd.	} 39653A
	Knob—Tone	35432C	TC3	Trimmer, 4·30 mmfd.	
	Spring	35418	TC4	Trimmer, 4·30 mmfd.	35480B
			TC5	Trimmer, 4·30 mmfd.	35480B
			TC6	Trimmer, 4·30 mmfd.	35480B
<b>INDUCTANCES</b>					
L1	} S.W. Aerial Coil	40970G	R1	100 ohms ± 5%	33360G
L2			R2	22,000 ohms	33363DW
L3	} M.W. Aerial Coil	40970H	R3	15,000 ohms ± 5%	33373V
L4			R4	12,000 ohms ± 5%	33363PM
L5	} L.W. Aerial Coil	40970J	R5	0·47 megohm	33360EE
L6			R6	22,000 ohms	33360DW
L7	} S.W. Oscillator Coil	40970A	R7	1·5 megohms	33360EH
L8			R8	15,000 ohms ± 5%	33360V
L9	} M.W. Oscillator Coil	40970B	R9	10,000 ohms	33360DU
L10			R10	0·1 megohm	33360EA
L11	L.W. Oscillator Coil	40970K	R11	0·1 megohm	33360EA
L13	IFT1 Primary Coil	} See IFT1	R12	3·3 megohms	33360EK
L14	IFT1 Secondary Coil		R13	0·22 megohm	33360EC
L15	IFT2 Primary Coil	} See IFT2	R14	10,000 ohms	33360DU
L16	IFT2 Secondary Coil		R15	2,000 ohms ± 5%	37870FP
<b>CAPACITORS</b>					
C1	22 mmfd.	38050DC	R16	200 ohms ± 5%	33363AW
C2	220 mmfd. ± 5%	38001J	R17	1,000 ohms ± 5%	37870N
C3	68 mmfd. ± 2%	38004YC	VR1	0·5 megohm Volume Control	37941FJ or 37945FJ
C4	0·0039 mfd. ± 2%	38001WF	VR2	20,000 ohms Tone Control	37941GJ
C5	510 mmfd. ± 2%	38001VQ	<b>VALVES</b>		
C6	180 mmfd. ± 2%	38000VE	V1	X78—Frequency Changer	
C7	100 mmfd. ± 2%	38004TF	V2	W77—I.F. Amplifier	
C8	100 mmfd.	38100A	V3	DH77—Detector, A.G.C. and A.F. Amplifier	
C9	100 mmfd.	38100A	V4	N78—Output	
C10	220 mmfd.	38100M	V5	U78—Rectifier	
C11	0·1 mfd.	38210EA	<b>TRANSFORMERS AND CHOKES</b>		
C12	100 mmfd. ± 2%	See IFT1	IFT1	1st I.F. Transformer	46551J
C13	0·047 mfd.	38210DY	IFT2	2nd I.F. Transformer	46551J
C14	100 mmfd. ± 2%	See IFT1	T1	Output Transformer	22628BS
C15	0·1 mfd.	38210EA	T2	Mains Transformer	44490C
C16	100 mmfd. ± 2%	} See IFT2	<b>MISCELLANEOUS</b>		
C17	100 mmfd. ± 2%		S1	Waveband and Radio-Gram Switch	47002A
C18	100 mmfd.	38100A	S2	Mains ON/OFF Switch	See VR1
C19	0·047 mfd.	38210DY	LP1	Scale Lamp, 6·8 v., 0·3 amp.	35421D
C20	220 mmfd.	38100M	LP2	Scale Lamp, 6·8 v., 0·3 amp.	35421D
C21	0·047 mfd.	38210DY	LS1	Loudspeaker	46570B
C22	16 mfd., 350 v., Electrolytic	38150N	F1	Fuse, 1·0 amp.	38825D
C23	0·05 mfd., 1,000 v.	38214H	F2	Fuse, 1·0 amp.	38825D
C24	0·005 mfd., 1,000 v.	38214E			

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.

Order spare parts from—

E.M.I. SALES AND SERVICE, LTD.,  
SPARE PARTS DIVISION,  
SHERATON WORKS,  
WADSWORTH ROAD,  
GREENFORD, MIDDLESEX.

*Telephone* PERivale 6666.

*Telegraphic Address* Emiservice, Greenford, Middlesex.



# SPARE PARTS LIST

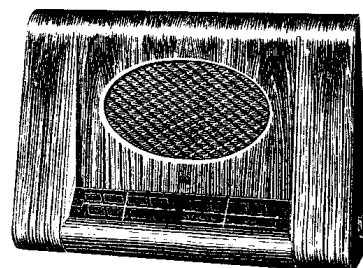
\* MODEL 1122 \*

## "HIS MASTER'S VOICE" Model 1122

5-VALVE SUPERHET TABLE RECEIVER  
FOR A.C. MAINS



*The Hallmark of Quality*



PART NO.	DESCRIPTION OF PART.	NO. INST.	PER FIN-ISH	PART NO.	DESCRIPTION OF PART.	NO. INST.	PER FIN-ISH
<b>INSTRUCTIONS</b>				<b>LOUDSPEAKER</b>			
45263	Instruction Card	1	-	46570B	Loudspeaker complete	1	-
45264	Cabinet label	1	-	46575	Dustcover for magnet	1	-
42963	Transit label	1	-	8626	Woodscrew securing loudspeaker	4	689
<b>CABINET PARTS &amp; FITTINGS</b>				<b>RADIO UNIT</b>			
413601	Cabinet complete	1	Pol	47000F	Radio Unit complete	1	-
47150	Trade Mark label	1	-	200020P	Screw } securing	4	689
413616A	Baffle card (silked) (silk only)	1	-	201302	Washer } radio	4	689
	6100x8804 14"x9"	1	-	201502	Spring washer } unit	4	-
31573	Cabinet back brackets	2	689	47004A	Chassis fixing bar (Front)	1	689
9545	Screws securing brackets	4	-	47005B	Chassis fixing bar complete (rear)	1	689
47013A	Cabinet back assy. complete with aluminium foil	1	-	<b>VALVES</b>			
19896	Screw } securing back to	2	676	V1	X78	Frequency changer	
19895	Washer } brackets	2	676	V2	W77	I.F. Amplifier	
201300	Washer }	2	676	V3	DE77	Detector, A.G.C. & A.F. Amp.	
9559	Woodscrew } securing back	3	689	V4	N78	Output	
201304	Washer } to cabinet	3	689	V5	U78	Rectifier	
1950	Trade Mark transfer	1	-	<b>INDUCTANCES</b>			
47011A	TUNING SCALE	1	-	40970G	L1 L2	Aerial Coil S.W.	1 -
47018	Clip } securing	6	-	40970H	L3 L4	Aerial Coil M.W.	1 -
47142	Rubber tube } scale to	6	-	40970J	L5 L6	Aerial coil L.W.	1 -
8718	Woodscrew } cabinet	6	689	40970A	L7 L8	Osc. coil S.W.	1 -
				40970B	L9 L10	Osc. coil M.W.	1 -
				40970K	L11	Osc. coil L.W.	1 -
				See IFT1	L13 L14		
				See IFT2	L15 L16		
<b>CONTROLS</b>							
35432C	Knob "TONE"	1	-				
35432D	Knob "G.S.M.L."	1	-				
35432E	Knob "VOLUME ON/OFF"	1	-				
35432F	Knob "TUNING"	1	-				
35418	Springs for knobs	4	-				

Part No. 48418

Issue 1

February, 1952



PART NO.	DESCRIPTION OF PART.	NO. PER FIN-		PART NO.	DESCRIPTION OF PART.	NO. PER FIN-	
		INST.	ISH			INST.	ISH
47016	Spacer	}	securing	41674A	Valveholder (type B7G) for	2	-
47021	Insulating washer			V4 and V5			
200060Q	Screw	}	No. 1 to	59119AB	Rivet securing valveholders	4	-
200406	Nut			bracket	46956A	Fuse panel	1
201806	Washer	}		47029	Spacer	2	689
SeeVR1	S2 On/Off switch						
<b><u>R.F. UNIT</u></b>				11805	P.K.Screw	}	fuse panel
47000C	R.F.Unit complete	1	-	37095AA	Tag panel assy.		
47031	P.K.screw securing R.F.Unit	}	to chassis fixing bars	12619	P.K.screw securing panel	1	-
41674A	Valveholder (type B7G) for			6	-	40029A	Insulated tag (small)
	V1 V2 & V3			69007CD	Rivet securing tag	1	-
59119AB	Rivet securing valveholders	6	-	16757	Rubber grommet	3	-
37095BB	Tag panel assy.	1	-	38825D	Fuse 1 amp	2	-
12619	P.K.screw securing tag panel	1	-	<b><u>VALVEHOLDERS, PANELS ETC.</u></b>			
40029A	Insulated tag (small)	3	-	41674A	Valveholder (type B7G)	5	-
59007CD	Rivet securing tags	3	-	59119AB	Rivet securing valveholders	10	-
20334A	Insulated tag (large)	1	-	45969A	Valve screen for V4 and V5	2	-
12619	P.K.screw securing tag	1	-	44577A	Valve screen for V1 V2 V3	3	-
36489	Tag	1	104	44578	Valve screen for Springs	5	-
10606	P.K.screw securing tag	1	-	20314A	Panel - Aerial/Earth	1	-
16755	Rubber grommet	1	-	20314A	Panel - Record player	1	-
16576	Tag on trimmer assy.	1	454	36399A	Panel - Ext/Int L/S	1	-
<b><u>POWER UNIT</u></b>				59119CC	Rivets securing panels	6	-
47014A	Power unit complete	1	-	47005A	Voltage adjustment panel	1	-
47031	P.K.screw securing power unit	}	to chassis fixing bars	59119AC	Rivet securing panel	4	-
47003	Control panel for VR1 & VR2			6	-	44562B	Voltage adjusting plug
12619	P.K.screw securing panel	3	-	16289J	Plug (yellow)	2	-
47027	Deck plate for T1 & T4 V5	1	689	20852B	Mains lead	1	-
47028	Spacer	}	securing	4201x2300	Mains lead (in bulk)	6	ft
200040N	Screw			4	689	40845C	Cleat securing mains lead
201804	S.P.Washer	}	deck plate	201304	Washer	}	securing
200404	Nut			4	689		
				11802	Tag (open)	}	for earth lead
				15140	Tag		
				38825D	Fuse 1 amp	2	-

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

1. Model and serial numbers (on back).
2. Spare part number and description.
3. Quantity required.

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*Order Spare Parts.*

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*Telephone: PERivale 6666*

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