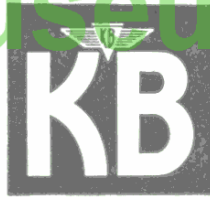


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TECHNICAL LIBRARY
KOLSTER-BRANDES Ltd.
FOOTSCRAY KENT

SERVICE DATA

MODEL

RB10

ISSUED: JANUARY, 1961.

KOLSTER-BRANDES LIMITED
FOOTSCRAY SIDCUP KENT

SERVICE DEPOTS

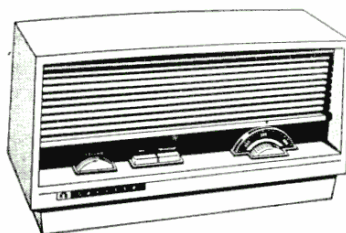
41, BENT STREET,
CHEETHAM, MANCHESTER
Telephone: BLAckfriars 1751 (3 lines)

FOOTSCRAY,
SIDCUP, KENT
FOOTscray 3333 (10 lines)

87, McALPINE STREET,
GLASGOW
CENTral 1779



Service Manual for RB10



GENERAL INFORMATION

This receiver is a small A.C. mains transportable, for long and medium wavebands.

POWER SUPPLY: 200–250 volts, 50 c/s. 25 watts.

WAVERANGES: Long Waveband: 150–265 Kc/s (2,000–1,132 metres)
Medium Waveband: 540–1,610 Kc/s (556–185 metres)

CONTROLS:

Push Buttons (Double-Acting Type)

1. On and Off. 2. Longwave and Medium Wave.

Volume Control (Rim Drive) Tuning (Rim Drive)

VALVE COMPLEMENT:

12BE6	Frequency changer.
6BJ6	I.F. amplifier.
12AT6	Audio amplifier detector.
19AQ5	Audio output.
Mains Selenium Rectifier	S.T.C. C3D.

DIMENSIONS:	<i>Height</i>	<i>Width</i>	<i>Depth</i>	<i>Weight</i>
	6 $\frac{3}{8}$ ins.	12 ins.	4 $\frac{3}{4}$ ins.	3 lbs. 3 ozs
	(17 cms.)	(30.5 cms.)	(12.1 cms.)	(1.46 Kgs.)

POWER OUTPUT: 1 watt for 10% distortion.



CIRCUIT INFORMATION

ISSUED: AUGUST 1960

RB10 CIRCUIT INFORMATION

Power supply to the receiver feeds the valve heaters in series with the H.T. supply. This has the effect of saving the mains dropping resistance and reducing the total power consumption, and therefore the operating temperatures to approximately $\frac{2}{3}$ of those in a conventional receiver. Resistors R11 and R12 are connected between rectifier cathode and chassis to ensure heater current flow in the valves on switch-on, and to make up the correct heater current when H.T. current is drawn by the receiver. The valve heaters are arranged with V4 and V2 in the H.T. side of the circuit, and V1 and V3 in the earthy return.

RB10 SPARES LIST

Description	Part No.
Oscillator Coil	609/23
1st I.F. Assembly	609/53
2nd I.F. Assembly	609/54
Rod Aerial Assembly	609/30
Tuning Condenser	609/210
Potentiometer - Volume Control	9/9/3
Push button Unit	609/204
Rectifier	14/4
Speaker	563/250
Audio Output Transformer	609/95
Knob	609/260
32 + 32 MFD Electrolytic Condenser	KEM 112
2.5K ohm 5% 6 Watt Resistor	R252 EMJ

The aerial coils, L1 and L2, are contained on a ferrite rod, the two coils being connected in series, on Long Wave. The oscillator circuit of the 12BE6 comprises the coil, L5, with condensers C4 and T1. The Long Wave condenser, C6, is connected in parallel with L5.

A single stage (6BJ6) of I.F. amplification precedes the detector. The frequency is 470 Kc/s. One of the diodes of the 12AT6 audio amplifier is used as a detector. The volume control, R5, is used as a diode load, and A.G.C. volts derived from the detector are fed to the frequency changer over R4 and C8.

One stage of audio amplification precedes the output valve which uses a "hum-bucked" output transformer in its anode circuit.

Power supply to the receiver feeds the valve heaters in series with the H.T. supply. This has the effect of saving the mains dropping resistance and reducing the total power consumption, and therefore the operating temperature, to approximately 2/3 of the conventional receiver. Resistors R11 and R12 are connected between rectifier cathode and chassis to ensure heater current flow in the valves on switch on, and to make up the correct heater current when H.T. current is drawn by the receiver. The valve heaters are arranged with V4 in the H.T. side of the circuit, and V1, V2 and V3 in the earthy return.

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ALIGNMENT INSTRUCTIONS

The following equipment will be required:—

1. A.M. signal generator covering the range 140–1700 Kc/s.
2. Output power meter.
3. Shielded test coil (85 turns of enamel covered wire on 2" diameter former).

Procedure.

1. All measurements made with signal modulated 30% at 400 c.p.s.
2. Progressively reduce signal input as the sensitivity increases with alignment maintaining approximately 50 mW. output for I.F. input and 50 mW. output for aerial input.

I.F. Alignment.

1. Set generator to 470 Kc/s. and connect via a 0.1 μ F. condenser to pin⁷ of V1 (12BE6), i.e. between gang condenser frame and aerial section.
2. Set gang to minimum capacity.
3. Trim for maximum gain by adjusting cores in the following order:- L7, L6, L3, L4 and then readjust L6 and L7 if required.

R.F. Alignment.

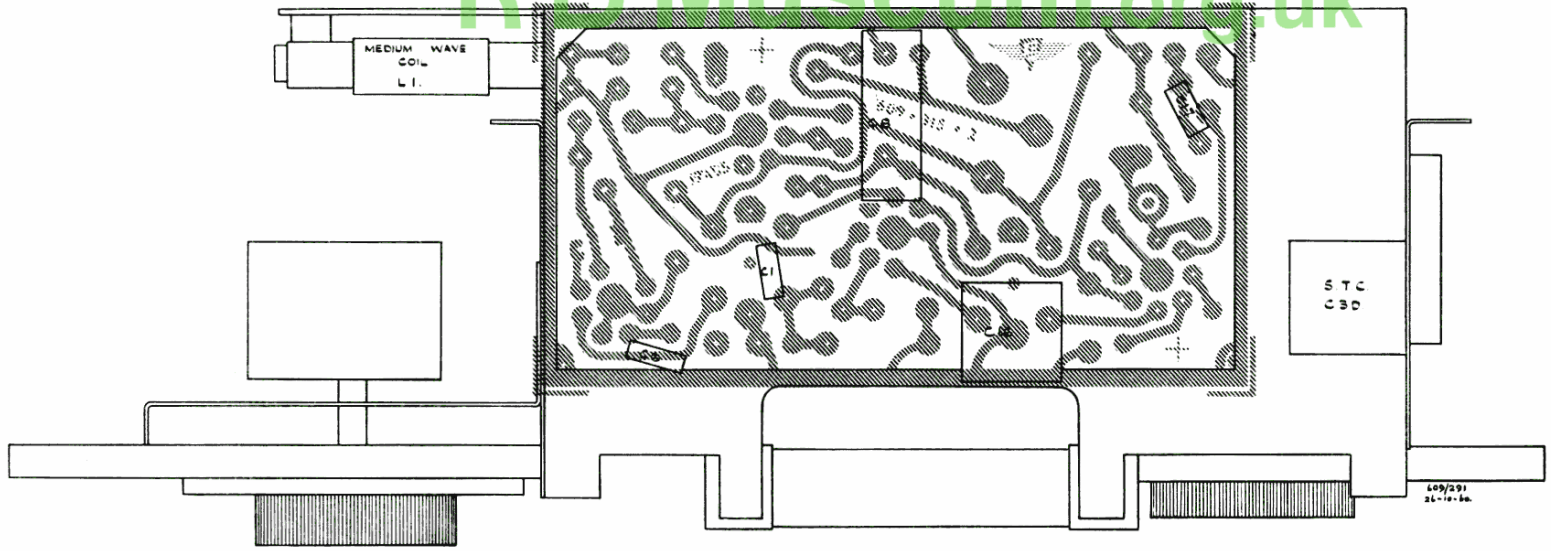
1. Connect signal generator to test coil.
2. The following operations should be carried out in the order indicated being repeated as necessary until scale accuracy, with maximum sensitivity, is attained.

Operation	Input Frequency	Waveband	Gang Position	Adjustments
1	540 Kc/s.	M.W.	180° (max. C)	Osc. core L5.
2	1610 Kc/s.	M.W.	0° (min. C)	Osc. trimmer.
3	Check operation 1.			
4	600 Kc/s.	M.W.	—	Move MW aerial coil for maximum gain.
5	1350 Kc/s.	M.W.	—	Move MW aerial trimmer wire for maximum gain.
6	225 Kc/s.	L.W.	—	Move LW aerial coil for maximum gain.

SPARES LIST

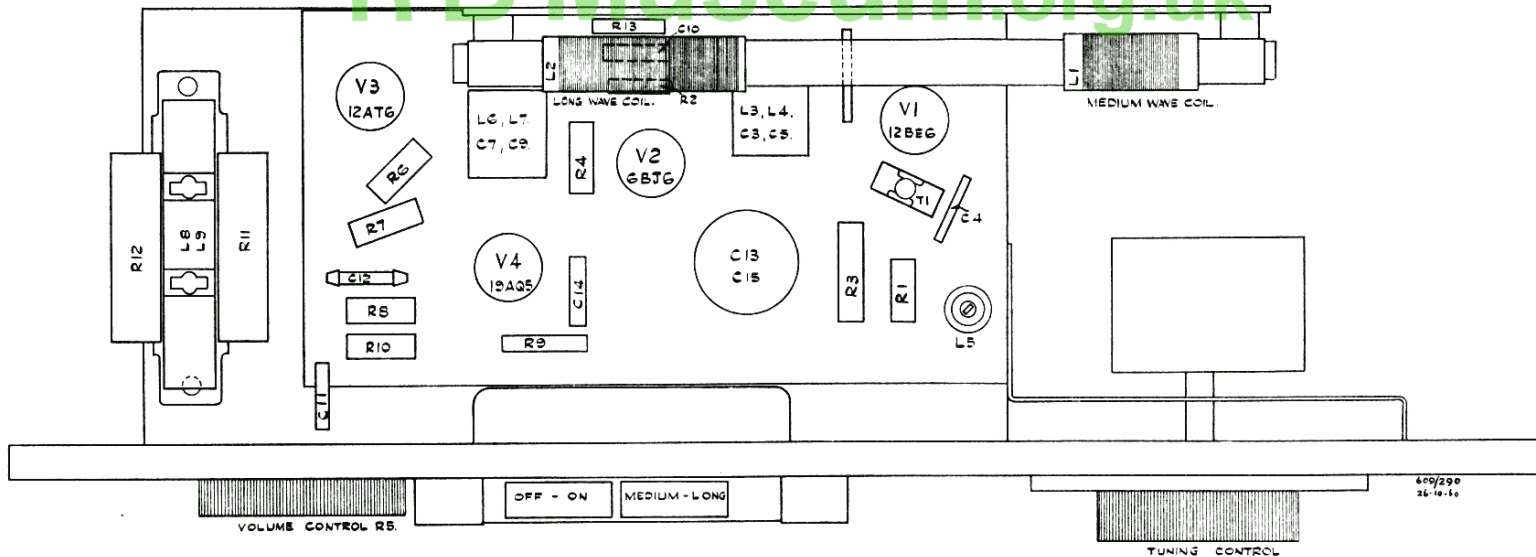
Prices are subject to alteration without notice.

Component	Colour Code	Circuit Ref.	Part No.	Price
Cabinet			609/220	21/6
Cabinet Back			609,222	1/9
COILS				
Rod Aerial Assy.		L1, L2	609/30	8/9
Oscillator Coil		L5	609/23	2/3
1st. I.F. Assy.		L3, L4	609/53	6/-
2nd. I.F. Assy.		L6, L7	609,54	6/-
CONDENSERS				
.03 μ F. +80% -20%		C16	KC 113	1/6
Elec. 32+32 μ F 250V.		C13, C15	KEM 112	4/9
244 pF. \pm 2% 125V.		C4	KST 297	1/6
Dial Assy.			609/139	2/9
Gangned Condenser			609/210	14/3
Knob			609/260	1/-
Push Button Unit			609/204	9/6
Volume Control			9/9/3	2/9
Rectifier C3D.			14/4	10,9
2.5 KΩ \pm 5% 6W. Dropper			R252EMB	1/9
TRANSFORMER				
Audio Output		L8, L9	609/95	9/6
Speaker (Plessey)			609/250	18/9 + P. Tax.

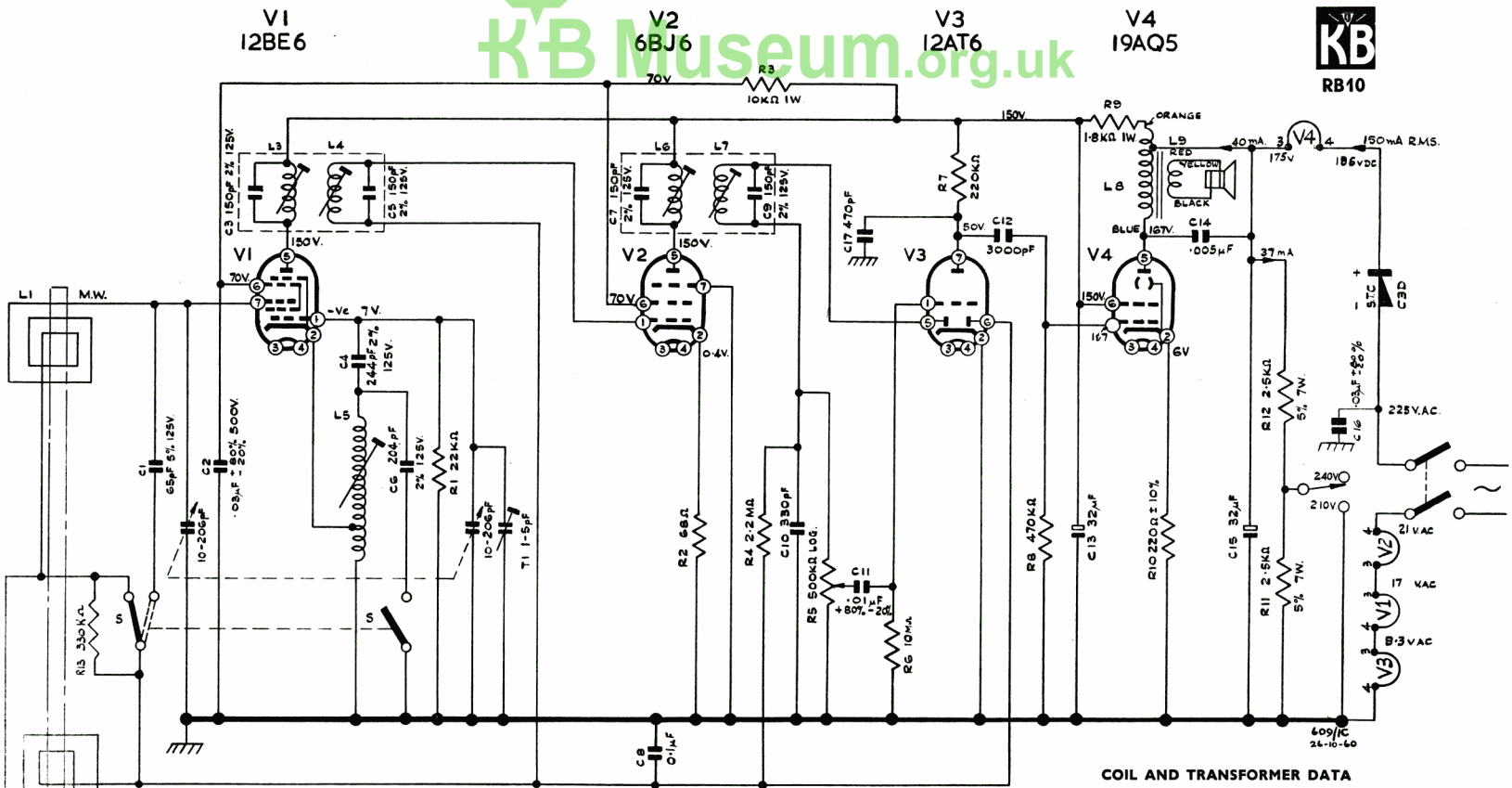


BOTTOM CHASSIS VIEW

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TOP CHASSIS VIEW



- NOTES:**
1. I.F. 470kc/s
 2. WAVE RANGES - MW 540 - 1610 Kc/s
L.W. 150 - 270 Kc/s
 3. WAVE-CHANGE SWITCH (S) SHOWN IN M.W. POSITION
 4. UNLESS OTHERWISE STATED - ALL RESISTORS $\pm 20\%$ 1/2W.
- ALL CONDENSERS $\pm 20\%$ 350V.

CIRCUIT DIAGRAM RB10

COIL AND TRANSFORMER DATA

Audio O/P Transformer	
Primary—Start to Tap	191 Ω
Tap to Finish	9 Ω
All others: Less than 1 Ω	