

SERVICE DATADESCRIPTION

**GENERAL.** The K-B Model HR 10 is a 4-valve plus rectifier 3 waveband superheterodyne receiver for operation on AC power supply of 200-250 volts 50-100 cps. using miniature valves.

**WAVE RANGE.** Three wave bands cover the long, medium and short wave frequencies, thus :—  
 Long Wave - 142-340 kc/s (2,100- 880 metres)      Medium Wave - 525-1,610 kc/s (570-187 metres)  
 Short Wave - 5·8-18·4 mc/s (51-18·4 metres)

**VALVES.** The receiver is fitted with the following valves :—

V.1 Frequency Changer	-	-	BRIMAR 6BE6	V.4 Output	-	BRIMAR 6AQ5
V.2 IF Amplifier	-	-	BRIMAR 6BA6	V.5 Rectifier	-	BRIMAR 6X4
V.3 Det., AVC and LF Amplifier	-	-	BRIMAR 6AT6			

**CONSUMPTION.** 40 watts.

**OUTPUT.** 3 watts.

**EXTENSION LOUDSPEAKER.** Sockets are provided for an external loudspeaker of 2-4 ohms impedance. A "screw" switch is provided for disconnecting the internal loudspeaker when required.

**REMOVAL OF CHASSIS.** Remove the four knobs by pulling forward. Remove the two chassis fixing screws, situated in front of the chassis either side of the scale backplate, and withdraw chassis to the rear. The loudspeaker lead is long enough to operate the chassis on the bench without disconnecting.

The mains transformer is fitted with a temperature fuse to prevent overheating should a fault occur. This fuse should not be reset with ordinary solder as a special low melting point solder is used. There is sufficient solder on the fuse for resetting by melting with a normal soldering iron.



HR 10 CIRCUIT



V1  
6BE6

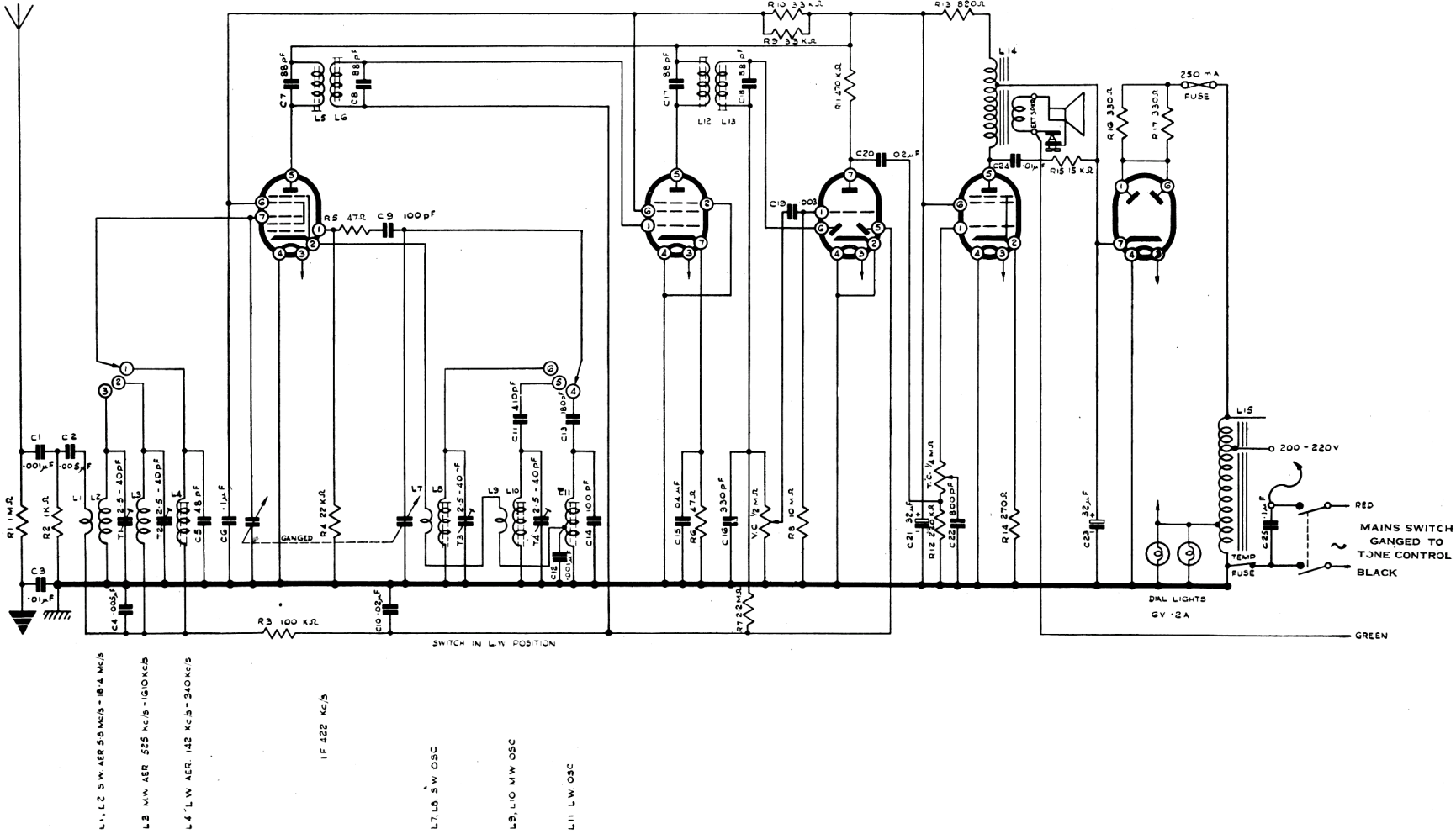
V2  
6BA6

V3  
6AT6

V4  
6AQ5

V5  
6X4

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MAINS SWITCH  
GANGED TO  
TONE CONTROL  
BLACK

DIAL LIGHTS  
GV .2A

GREEN

L1, L2 SW AER 56 Mc/s - 18.4 Mc/s  
L3 MW AER 525 Mc/s - 1510 Kc/s  
L4 LW AER 142 Kc/s - 340 Kc/s

IF 422 Kc/s

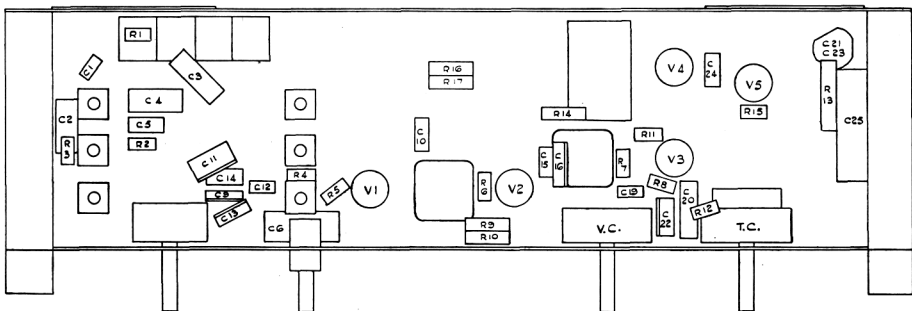
L7, L8 SW OSC

L9, L10 MW OSC

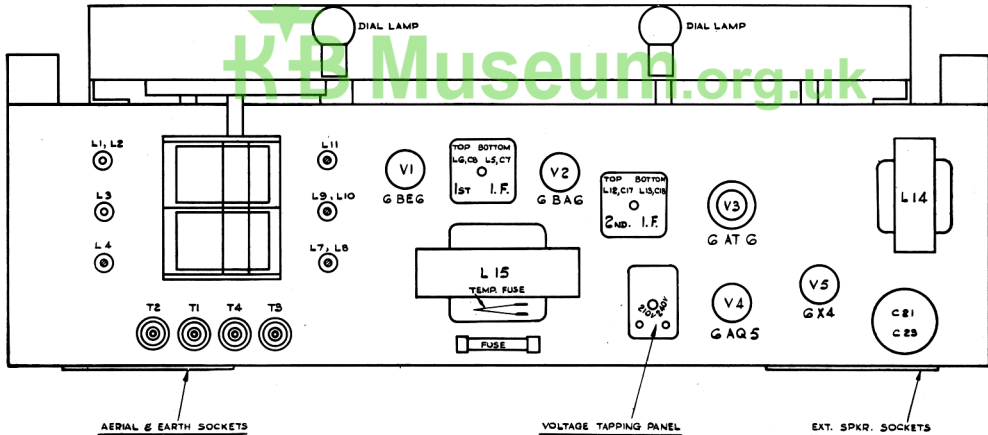
L11 LW OSC

SWITCH IN LW POSITION

RESISTOR	R3	R1 R2	R4	R5	R16, R17, R6, R9, R10	R14	R7 R11 R8	R12	R15	R13
CAPACITOR	C2 C1	C4 C5	C3 C11 C14 C9 C13 C12 C6	C10	C15 C16	C19	C22 C20 C24	C21 C23 C25		



# TOP VIEW OF CHASSIS



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COIL & TRANSFORMER DATA				HR 10				
CIRCUIT REF. No.	FUNCTION	RESISTANCE OHMS	CIRCUIT REF. No.	FUNCTION	RESISTANCE OHMS	CIRCUIT REF. No.	FUNCTION	RESISTANCE OHMS
L1	S.W. AERIAL PRIMARY	LESS THAN 1	L7	S.W. OSC. PRIMARY	LESS THAN 1	L13	2nd I.F. SECONDARY	20
L2	S.W. AERIAL SECONDARY	LESS THAN 1	L8	S.W. OSC. SECONDARY	LESS THAN 1	L14	OUTPUT TRANS. PRIMARY	510
L3	M.W. AERIAL	3-4	L9	M.W. OSC. PRIMARY	LESS THAN 1	L14	OUTPUT TRANS. PRIM TAP TO FIN	1-5
L4	L.W. AERIAL	18	L10	M.W. OSC. SECONDARY	4-4	L14	OUTPUT TRANS. SECONDARY	LESS THAN 1
L5	1st I.F. PRIMARY	20	L11	L.W. OSCILLATOR	8	L15	MAINS TRANS. ST. TO HEATER TAP	LESS THAN 1
L6	1st I.F. SECONDARY	20	L12	2nd I.F. PRIMARY	20	L15	MAINS TRANS. ST. TO FINISH	153



MODEL  
**HR 10**

# ALIGNMENT CHART FOR HR 10

*Operations MUST be carried out in the order indicated.*

* Operation	Alignment of	Connect Signal Generator to	Inject Signal via	Adjust Input Signal to	Set Wave Band Switch to	Set Tuning Pointer to	To be adjusted for maximum output
1	I.F.	Grid of Frequency Changer	.1 mfd.	422 kc/s	M.W.	214 M	L13, L12, L5 & L6
2	M.W.	Aer. Socket	Standard Dummy Aerial	600 kc/s	"	500 M	Cores L10, L9
3	"	"	"	1,400 kc/s	"	214 M	Trimmers T4, T2
4	L.W.	"	"	225 kc/s	L.W.	1,333 M	Cores L11, L4
5	S.W.	"	"	6 mc/s	S.W.	50 M	Cores L8, L7
6	"	"	"	15 mc/s	"	20 M	Trimmers T3, T1

## NOTES

The oscillator operates at a higher frequency than the input signal on all bands.

The tuning pointer should be set to the datum mark with the gang condenser at maximum capacity.

The input signal should be progressively reduced as the sensitivity increases with alignment and kept as low as is reasonable.

The tuning condenser should be rocked slightly for maximum gain whilst finally adjusting the aerial trimmers.

The operations for each wave band should be successively repeated until scale accuracy and maximum sensitivity have been attained.

Medium wave should be checked after the long wave alignment has been completed and operations 2 and 3 repeated if necessary.

As the scale is left fixed to the cabinet when the chassis is removed, calibration lines are marked on the scale backplate.

## VOLTAGE CHART HR 10

Mains Input—240v. in 240v. tap  
Aerial and Earth Disconnected

Band switch Datum M.W.  
SN = Slightly Negative

Volume Control at Minimum  
Readings approximate

Volts measured between SOCKET and CHASSIS

Valve	Function	Volts measured between SOCKET and CHASSIS									
		1	2	3	4	5	6	7	8	TOPCAP	
V1 6BE6	Frequency Changer	SN	—	6.3 AC	—	222	81	SN	—	—	
V2 6BA6	I.F. Amplifier	SN	—	6.3 AC	—	222	81	0.4	—	—	
V3 6AT6	Det., AVC & L.F. Amp.	SN	—	6.3 AC	—	SN	SN	52	—	—	
V4 6AQ5	Output	—	10	6.3 AC	—	232	222	—	—	—	
V5 6X4	Rectifier	221 AC	220	6.3 AC	—	—	221 AC	239	—	—	

Volts across 1st Electrolytic ...	...	...	...	...	...	C23	239
" " 2nd " ...	...	...	...	...	...	C21	222
" " Smoothing Resistor ...	...	...	...	...	...	R13	17
Total Mains Current ...	...	...	...	...	...	—	153 mA
" H.T. " ...	...	...	...	...	...	—	59 mA

## IMPORTANT

This Receiver uses **BRIMAR** Valves and is specifically designed around them.

Its performance may be impaired unless **BRIMAR** Valves of the correct types are used when replacements are needed.



MODEL  
**HR 10**

# SPARES LIST HR 10

ALWAYS QUOTE PART No. WHEN ORDERING SPARES

Component	Colour Code	Circuit Ref.	Part No.	Price	Component	Colour Code	Circuit Ref.	Part No.	Price
Aerial and Earth Panel			83071	6d.	Dial Lamp Holder			83056	1/3
Cabinet			290/220	150/-	Dial Lamp 6v., 2A.			201/193	1/6
Cabinet Back			291/222/2	3/6	Dust Core			160/226	6d.
<b>COILS:—</b>					Exten. Speaker Panel			83073	1/6
L.W. Aerial	Red, Yellow	L4	196/24	3/0	Fuse .250 mA	Black Spot		89511/3	1/0
M.W. Aerial	Red, Orange, Red	L3	291/21	3/0	Fuse Holder			89510	1/6
S.W. Aerial	Red, Yellow, Yellow	L1, 2	297/15	3/0	Fuse Link			297/185	6d.
L.W. Oscillator	Brown, Red, Blue	L11,	176/26	3/0	Gang Condenser			290/210	13/6
M.W. Oscillator	Brown, Red, Violet	L9, 10	176/23	3/0	<b>KNOBS:—</b>				
S.W. Oscillator	Violet, White	L7, 8	202/17	3/0	Wave Change			290/260/1	9d.
<b>CONDENSERS:—</b>					Tuning			290/260	9d.
.001 mfd.			C1	KPM31	Volume			290/129	9d.
.005 mfd.			C2	KT37/T	Tone			290/129	1/0
.01 mfd.			C3	KT21/T	<b>RESISTANCES:—</b>				
.005 mfd.			C4	KT23/T	1 meg. 20% 1w.		R1	R105HE	6d.
48 pf.			C5	KST87	1 k ohms 20% 1w.		R2	R102HE	6d.
.1 mfd.			C6	KT54	100 k ohms 20% 1w.		R3	R104HE	6d.
100 pf.			C9	KST49	22 k ohms 10% 1w.		R4	R23FE	6d.
.02 mfd.			C10	KPM33	47 ohms 20% 1w.		R5,6	R470HE	6d.
410 pf.			C11	KST150	2.2 meg. 20% 1w.		R7	R225HE	6d.
.001 mfd.			C12	KPM21	10 meg. 20% 1w.		R8	R108HE	6d.
180 pf.			C13	KST69	33k ohms 10% 1w.		R9,10	R333FE	6d.
100 pf.			C14	KST22	470k ohms 20% 1w.		R11	R474HE	6d.
.04 mfd.			C15	KPM35	220k ohms 20% 1w.		R12	R224HE	6d.
330 pf.			C16	KST110	820 ohms 10% 1w.		R13	R821FFM	6d.
.003 mfd.			C19	KPM23	270 ohms 10% 1w.		R14	R271FE	6d.
.02 mfd.			C20	KT51	15k ohms 20% 1w.		R15	R153HE	6d.
32+32 mfd.			C21, 23	KEM56	330 ohms 20% 1w.		R16,17	R331HF	6d.
800 pf.			C22	KST151	<b>Scale</b>				
.01 mfd.			C24	KPM30	Speaker			297/200	7/6
.1 mfd.			C25	KT24/T	Switch Wavechange			270/250	35/0
Drive Drum			72/211	2/0	Trimmer Strip			290/203	6/0
Drive Cord Assembly			290/174	1/0	Tone Control		T1,2,3,4	297/189	4/0
								80670/1	9/6

Prices are subject to alteration without notice.

## DRIVE CORD ASSEMBLY

