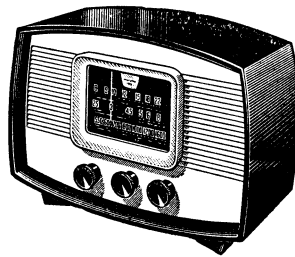


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# MURPHY SERVICE INSTRUCTIONS



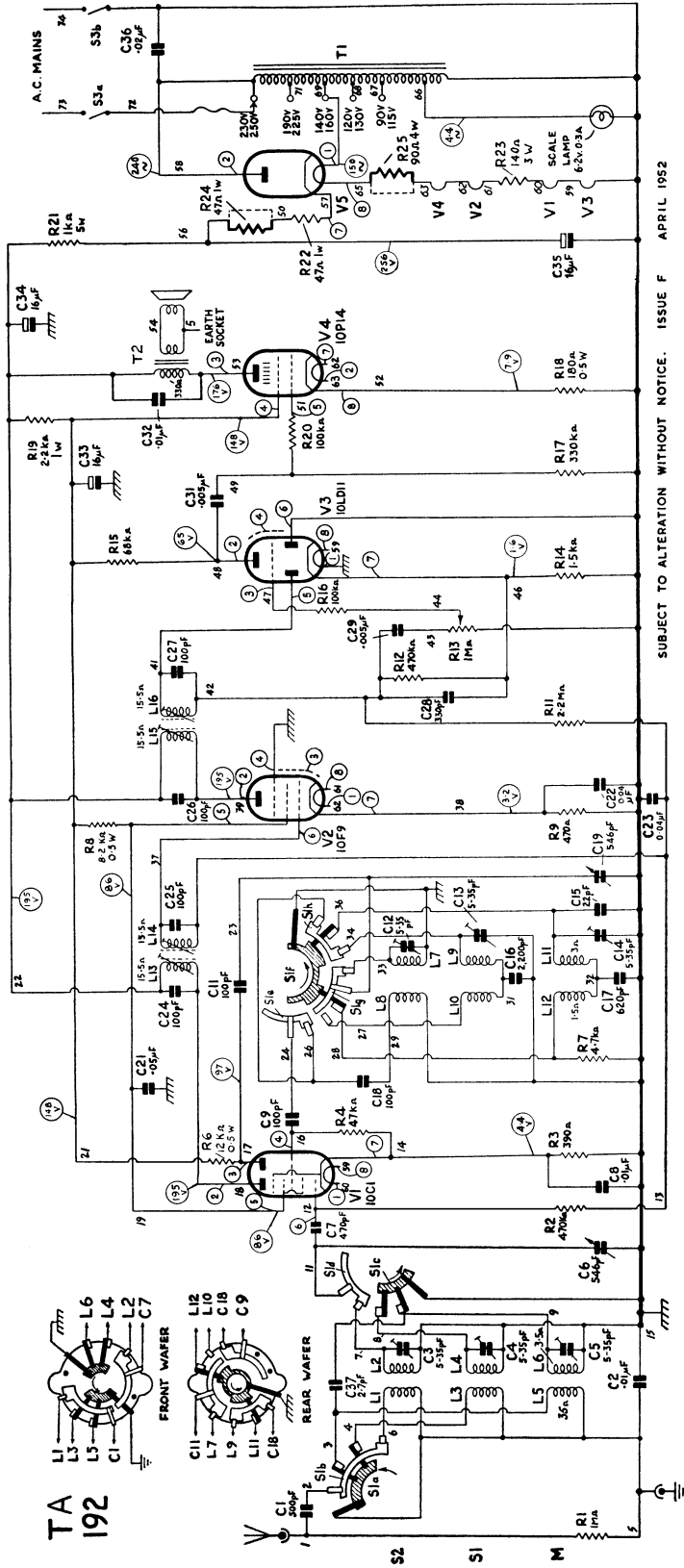
## SPECIFICATION

MAINS SUPPLY:	90-160 and 190-250 volts a.c., 40-100 c/s							
CONSUMPTION:	38 watts (approx.)							
WAVE BANDS:	<table> <tbody> <tr> <td rowspan="3" style="font-size: 3em; vertical-align: middle;">{</td> <td>Medium:</td> <td>535-1630 Kc/s (560-185 metres)</td> </tr> <tr> <td>S1:</td> <td>2.5-8.2 Mc/s (120-36.6 metres)</td> </tr> <tr> <td>S2:</td> <td>8.0-22.5 Mc/s (37.5-13.33 metres)</td> </tr> </tbody> </table>	{	Medium:	535-1630 Kc/s (560-185 metres)	S1:	2.5-8.2 Mc/s (120-36.6 metres)	S2:	8.0-22.5 Mc/s (37.5-13.33 metres)
{	Medium:		535-1630 Kc/s (560-185 metres)					
	S1:		2.5-8.2 Mc/s (120-36.6 metres)					
	S2:	8.0-22.5 Mc/s (37.5-13.33 metres)						
INTERMEDIATE FREQUENCY:	470 Kc/s							
VALVES:	Ediswan-Mazda 10C1, 10F9, 10LD11, 10P14, U404 or Mullard UY41							
SCALE LAMP:	6.2 volts, 0.3 amp. (M.E.S.)							
SPEECH COIL IMPEDANCE:	3 ohms							
CABINET DIMENSIONS:	14½ in. (37 cms.) wide, 10¼ in. (26 cms.) high, 7¼ in. (18.5 cms.) deep							
WEIGHT:	12 lb. (5.5 kg.)							

*Issued by*

**MURPHY RADIO LTD · WELWYN GARDEN CITY  
HERTS · ENGLAND PHONE: WELWYN GARDEN 800**

**FOREIGN TELEGRAMS AND CABLES: RADMURPHY, LONDON**



The switch wafers are drawn as seen from the rear of the receiver. The black contacts and inner rotors are on the hidden sides of the wafers. Blank positions and anchoring tags are shown by a spot. The Waveband Switch is shown in the S2 position; rotate anti-clockwise for S1 and M.

When measuring the voltages, the receiver was switched to the M band, with no signal input. A 20,000 Ω/V meter was used and the readings are given in the large circles on the diagram.

The valve pin numbers are shown in the small circles. Component terminals and connecting leads are identified by test point numbers which correspond with those appearing on the chassis drawings.

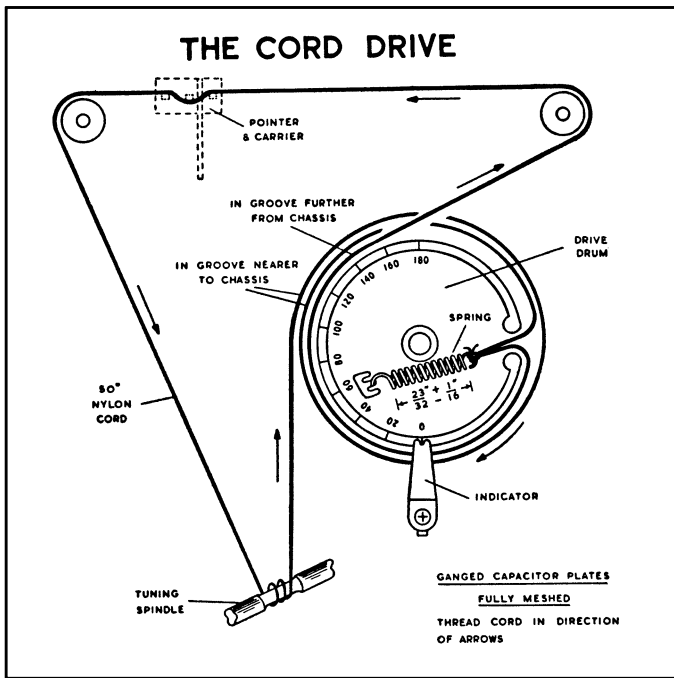
Coil resistances are omitted where the values are less than one ohm.

NOTE: L5 may be a low inductance winding in which case C37 (2.7 pF) is not fitted between points 3 and 9 on the wave-band switch.

SUBJECT TO ALTERATION WITHOUT NOTICE. ISSUE F APRIL 1952

V5 { U404 (EDISWAN-MAZDA) -----  
UY41 (MULLARD) -----

### THE CORD DRIVE

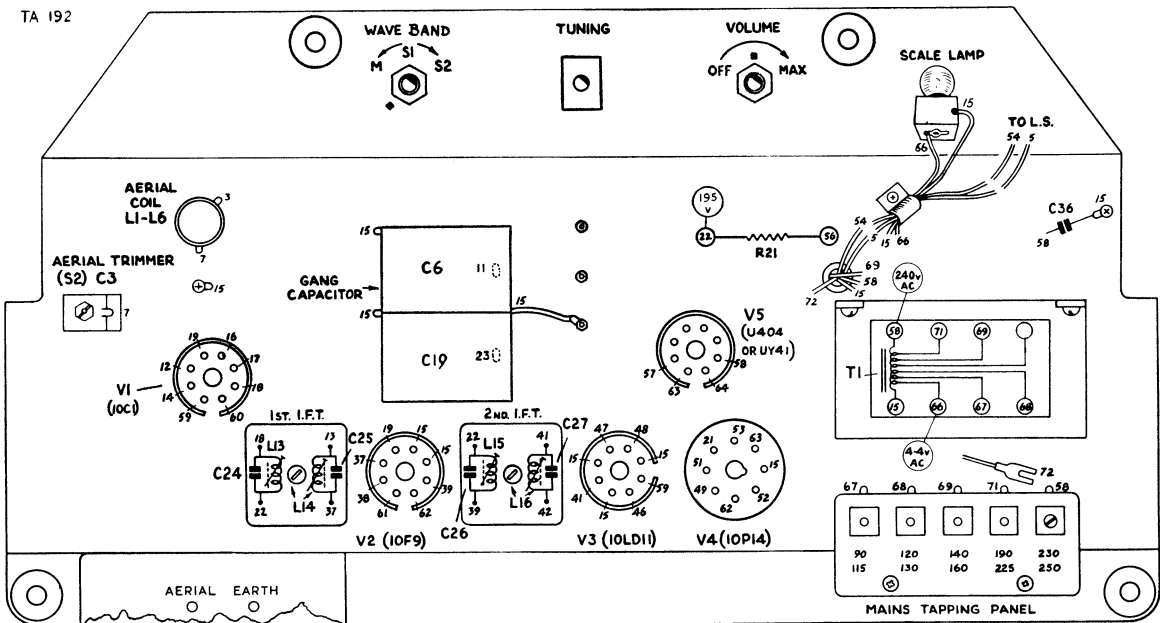


### PARTS LIST ABBREVIATIONS

- cer. — ceramic
- elec. — electrolytic
- i.s.tub. — insulated sealed tubular (metal cased)
- m.tub. — metallized paper tubular
- p.s.m. — protected silvered mica
- tub. — paper tubular
- v.w. — voltage working
- w.w. — wire wound

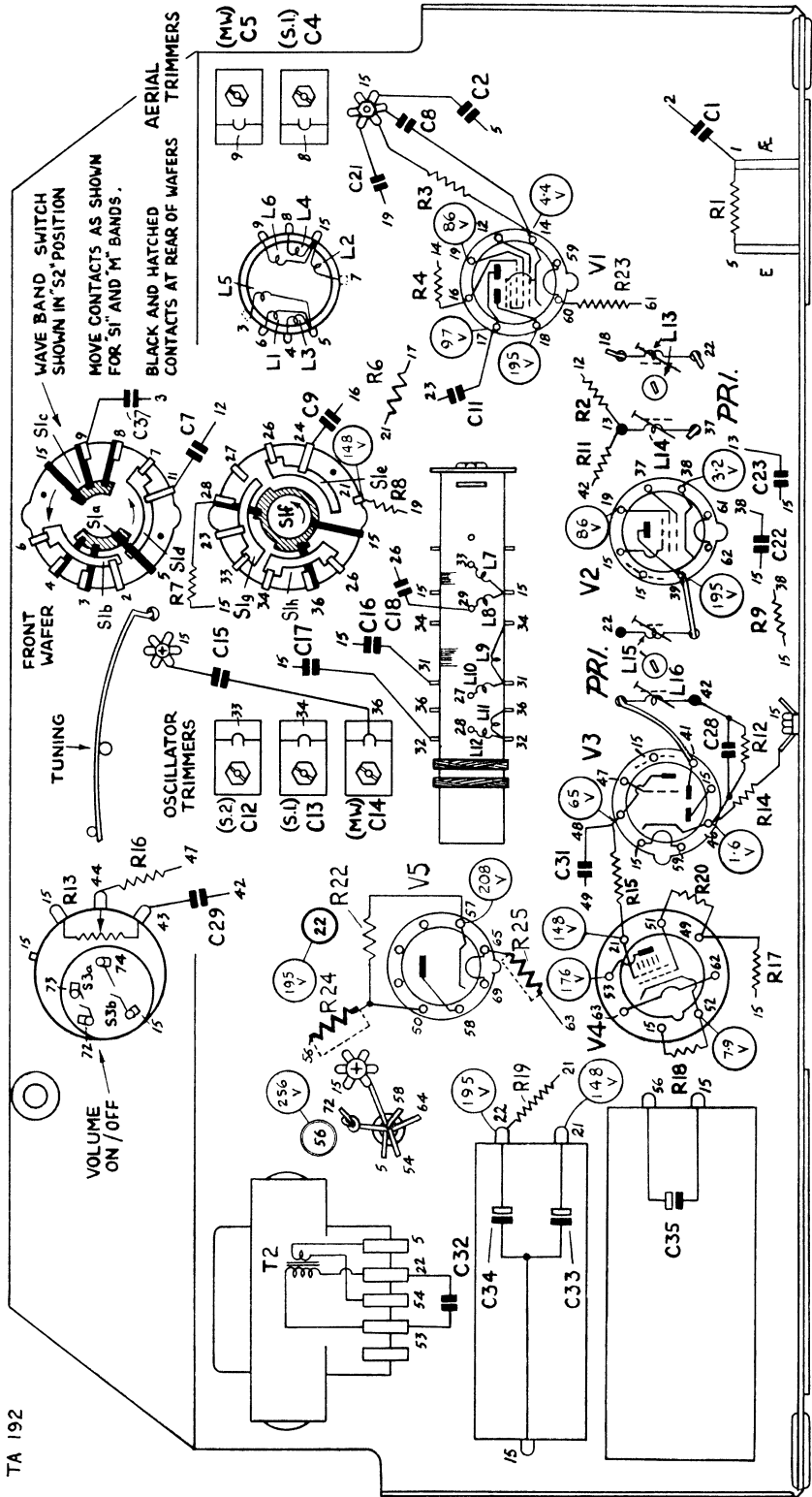
CAPACITORS	3		24	25	6	19	26		27						36	C
INDUCTORS		1-6	13	14				15	16							L
RESISTORS												21				R

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The layout of the top of the chassis

CAPACITORS	33	32	34	35		12	13	14	29	31		15	17	16	18	22	23	7	37	9	11	21	8	2	4	C
INDUCTORS						12	13	14				10	9	8	14											L
RESISTORS					19	18	24	17	25	22	20	13	16	9	7	8	11	6	4	23	1	3				R
MISC.					T1		S3	V4				V3				S1a-S1h	V2						VI			



The layout of the underside of the chassis

# CIRCUIT ALIGNMENT

**Output reading.** Connect an output meter to the loudspeaker speech coil. Turn the volume control to maximum output. Make all adjustments for maximum output. Adjust the signal generator attenuator so that the output does not exceed 180mW (0.7V).

**Drive drum setting.** Check that the ganged capacitor plates are fully meshed (i.e. maximum capacitance) when 0° on the drive drum registers with the "V" on the indicator.

**Tuning pointer adjustment.** The pointer should register with the

spots at the left of the tuning scale when the ganged capacitor plates are fully meshed.

**Replacement s.w. coils.** The inductance of the tuned windings of replacement S band aerial and oscillator coils may be adjusted after fitting as follows. Refer to the alignment table and where it states "No Adjustment", adjust the spacing of the end turns of the S band aerial and oscillator coils. Readjust the trimmers at the h.f. end of the wave band. Make final adjustments to the coils and then seal the windings with wax.

## CIRCUIT ALIGNMENT TABLE

*Note: On all wave bands the local oscillator frequency is higher than the signal frequency*

CIRCUIT	NOTES	SIG. GEN. FREQUENCY	SIG. GEN. TERMINATION	CONNECT SIG. GEN. TO	DRIVE DRUM SETTING	ADJUSTMENTS
2nd i.f.t.	Unscrew sec. core (top of can) before starting adjustments	470 Kc/s	Via 0.01 μF capacitor	V2 signal grid (pin 6)	0° M Band	L15 (pri.) under chassis L16 (sec.) top of can DO NOT RE-ADJUST PRI. CORE
1st i.f.t.	As above	As above	As above	V1 signal grid (pin 6)	As above	L13 (pri.) under chassis L14 (sec.) top of can DO NOT RE-ADJUST PRI. CORE
M		1363.6 Kc/s (220 m.)	Dummy aerial	Aerial socket	154°	M osc. trimmer (C14) M ae. trimmer (C5)
		600 Kc/s (500 m.)	As above	As above	29°—34°	No adjustment
S1	Set osc. trimmer to lower capacitance peak	7.25 Mc/s (41.4 m.)	As above	As above	162°	S1 osc. trimmer (C13) S1 ae. trimmer (C4)
		3.0 Mc/s (100 m.)	As above	As above	44°	No adjustment
S2	As above	17.8 Mc/s (16.85 m.)	As above	As above	142°	S2 osc. trimmer (C12) S2 ae. trimmer (C3)
		9.6 Mc/s (31.25 m.)	As above	As above	43°	No adjustment

## PARTS LIST (Electrical Components)

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS	PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
57773	C1	500 pF	25%, m.tub., 300 v.w.a.c.	26821	R9	470 $\Omega$	20%, 0-4W
51766	C2	0-01 $\mu$ F	20%, i.s.tub., 275 v.w.a.c.	27525	R11	2-2 M $\Omega$	20%, 0-4W
37480	C3	5-35 pF	trimmer, S2 ae.	27397	R12	470 K $\Omega$	20%, 0-4W
37480	C4	5-35 pF	trimmer, S1 ae.	52776	R13	1 M $\Omega$	volume control with switch
37480	C5	5-35 pF	trimmer, M ae.	26917	R14	1-5 M $\Omega$	20%, 0-4W
48504	C6	546 pF	ganged capacitor, ae. section	27237	R15	68 K $\Omega$	20%, 0-4W
54083	C7	470 pF	20%, cer., 500 v.w.d.c.	27269	R16	100 K $\Omega$	20%, 0-4W
49447	C8	0-01 $\mu$ F	25%, m.tub., 150 v.w.d.c.	27365	R17	330 K $\Omega$	20%, 0-4W
54070	C9	100 pF	20%, cer., 500 v.w.d.c.	24653	R18	180 $\Omega$	10%, 0-5W
54070	C11	100 pF	20%, cer., 500 v.w.d.c.	26972	R19	2-2 K $\Omega$	20%, 1W
37480	C12	5-35 pF	trimmer, S2 osc.	27269	R20	100 K $\Omega$	20%, 0-4W
37480	C13	5-35 pF	trimmer, S1 osc.	51051	R21	1 K $\Omega$	5%, 5W, w.w.
37480	C14	5-35 pF	trimmer, M osc.	40460	R22	47 $\Omega$	20%, 1W, w.w.
23603	C15	22 pF	10%, p.s.m., 350 v.w.d.c.	51062	R23	140 $\Omega$	5%, 3W, w.w.
23656	C16	2200 pF	10%, p.s.m., 350 v.w.d.c.	26653	R24	47 $\Omega$	20%, 0-75W
28241	C17	620 pF	1%, p.s.m., 350 v.w.d.c.	51057	R25	90 $\Omega$	5%, 4W, w.w.
54070	C18	100 pF	20%, cer., 500 v.w.d.c.				
48504	C19	546 pF	ganged capacitor, osc. section				
41403	C21	0-05 $\mu$ F	20%, tub., 350 v.w.d.c.				
49454	C22	0-04 $\mu$ F	25%, m.tub., 150 v.w.d.c.				
49454	C23	0-04 $\mu$ F	25%, m.tub., 150 v.w.d.c.				
52630	C24	100 pF	5%, p.s.m., 350 v.w.d.c.				
52630	C25	100 pF	5%, p.s.m., 350 v.w.d.c.				
52630	C26	100 pF	5%, p.s.m., 350 v.w.d.c.				
52630	C27	100 pF	5%, p.s.m., 350 v.w.d.c.				
49460	C28	330 pF	10%, m.tub., 600 v.w.d.c.				
49456	C29	0-005 $\mu$ F	25%, m.tub., 150 v.w.d.c.				
50962	C31	0-005 $\mu$ F	20%, i.s.tub., 500 v.w.d.c.				
41419	C32	0-01 $\mu$ F	20%, tub., 1000 v.w.d.c.				
46535	{ C33	{ 16 $\mu$ F	+ 50% -20%, elec, 350 v.w.d.c.				
	{ C34	{ 16 $\mu$ F					
46510	C35	16 $\mu$ F	+ 50% -20%, elec, 350 v.w.d.c.				
41423	C36	0-02 $\mu$ F	20%, tub., 750 v.w.d.c.				
52143	C37	2-7 pF	20%, cer., 500 v.w.d.c.				
27461	R1	1 M $\Omega$	20%, 0-4W				
27397	R2	470 K $\Omega$	20%, 0-4W				
24773	R3	390 $\Omega$	10%, 0-4W				
27205	R4	47 K $\Omega$	20%, 0-4W				
25357	R6	12 K $\Omega$	10%, 0-5W				
27013	R7	4-7 K $\Omega$	20%, 0-4W				
25293	R8	8-2 K $\Omega$	10%, 0-5W				
PART NO.	CIRCUIT NO.	RESISTANCE (D.C.)	REMARKS	PART NO.	CIRCUIT NO.	RESISTANCE (D.C.)	REMARKS
				59491	L1	—	S2 ae. coil
					L2	—	
					L3	—	S1 ae. coil
					L4	—	
					L5	35 $\Omega$	M ae. coil
					L6	3-5 $\Omega$	
					L7	—	S2 osc. coil
					L8	—	
				52480	L9	—	S1 osc. coil
					L10	—	
					L11	3 $\Omega$	M osc. coil
					L12	1-5 $\Omega$	
				52219	L13	15-5 $\Omega$	pri. 1st i.f.t.
					L14	15-5 $\Omega$	
				52219	L15	15-5 $\Omega$	pri. 2nd i.f.t.
					L16	15-5 $\Omega$	
				52940	T1	42 $\Omega$ total	mains transformer
				52478	T2	330 $\Omega$	sec. output transformer

## PARTS LIST (Mechanical Components)

PART NO.	DESCRIPTION	REMARKS	PART NO.	DESCRIPTION	REMARKS
57431	Back	for cabinet	16880	Lamp	6-2V, 0-3A
57424	Bracket	for lampholder	56453	Lampholder	
57483	Cabinet	not for Portugal	51813	Loudspeaker	
59813	Cabinet	Portugal only	53694	Panel, mains tapping	
48506	Channel, rubber (4)	for scale fixing	37974	Plug	for aerial
53019	Clamp	for C33, C34, C35	37975	Plug	for earth
50062	Clamp	for aerial coil	57932	Pointer and carrier	
53453	Clamp	for C1			
2033/5	Cord, for drive	50 in. length (127 cms.)	57487	Scale, tuning	general
			57486	Scale, tuning	Africa only
53774	Drive drum	for cord drive	59814	Scale, tuning	Portugal only
57484	Escutcheon	not for Portugal	10413	Screw, grub (3)	for control knobs
59574	Escutcheon	Portugal only	103267	Screw (2)	for chassis fixing
57422	Guide rail	for pointer	19642	Screw, grub	for drive drum
			57419	Spindle, tuning	
57418	Indicator	for cord drive	19460	Spring	for cord drive
			51171	Spring	for tuning spindle
58715	Knob	for on/off, volume	57699	Switch	wave band
53035	Knob	for tuning control	40134	Tag (2)	for mains tapping panel
57485	Knob	for wave band switch	40135	Terminal, spade	for mains adjustment
57489	Label, for back	general	51451	Valve holder, B8A (4)	
57491	Label, for back	India	5687	Valve holder, I.O.	
57514	Label, for back	Africa	34588	Washer, felt (3)	for control knobs