

# KOLSTER-BRANDES LIMITED

FOOTSCRAY

SIDCUP

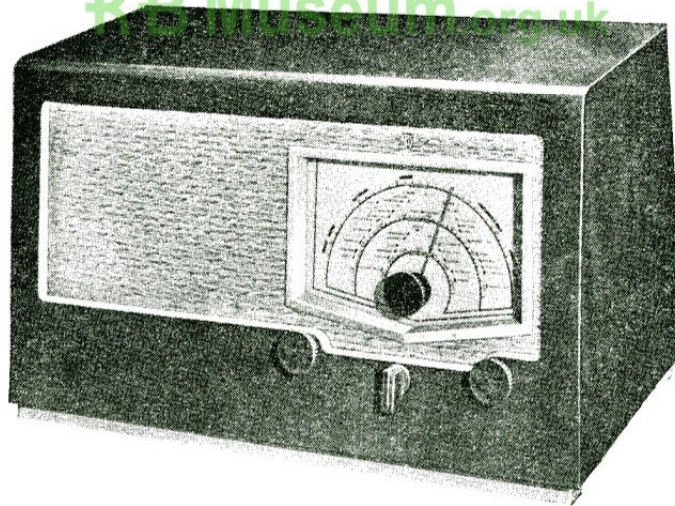
KENT

MODEL  
AR 20



## SERVICE DATA

ISSUED APRIL, 1946



### DESCRIPTION

**GENERAL.** The K-B Model AR 20 is a 4-valve and rectifier superheterodyne receiver for operation on A.C. power supplies 100-160 and 190-250 volts 40-60 c/p.s.

**WAVE RANGE.** Three bands covering the normal broadcast frequencies :—

Long Wave	-	-	750-2,000 metres	400-150 kc/s
Medium Wave	-	-	195-550 metres	1,538-545 kc/s
Short Wave	-	-	17.6-53.5 metres	17.05-5.6 mc/s

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

V 1	Frequency Changer	-	-	BRIMAR	6K8G
V 2	I.F. Amplifier	-	-	"	6K7G
V 3	Double Diode Triode	-	-	"	6Q7G
V 4	Output Pentode	-	-	"	6V6G
V 5	Rectifier	-	-	"	5Z4G

**CONSUMPTION.** The total power consumption is 49 watts.

**OUTPUT.** The output stage delivers 3.2 watts to a 6" permanent magnet moving coil Loudspeaker.

**GRAMOPHONE PICK-UP.** A Gramophone pick-up may be connected to the socket at the rear of the chassis. When fitting the special plug provided to the pick-up, the earth lead is inserted into the narrow pin. No external volume or tone controls are required.

**CABINET.** A strongly-constructed veneered plywood Cabinet. The overall dimensions are approximately 19" x 11" x 10".

**REMOVAL OF CHASSIS.** Firstly, remove the four knobs.

Remove Dial Lamp holder from the top of Scale Assembly.

Extract Loudspeaker plug from Chassis.

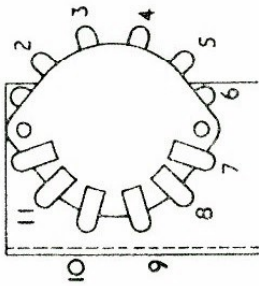
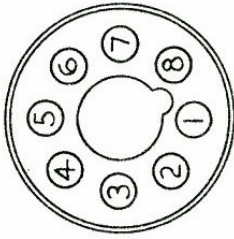
Unscrew the four Chassis bolts from the underside of the Cabinet.

# MODEL AR 20



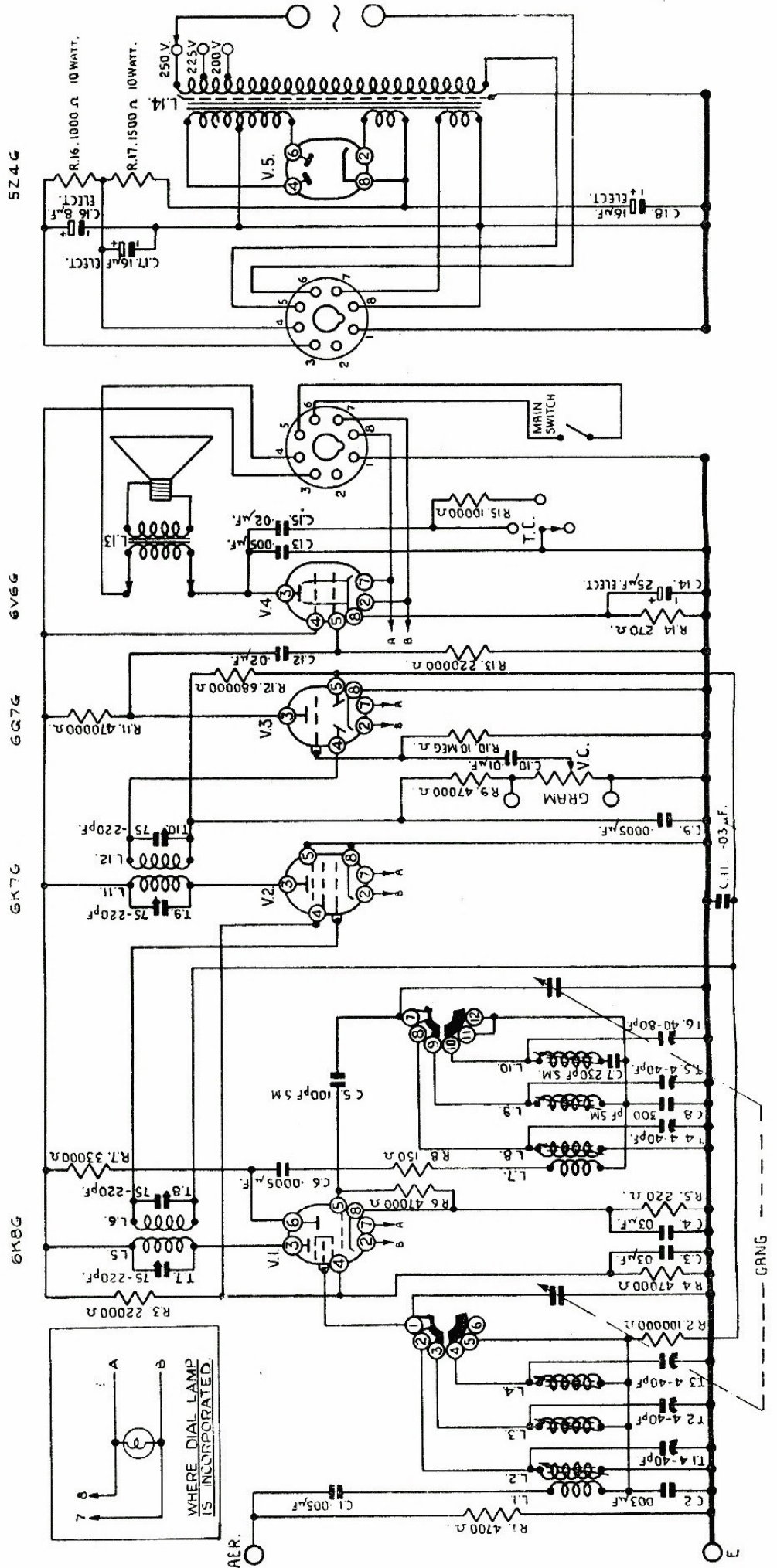
## OCTAL VALVE BASE

VIEWED FROM  
UNDERNEATH THE  
CHASSIS



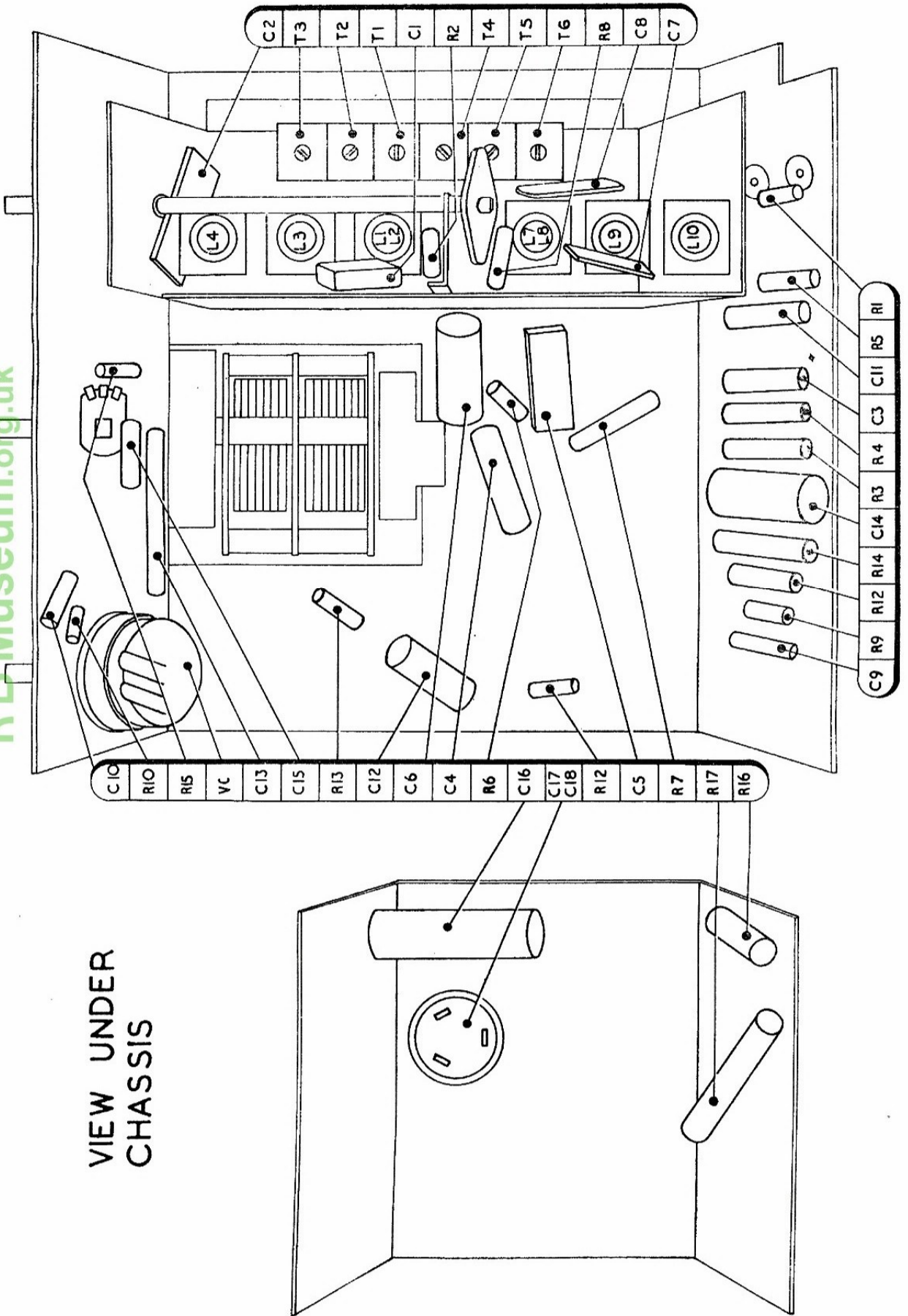
### WAVE RANGE SWITCH CONTACTS

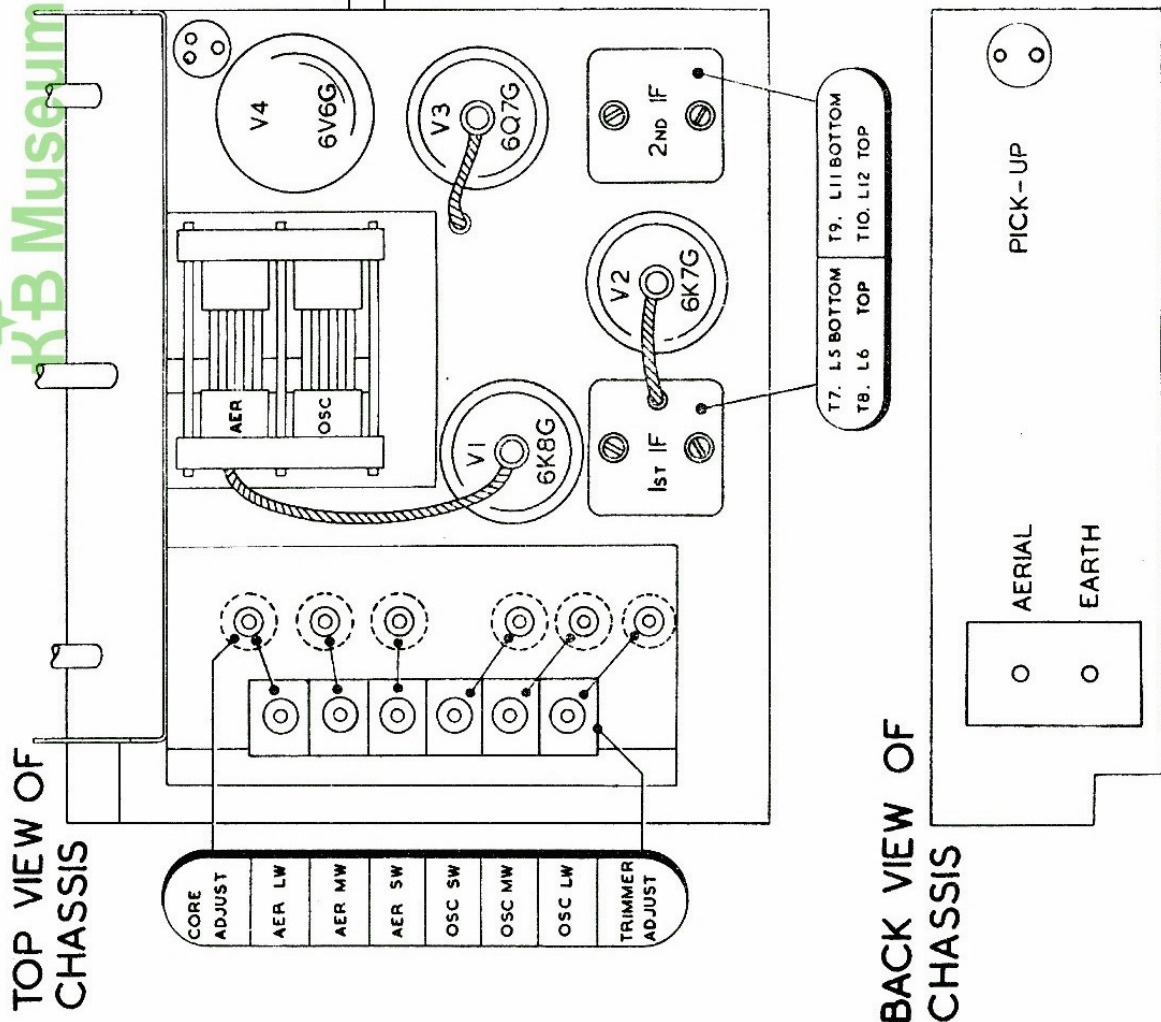
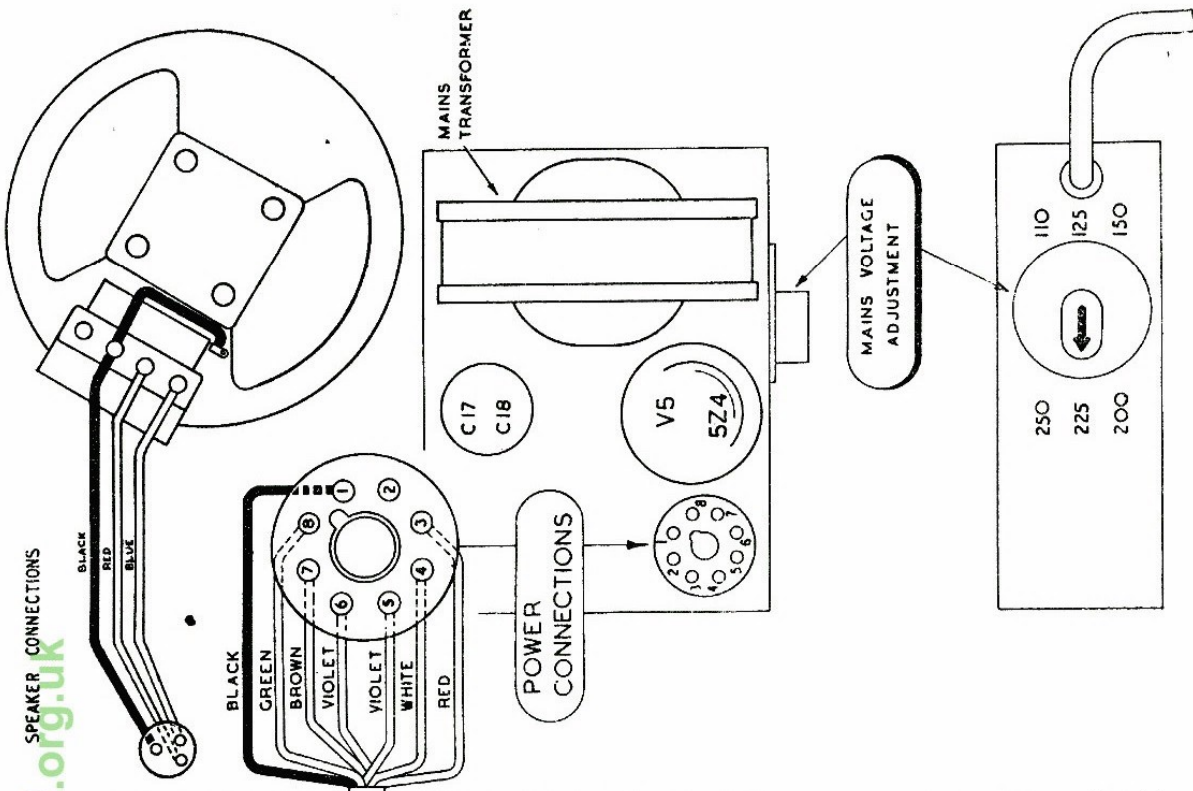
SWITCH POSITION	CONTACTS CONNECTED (6 NOT USED)
SHORT WAVE	1 to 2, 3, 4, 5 to 6, 7 to 8, 9, 10, 11 to 12
MEDIUM WAVE	1 to 3, 4, 5 to 6, 7 to 9, 10, 11 to 12
LONG WAVE	1 to 4, 5 to 6, 7 to 10, 11 to 12



KTB Museum.org.uk

VIEW UNDER  
CHASSIS





# ALIGNMENT CHART FOR AR 20

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

*Operation	Alignment of	Connect Signal Gen. to	Inject Signal via	Adjust Input Signal to	Set Wave Band Switch to	Set Tuning Pointer to	To be adjusted for maximum output	The oscillator operates at a higher frequency than the input signal on all bands. The tuning condenser should be rocked slightly for maximum gain while finally adjusting the R.F. and aerial trimmers. The operation for each band should be successively repeated until scale accuracy and maximum sensitivity have been attained.
1	I.F.	Grid of 6K8G	.1mfd. Standard Dummy Aerial	472 kc/s	M.W.	Extreme end of Scale	T9, T10, T7, T8	
2	M.W.	Aerial	"	600 kc/s	"	Cond. Max. 500 M.	Cores of L9, L3,	
3	"	"	"	1,400 kc/s	"	214 M. Spot	T5, T2	
4	L.W.	"	"	175 kc/s	L.W.	1,714 M. Spot	Cores of L10, L4	
5	"	"	"	350 kc/s	"	856 M. Spot	T6, T3	
6	M.W. Check	"	"	600 kc/s	M.W.	500 M.	Cores of L9, L3	
7	"	"	400 $\Omega$ non-inductive Resistor	1,400 kc/s	"	214 M. Spot	T5, T2	
8	S.W.	"	"	6 mc/s	S.W.	50 M.	Cores of L8, L2	
9	"	"	"	15 mc/s	"	20 M.	T4, T1	



## IMPORTANT

This Receiver uses **BRIMAR Valves** where specified and was designed around them. Its performance will be impaired unless **BRIMAR Valves** of the correct types are used when replacements are needed.

## VOLTAGE CHART AR 20

Valve	Function	Volts measured between SOCKET and CHASSIS									
		1	2	3	4	5	6	7	8		
6K8G	Frequency Changer	—	6.3★	212	77	—	109	—	—	1.5	—
6K7G	I.F. Amplifier	—	6.3★	212	77	—	—	—	—	—	—
6Q7G	2nd Det. AVC & LF	—	6.3★	55	0	—	—	—	—	—	—
6V6G	D'ble Diode Triode	—	6.3★	211	212	—	—	—	—	9.4	—
5Z4G	Output Pentode Rectifier	—	—	—	321★	—	—	—	—	—	—
	Voltage Across Output Transformer Primary	...	...	...	L13	24 volts	...	...	...	...	★ Indicates A.C. voltages measured on rectifier type meter. All D.C. voltages measured on 1,000 ohms per volt meter.
"	" Smoothing Resistor	...	...	...	R17	150 volts	...	...	...	...	
"	"	...	...	...	R16	28 volts	...	...	...	...	
"	Current through	...	...	...	R17	50mA.	...	...	...	...	
"	"	...	...	...	R16	17mA.	...	...	...	...	
"	" Mains Transformer Primary	...	...	...	—	215mA.	...	...	...	...	

**SPARES AR20**  
ALWAYS QUOTE PART No. WHEN ORDERING SPARES

Components	Part No.	List Price	Components	Part No.	List Price
		each			each
Aerial Panel ... ..	59/194		Loudspeaker Silk ... ..		
Cabinet ... ..	59/220		Mains Transformer ... ..	59/85	
„ Back ... ..	59/222		Output Transformer ... ..		
<b>COILS :—</b>			Pilot Lamp, 8 volt ... ..		
L.W. Aerial, L1, L2 ... ..	59/24		Pick-up Panel ... ..	59/192	
Oscillator, L7, L8 ... ..	59/26		Pointer Assembly ... ..	59/196	
M.W. Aerial, L3 ... ..	59/21		Scale ... ..	59/200	
Oscillator, L9 ... ..	59/23		Scale Window ... ..	58/202	
S.W. Aerial, L4 ... ..	58/15		Tone Switch ... ..	92025/C	
Oscillator, L10 ... ..	58/17		Trimmer Strip ... ..	59/189	
Coil Unit ... ..	59/30		Valve Can ... ..	80420	
<b>CONDENSERS :—</b>			Voltage Tap Plug... ..	A83060/A	
Electrolytic 8 Mfd. ... ..	KEM32/C		Volume Control ... ..	80610/F	
„ 16 + 16 Mfd. ... ..	KEM41/C		Wave-band Switch Bank ... ..	56004	
	or KE27/T		Wave-band Switch Spindle ... ..	59/199	
Gang Condenser (twin) ... ..	58/210				
I.F. Transformer complete, 1st ... ..	59/50				
„ „ „ 2nd ... ..	59/51				
Iron Dust Core ... ..	77015				
Knobs, Tuning Control... ..	81011/E				
Knob, Tone Switch ... ..	59/195				
Lampholder ... ..					
Loudspeaker, complete ... ..	59/250/1				

### MEMORANDA

THIS SPACE WILL BE FOUND USEFUL BY THE SERVICE ENGINEER FOR ANY NOTES HE REQUIRES TO MAKE.

