



"His Master's Voice"

SERVICE MANUAL

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TABLE RADIO MODEL 1380



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SERVICE DEPOTS

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SPECIFICATION

Description

Model 1380 is a printed circuit table model receiver designed for AC/DC operation. A four valve (including rectifier) superheterodyne circuit is employed covering long and medium waveranges.

An internal ferrite-rod aerial, operative on both wavebands, provides adequate sensitivity under normal reception conditions. The on-off switch is combined with the volume control.

The chassis is housed in a plastic moulded cabinet finished in a choice of two colour combinations.

Valves

V1	UCH81	Frequency Changer.
V2	UBF89	IF Amplifier and Detector.
V3	UCL82	Audio Amplifier and Output.
V4	UY85	HT Rectifier.

Power Supply

AC/DC mains 200-250 Volts (40-60 c.p.s. AC).
Power consumption approximately 35 Watts.

Output Power

1½ Watts

Waveranges

Medium 180-565 Metres.

Long 1090-1935 Metres.

Loudspeaker

PM type, 7" x 4" elliptical, 3Ω speech coil.

Cabinet Dimensions

13¼ inches wide x 9 inches high x 5¾ inches deep.

PRICE 1/-

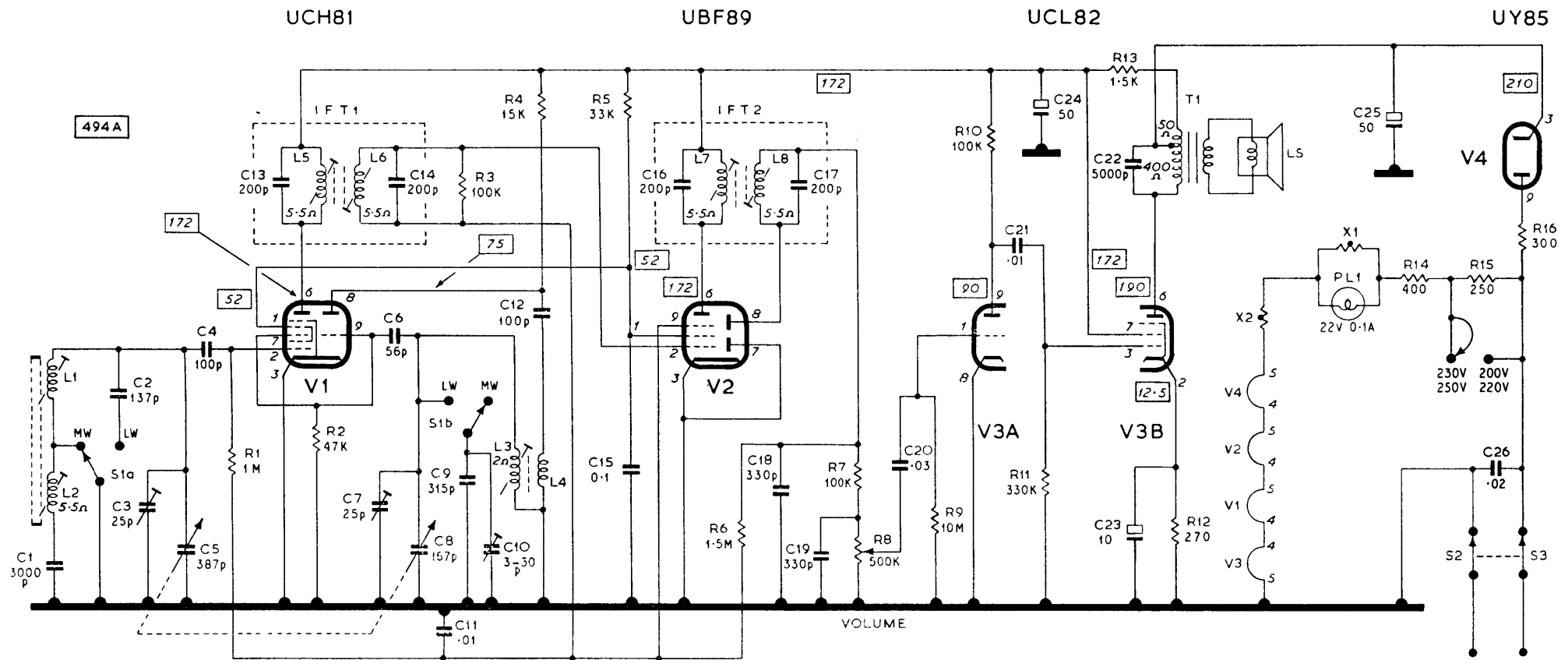


Fig. 1. Circuit diagram of model 1380 (Sch. C) Sch. A & B models differ from the above in that C10 is not fitted and C9 is 342 pF. Figures in rectangles are voltage readings taken with a 20,000 Ω /volt meter. DC resistances are shown against inductances where these are 1Ω or greater.

CIRCUIT DESCRIPTION

With the receiver switched to MW, **S1A** short circuits the long wave winding **L2** on the ferrite rod aerial and the medium wave winding **L1** is tuned by **C5** with trimmer **C3**. To tune the LW band, both aerial windings are series connected and **C2** is connected across the circuit by **S1A**: **C4** couples the signal to the grid circuit of **V1** (UCH81) the frequency changer. The oscillator is grid tuned with **L3** the grid coil and **L4** the anode coupling winding. On MW, **L3** is tuned by **C8** with trimmer **C7**; on LW, **C9** with trimmer **C10** (Sch. C only) is connected across **L3** by **S1B**.

V2 (UBF89) functions as the IF amplifier and

sound detector. The audio output is developed across the volume control **R8** and coupled by **C20** to the audio amplifier **V3A** (triode section of UCL82). The DC voltage across **R7** and **R8** produced by the rectified signal is decoupled by **R6** and **C11** and fed as AGC bias to the grid circuits of **V1** and **V2**. The anode circuit of **V3A** is RC coupled to **V3B** (pentode section UCL82) the output stage. **V3B** drives the audio output transformer **T1** which has a hum neutralizing tapped primary. **C22** provides tone correction.

The valve heaters are series connected and fed from the mains supply while HT is provided through the half wave rectifier **V4** (UY85).

CHASSIS REMOVAL

1. Pull off the three front control knobs and remove the cabinet back (4 woodscrews and washers).
2. Unsolder the connecting leads from the audio output transformer (note colour coding).
3. Remove the three chassis securing screws, one at each end of the chassis and the other in the top left hand corner of the cabinet.
4. Withdraw the chassis from the cabinet side grooves.

ALIGNMENT

The chassis may be aligned inside the cabinet.

IF Alignment

Switch the receiver to MW, turn the tuning gang to its minimum capacitance position and the volume control to maximum. Inject a 470 Kc/s modulated signal through a 0.1 μ F capacitor at the control grid of **V1** (pin 2).

Adjust **L8**, **L7**, **L6** and **L5** in that order for maximum output, reducing the input voltage as required to keep the output level as low as possible.

RF Alignment

MW must be aligned first. Pad (low frequency) and trim (high frequency) points are

provided on the scale for MW, with a calibration marker for LW. The signals should be injected via a loop loosely coupled to the ferrite rod aerial.

1. Check that with the tuning gang fully closed, the cursor lies just inside the right hand end of the long and medium wave scale windows. (If necessary adjust the cursor by sliding it along the drive cord.)
2. Switch to MW and set the cursor to the pad marker. Inject a 580 Kc/s signal and adjust **L3** and **L1** for maximum output.
3. Set the cursor to the trim marker, inject a 1500 Kc/s signal and adjust **C7** and **C3** for maximum output.
4. Repeat 2 and 3 until no improvement results.

5. Switch to LW and set the cursor to the LW calibration marker. Inject a 220 Kc/s signal and adjust **C10** and **L2** for maximum output.

Note :—In Sch. A and B models, where **C10** is not fitted, tune the receiver for maximum output, and check that this occurs with the cursor near the LW calibration marker. Then adjust **L2** for maximum output.

PRINTED BOARD SERVICING

When replacing resistors or capacitors, cut away the faulty component and solder the replacement to the original lead wires. When this method of connection is impossible and connection must be made to the copper side of the panel, use a small iron, non-corrosive flux and 60-40 solder. Do not apply the iron for longer than necessary. To remove components secured by clip lugs, use a heavier type iron and apply heat and pressure to the lugs, so that as the solder melts, the lug is pressed clear of the connecting point.

PRINTED BOARD CONNECTIONS

1. To C8 (tuning gang).
2. To tuning gang frame.
3. To C5 (tuning gang).
4. To volume control (wiper).
5. To volume control (chassis connection).
6. Connected to 7.
7. Connected to 6.
8. To T1 primary (top terminal).
9. To T1 primary (bottom terminal).
10. To T1 primary (centre terminal).
11. To volume control.
12. Mains connection to on-off switch.
13. Chassis connection to on-off switch.
14. To pilot lamp.
15. To pilot lamp.
16. To voltage selector.

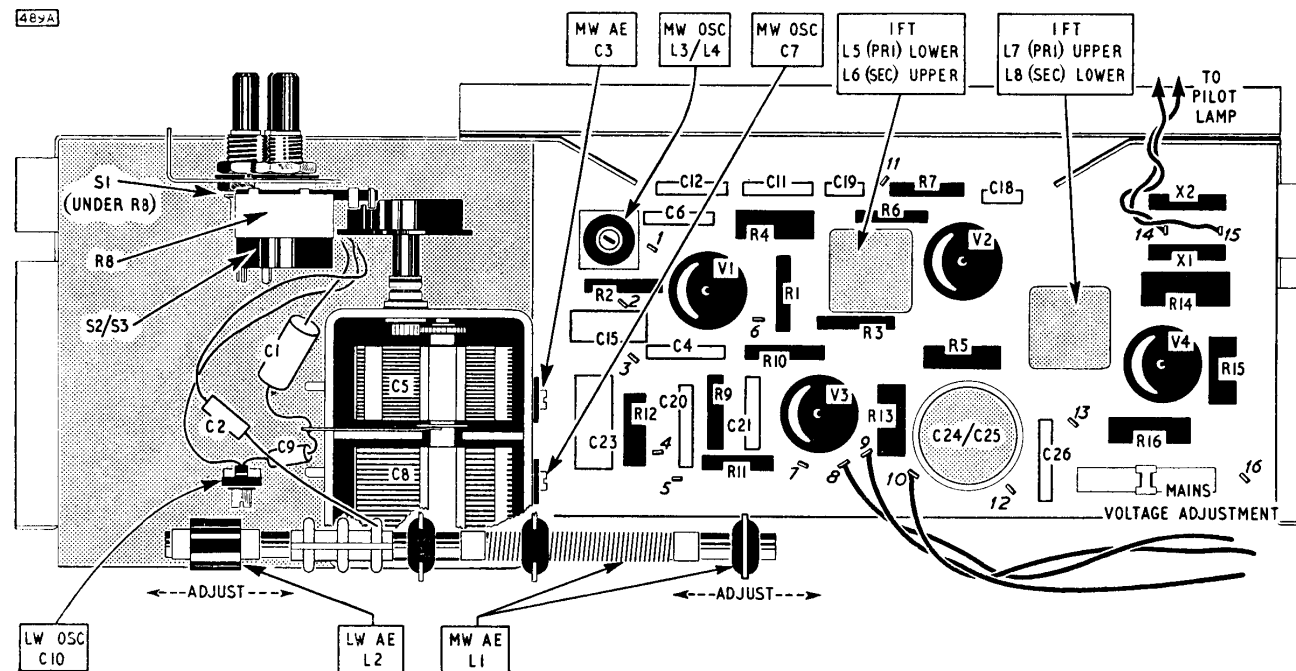
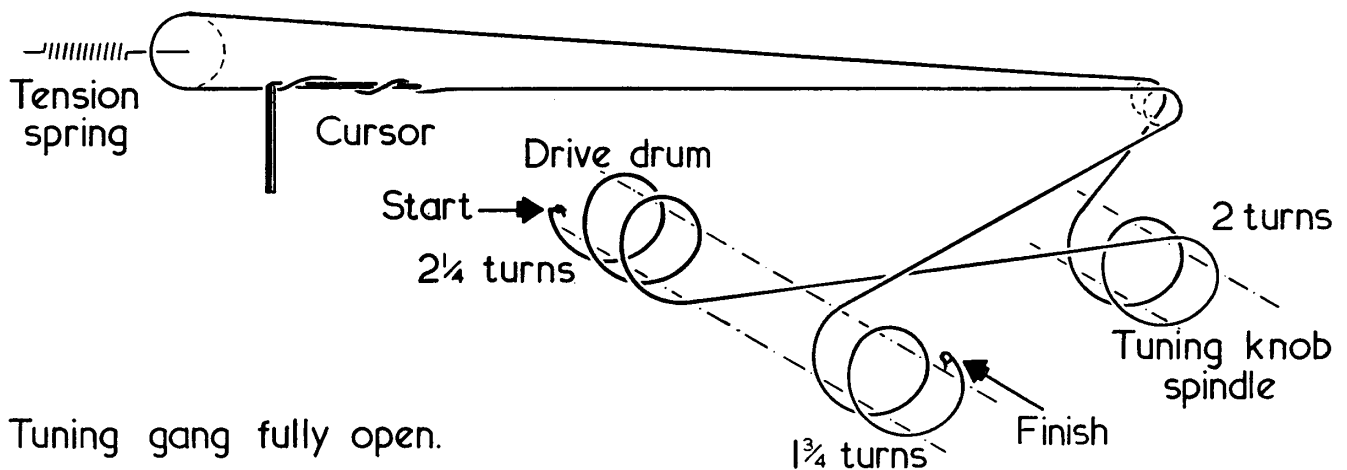


Fig. 2. The chassis and printed board, viewed from the components side. Alignment positions are shown in rectangles. Printed board connection tags are also indicated.

DRIVE CORD REPLACEMENT



Tuning gang fully open.

Length of cord – approximately 42 in.

423B

Fig. 3. Diagrammatic representation of the tuning drive cord, viewed from the front.

COMPONENTS LIST

CAPACITORS

(All 350V working 20% tolerance unless otherwise stated)

Ref.	Value	Tol.	Volts	Function
C 1	3000pF	5%		LW aerial padder (fixed)
C 2	137pF	2%		LW aerial trimmer (fixed)
C 3	25pF	Trimmer		MW aerial trimmer (pre-set)*
C 4	100pF			V1 heptode grid coupling
C 5	387pF	Variable		Aerial tuning*
C 6	56pF			V1 triode grid coupling
C 7	25pF	Trimmer		MW oscillator trimmer (pre-set)*
C 8	167pF	Variable		Oscillator tuning*
C 9†	315pF	2%		LW oscillator trimmer (fixed)
C10†	3-30pF	Trimmer		LW oscillator trimmer (pre-set)
C11	.01uF			AGC decoupling
C12	100pF			V1 triode feedback coupling
C13	200pF	2.5%		L5 tuning
C14	200pF	2.5%		L6 tuning
C15	0.1uF		250V	V2 pentode screen decoupling
C16	200pF	2.5%		L7 tuning
C17	200pF	2.5%		L8 tuning
C18	330pF			Part IF filter
C19	330pF			Part IF filter
C20	.03uF		350V AC	V3A grid coupling
C21	.01uF			V3B grid coupling
C22	5000pF			Tone correction
C23	10uF	Elec. 25V		V3B cathode bypass
C24	50uF	Elec. 275V		HT smoothing
C25	50uF	Elec. 275V		HT reservoir
C26	.02uF		350V AC	Mains RF bypass

* Part gang condenser—Part No. Y32668

† In Sch. A and B models, where C10 is not fitted, C9 is 342 pF

RESISTORS

(All 1/2 Watt carbon unless otherwise stated)

Ref	Value	Rating	Function	Part No.
R 1	1MΩ	10%	V1 heptode AGC feed	
R 2	47KΩ	10%	V1 triode grid leak	
R 3	100KΩ	10%	IFT damping	
R 4	15KΩ	10%	V1 triode anode load	
R 5	33KΩ	10%	1/2W V2 pentode screen feed	
R 6	1.5MΩ	10%	AGC decoupling	
R 7	100KΩ	10%	Part IF filter	
R 8	500KΩ	Log. Pot.	Volume control	Y13147/13
R 9	10MΩ	10%	V3A grid leak	
R10	100KΩ	10%	V3A anode load	
R11	330KΩ	10%	V3B grid leak	
R12	270Ω	10%	1W V3B cathode bias	
R13	1.5KΩ	10%	1W HT smoothing	
R14	400Ω	5%	5W Mains dropper	
R15	250Ω	5%	3W Mains dropper	
R16	300Ω	5%	3W HT surge limiter	

INDUCTORS AND TRANSFORMERS

Ref.	Function	Part No.	
L 1	MW	} Ferrite rod aerial	Y32667/1
L 2	LW		
L 3	Oscillator tuning	} Oscillator feedback coupling	Y25881
L 4	Oscillator feedback coupling		
L 5	} 1st IF transformer	Z29447	
L 6			
L 7	} 2nd IF transformer	Z29446	
L 8			
T 1	Audio output transformer	Z32793	

MISCELLANEOUS

Ref.	Description and Function	Part No.
S1A-B	Wavechange switch	Z25702/3
S2-3	Mains on/off switch	Y13147/13
PL1	Pilot lamp 22V 0.1A	33765
LS	Loudspeaker 3Ω impedance	Y16011/9
X1/2	Thermistors Varite VA 1010	Z4558/7

MECHANICAL SPARES

Description	Part No.
Cabinet :-	
Colour scheme A (light grey and white)	V33033/2
Colour scheme B (dark grey and white)	V33033/5
Cabinet back	V33026/1
Control knobs :-	
Tuning (clip 45931)	X32439/1
Volume (clip 37309)	Y32440/2
Wavechange (clip 37309)	Y32440/3
Control panel :-	
Red, for cabinet A	Y33111/1
Green, for cabinet B	Y33111/2
Cursor	Z33058
Drive drum	Y29434
Reflector	Y33059
Scale :-	
for cabinet A	N33216/1
for cabinet B	N33216/2