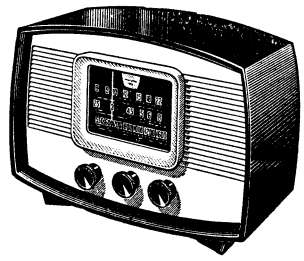
MURPHY SERVICE INSTRUCTIONS



SPECIFICATION

MAINS SUPPLY:		90–160 and 190–250 volts, a.c., 40–100 c/s
CONSUMPTION:		38 watts (approx.)
WAVE BANDS:	Long:	146–310 Kc/s (2050–967 metres)
	Medium:	520–1630 Kc/s (576–184 metres)
	Short:	5·9–18 Mc/s (51–16·7 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 Kgs.)

Issued by

MURPHY RADIO LTD · WELWYN GARDEN CITY

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FOREIGN TELEGRAMS AND CABLES: RADMURPHY, LONDON

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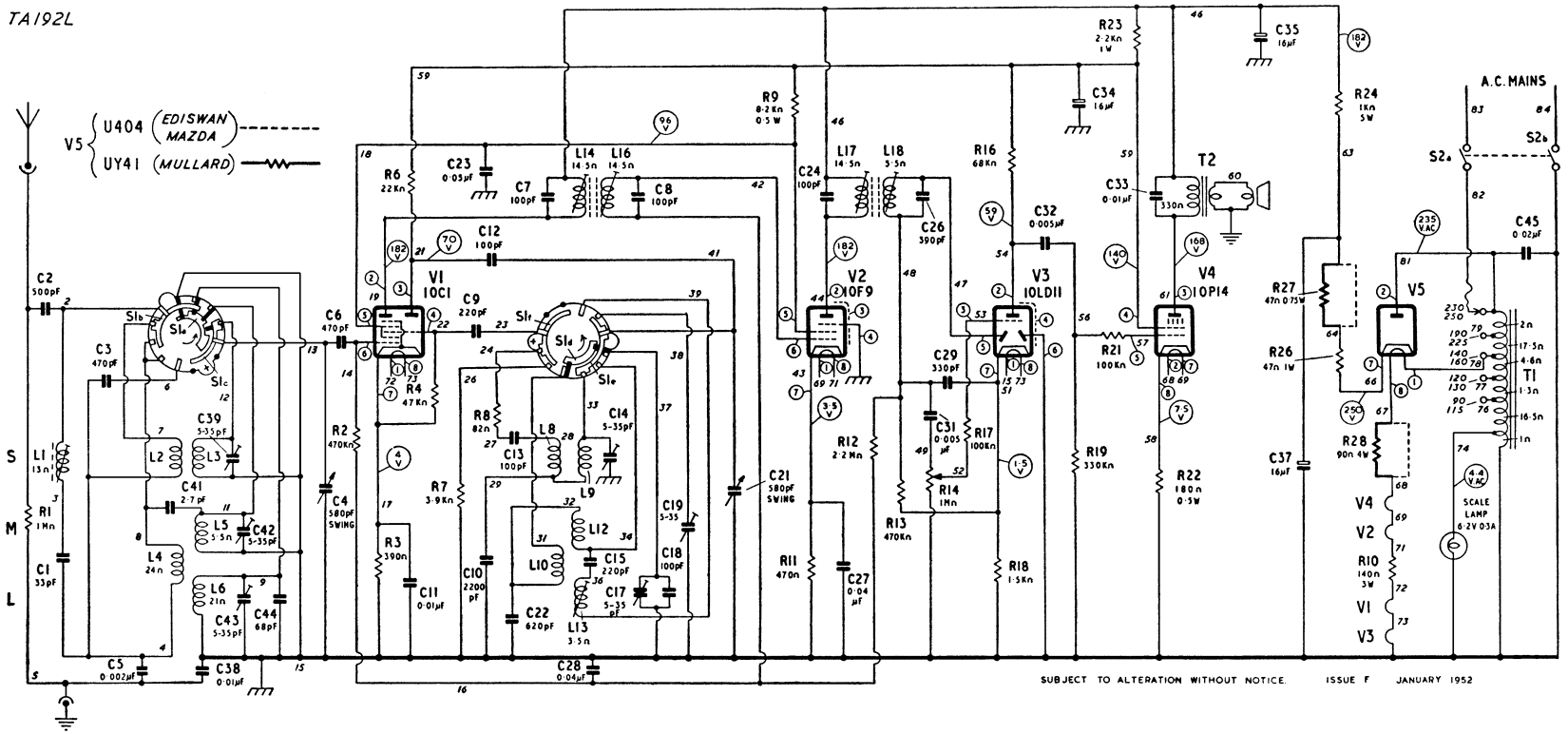


The switch wafers are drawn as seen from the rear of the receiver, and the lugs marked with a cross are the nearer to the chassis. The black contacts and inner rotors are on the hidden sides of the wafers. Blank positions and anchoring tags are shown by a spot.

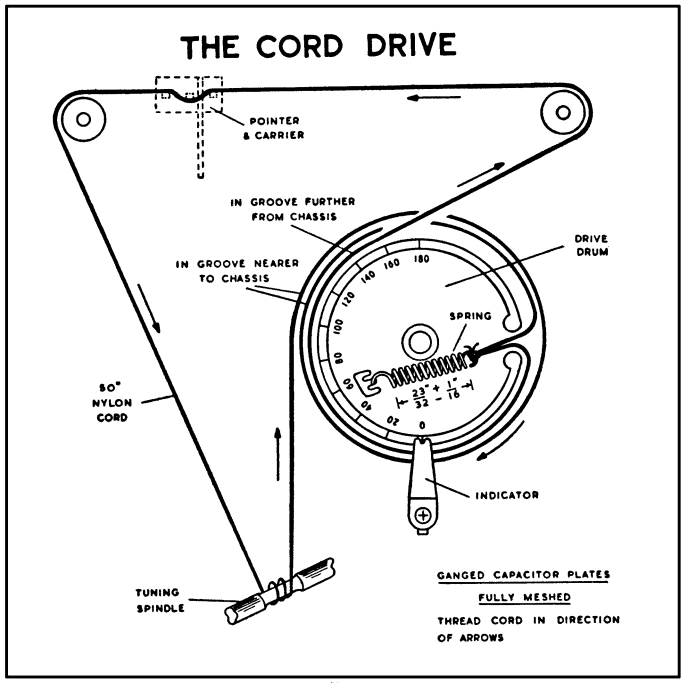
The Waveband Switch is shown in the S position; rotate anti-clockwise for M and L.

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.

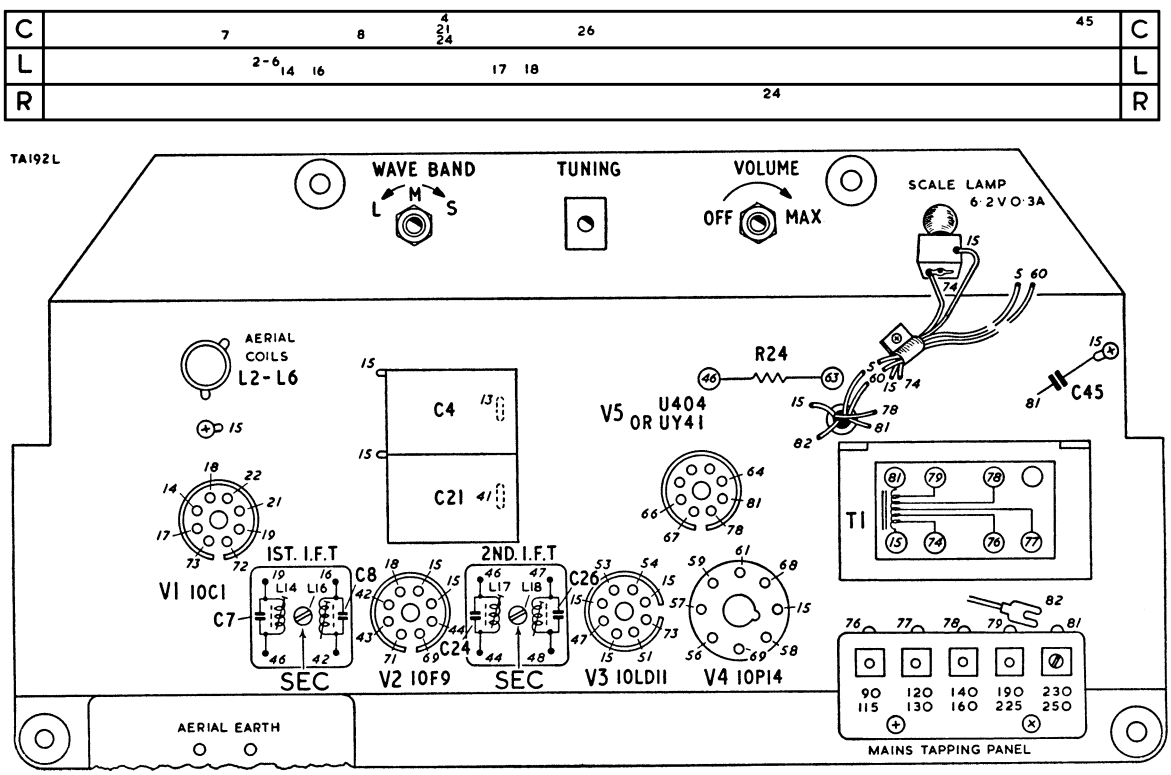
Component terminals and connecting leads are identified by test point numbers which correspond with those appearing on the chassis drawings.

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



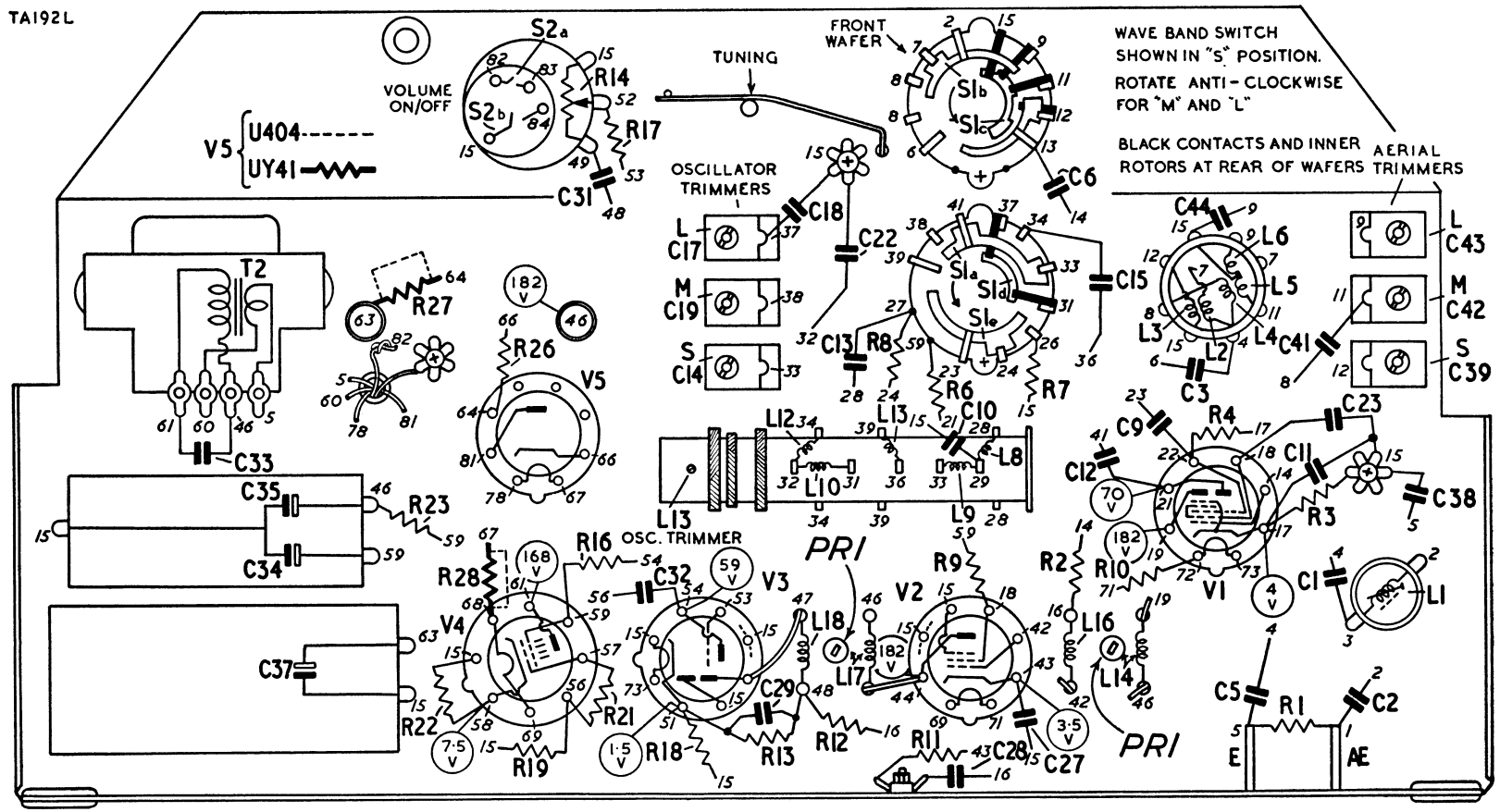
PARTS LIST ABBREVIATIONS

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



The layout of the top of the chassis

C	33 35 34 37 — 31 — 32 17 19 14 — 29 18 13 22 — 10 28 27 — 6 15 12 9 — 3 44 5 — 11 41 1 23 — 2 38 43 39 42	C
L	12 18 10 17 13 — 9 8 — 16 — 3 14 2 4 5 6 — 1	L
R	23 22 27 — 26 19 — 16 28 — 14 21 17 18 — 13 — 12 — 8 — 11 — 6 9 — 7 2 — 10 — 4 — 1 3	R
MISC	T2 — S2b S2a V4 — V5 — V3 — V2 — S1b S1a S1c S1d S1e — V1	MISC



The layout of the underside of the chassis

Note: The long inner contact on the front wafer is connected to the chassis (t.p. 15) and not to test point 4 as shown.

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	L17 (pri.) under chassis L18 (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	L14 (pri.) under chassis L16 (sec.) top of can DO NOT RE-ADJUST PRI. CORE
L	Repeat these adjustments until there is no further improvement	176·5 Kc/s (1700 m.)	Dummy aerial	Aerial socket	62°	L osc. coil (L13)
		300 Kc/s (1000 m.)	As above	As above	168°	L osc. trimmer (C17) L ae. trimmer (C43)
M		1363·6 Kc/s (220 m.)	As above	As above	155°	M osc. trimmer (C19) M ae. trimmer (C42)
		600 Kc/s (500 m.)	As above	As above	37°—39°	No adjustment
S	Set osc. trimmer to lower capacitance peak	15·2 Mc/s (19·75 m.)	As above	As above	156°	S osc. trimmer (C14) S ae. trimmer (C39)
		6·7 Mc/s (44·8 m.)	As above	As above	34°—36°	No adjustment

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PARTS LIST (Electrical Components)

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
28299	C1	33 pF	2%, p.s.m., 350 v.w.d.c.
57773	C2	500 pF	25%, m.tub., 300 v.w.a.c.
28243	C3	470 pF	2%, p.s.m., 350 v.w.d.c.
55079	C4	580 pF swing	gang capacitor, ae. section
57774	C5	0·002 μF	20%, m.tub., 300 v.w.a.c.
54083	C6	470 pF	20%, cer., 500 v.w.d.c.
52630	C7	100 pF	5%, p.s.m., 350 v.w.d.c.
52630	C8	100 pF	5%, p.s.m., 350 v.w.d.c.
54074	C9	220 pF	20%, cer., 350 v.w.d.c.
23656	C10	2200 pF	10%, p.s.m., 350 v.w.d.c.
49447	C11	0·01 μF	25%, m.tub., 150 v.w.d.c.
54070	C12	100 pF	20%, cer., 500 v.w.d.c.
54070	C13	100 pF	20%, cer., 500 v.w.d.c.
37480	C14	5–35 pF	trimmer, S osc.
28223	C15	220 pF	2%, p.s.m., 350 v.w.d.c.
37480	C17	5–35 pF	trimmer, L osc.
23607	C18	100 pF	10%, p.s.m., 350 v.w.d.c.
37480	C19	5–35 pF	trimmer, M osc.
55079	C21	580 pF swing	gang capacitor, osc. section
28241	C22	620 pF	1%, p.s.m., 350 v.w.d.c.
41403	C23	0·05 μF	20%, tub., 350 v.w.d.c.
52630	C24	100 pF	5%, p.s.m., 350 v.w.d.c.
52633	C26	390 pF	5%, p.s.m., 350 v.w.d.c.
49454	C27	0·04 μF	25%, m.tub., 150 v.w.d.c.
49454	C28	0·04 μF	25%, m.tub., 150 v.w.d.c.
49460	C29	330 pF	10%, m.tub., 600 v.w.d.c.
49456	C31	0·005 μF	25%, m.tub., 150 v.w.d.c.
50962	C32	0·005 μF	20%, i.s.tub., 500 v.w.d.c.
41419	C33	0·01 μF	20%, tub., 1000 v.w.d.c.
46511	C34	16 μF	+50% —20 %
	C35	16 μF	elec., 350 v.w.d.c.
46510	C37	16 μF	+50% —20%, elec., 350 v.w.d.c.
51766	C38	0·01 μF	20%, i.s.tub., 275 v.w.d.c.
37480	C39	5–35 pF	trimmer, S ae.
52143	C41	2·7 pF	20%, cer., 350 v.w.d.c.
37480	C42	5–35 pF	trimmer, M ae.
37480	C43	5–35 pF	trimmer, L ae.
23606	C44	68 pF	10%, p.s.m., 350 v.w.d.c.
41423	C45	0·02 μF	20%, tub., 750 v.w.d.c.
27461	R1	1 MΩ	20%, 0·4W
27397	R2	470 KΩ	20%, 0·4W
24773	R3	390 Ω	10%, 0·4W
27205	R4	47 KΩ	20%, 0·4W
25445	R6	22 KΩ	10%, 0·4W
25157	R7	3·9 KΩ	10%, 0·4W
24517	R8	82 Ω	10%, 0·4W
25293	R9	8·2 KΩ	10%, 0·5W
51062	R10	140 Ω	5%, 3W, w.w.
26821	R11	470 Ω	20%, 0·4W
27525	R12	2·2 MΩ	20%, 0·4W
27397	R13	470 KΩ	20%, 0·4W
52776	R14	1 MΩ	v/c with switch
27237	R16	68 KΩ	20%, 0·4W
27269	R17	100 KΩ	20%, 0·4W
26917	R18	1·5 KΩ	20%, 0·4W
27365	R19	330 KΩ	20%, 0·4W
27269	R21	100 KΩ	20%, 0·4W
24653	R22	180 Ω	10%, 0·5W
26972	R23	2·2 KΩ	20%, 1W
51051	R24	1 KΩ	5%, 5W, w.w.
40460	R26	47 Ω	20%, 1W, w.w.
26653	R27	47 Ω	20%, 0·75W
51057	R28	90 Ω	5%, 4W, w.w.

PART NO.	CIRCUIT NO.	RESISTANCE (D.C.)	REMARKS
58976	L1	13 Ω	i.f. rejector
57723	L2	—	aerial coil
	L3	—	
	L4	24 Ω	
	L5	5·5 Ω	
	L6	21 Ω	
57572	L8	—	oscillator coil
	L9	—	
	L10	—	
	L12	—	
	L13	3·5 Ω	
58116	L14	14·5 Ω	pri. } 1st i.f.t.
	L16	14·5 Ω	sec. }
58117	L17	14·5 Ω	pri. } 2nd i.f.t.
	L18	5·5 Ω	sec. }
52940	T1	42 Ω Total	mains transformer
52478	T2	330 Ω	pri. } output transformer
		—	sec. }

PARTS LIST (Mechanical Components)

PART NO.	DESCRIPTION	REMARKS
57431	Back	for cabinet
57424	Bracket	for lampholder
57483	Cabinet	
48506	Channel, rubber (4)	for scale fixing
53019	Clamp	for C34, C35, C37
55897	Clamp	for oscillator coil
50062	Clamp	for aerial coil
57315	Clamping piece	for L1
2033/5	Cord, for drive	50 in. length (127 cms.)
53774	Drive drum	for cord drive
57484	Escutcheon	
57422	Guide rail	for pointer
57418	Indicator	for cord drive
58715	Knob	for On/Off, Volume Control
53035	Knob	for Tuning Control
57496	Knob	for Wave Band Switch
57498	Label	for back
16880	Lamp	6·2V, 0·3A
56453	Lampholder	
51813	Loudspeaker	
53694	Panel, mains tapping	
37974	Plug	for aerial
37975	Plug	for earth
57932	Pointer and carrier	
57497	Scale, tuning	
103267	Screw (2)	for chassis fixing
19642	Screw, grub	for drive drum
10413	Screw, grub (3)	for control knobs
57419	Spindle, tuning	
19460	Spring	for cord drive
51171	Spring	for tuning spindle
57571	Switch	wave band
40134	Tag (5)	for mains tapping panel
40135	Terminal, spade	for mains adjustment
51451	Valve holder, B8A (4)	
5687	Valve holder, I.O.	
34588	Washer, felt (3)	for control knobs
49910	Washer, cup (2)	for chassis fixing