

RESISTORS		Values	Locations
R1	V1 C.G. ...	1MΩ	G4
R2†	V1 osc. C.G. ...	33kΩ	G4
R3†	Osc. anode feed ...	22kΩ	F4
R4‡	Osc. stabilizer ...	150Ω	G3
R5¶	S.G. H.T. feed ...	39kΩ	F4
R6	V2 G.B. ...	680Ω	F4
R7	I.F. stopper ...	47kΩ	E4
R8	Volume control ...	500kΩ	D3
R9	V3 C.G. ...	10MΩ	E3
R10	A.G.C. decoupling ...	2.2MΩ	E4
R11	V3 anode load ...	470kΩ	E4
R12	V4 C.G. ...	470kΩ	E4
R13	V4 S.G. stopper ...	100Ω	E4
R14	V4 G.B. ...	270Ω	E4
R15	V5 surge limiter ...	100Ω	D4
R16	} H.T. smoothing ... {	150Ω	D4
R17		1kΩ	F3
R18	V4 G.B. ...	180Ω	—
R19	Brimistor CZ2 ...	707Ω*	—
R20	Heater ballast ...	150Ω	—
R21	} H.T. smoothing ... {	1kΩ	—
R22		50Ω	—
R23	} Scale lamp shunts... {	50Ω	—
R24		56Ω	—

* Tapped at 325Ω + 150Ω + 232Ω from R19.

† 47kΩ }
 ‡ 10kΩ } Values in A.C./D.C. model.
 ¶ 68Ω }
 ¶ 15kΩ }

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	} Aerial coupling coils {	2.5	F3
L2		30.0	A1
L3		—	F3
L4	} Aerial tuning coils {	2.0	A1
L5		35.0	A1
L6		—	G4
L7	} Oscillator tuning coils ... {	3.5	G4
L8		9.0	G4
L9		—	G4
L10	} S.W. osc. reaction... {	7.5	A2
L11		7.5	A2
L12	} 1st I.F. trans. {	7.5	B2
L13		7.5	B2
L14	} 2nd I.F. trans. {	7.5	B2
L15		7.5	B2
L16	} Speech coil ... {	2.5	—
L17		540.0	B1
T1	} O.P. trans. {	—	—
T2		—	—
S1-S11	} Mains trans. {	120.0	C2
S12		—	—
S13	} Waveband switches {	—	G3
S14		—	—
S15	} Mains sw., g'd R8 {	—	D3
S16		—	—

CAPACITORS		Values	Locations
C1	L.W. aerial shunt...	0.001 μ F	G3
C2	Aerial and earth isolators...	0.002 μ F	F4
C3	L.W. aerial trim...	0.01 μ F	G4
C4	S.W. aerial trim...	5pF	B1
C5	V1 C.G. ...	12pF	F3
C6	1st I.F. trans. tuning...	100pF	F4
C7	ing ...	75pF	A2
C8	V1 osc. C.G. ...	75pF	A2
C9	A.G.C. decoupling	100pF	G3
C10	S.W. osc. tracker...	0.05 μ F	F3
C11	M.W. osc. tracker...	0.0039 μ F	G3
C12	Osc. reaction coup.	450pF	G3
C13	S.G. decoupling ...	220pF	F4
C14	2nd I.F. trans. tuning...	0.05 μ F	F4
C15	ing ...	75pF	B2
C16	I.F. by-passes ...	75pF	B2
C17	A.F. coupling ...	100pF	E4
C18	I.F. by-pass ...	100pF	E4
C19	A.F. coupling ...	0.005 μ F	E3
C20	I.F. by-pass ...	220pF	E3
C21	A.F. coupling ...	0.01 μ F	E4
C22	Mains R.F. by-pass	0.05 μ F	D4
C23*	V4 cath. by-pass ...	25 μ F	E4
C24	Tone corrector ...	0.01 μ F	E4
C25	Speaker isolator ...	0.005 μ F	F4
C26*	H.T. smoothing ...	40 μ F	B1
C27*	H.T. smoothing ...	30 μ F	B1
C28*	H.T. smoothing ...	20 μ F	B1
C29†	S.W. aerial trim...	25pF	A2
C30†	Aerial tuning ...	438pF	A1
C31†	Oscillator tuning ...	438pF	A1
C32†	S.W. osc. trim...	25pF	A2
C33†	M.W. osc. trim...	40pF	G3
C34†	L.W. osc. trim...	40pF	G4
C35†	M.W. osc. tracker...	70pF	G3
C36†	L.W. osc. tracker...	120pF	G4
C37*	V4 cath. by-pass ...	25 μ F	—
C38	Tone corrector ...	0.02 μ F	—
C39	Speaker isolator ...	0.005 μ F	—
C40*	H.T. smoothing ...	40 μ F	—
C41*	H.T. smoothing ...	30 μ F	—
C42*	H.T. smoothing ...	20 μ F	—
C43	Mains R.F. by-pass	0.05 μ F	—

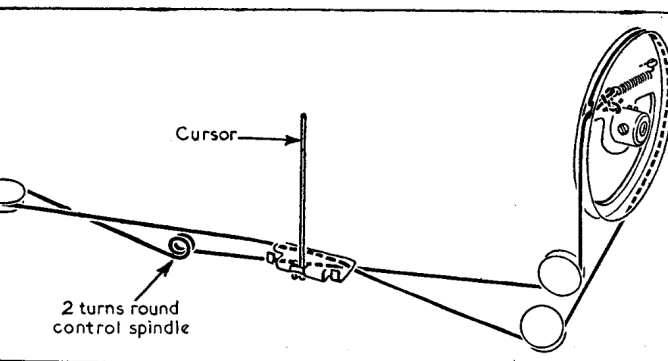
* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Aerial coupling coils	2.5	F3
L2	Aerial tuning coils	30.0	A1
L3	Aerial tuning coils	2.0	F3
L4	Aerial tuning coils	2.0	A1
L5	Aerial tuning coils	35.0	A1
L6	Oscillator tuning coils	3.5	G4
L7	Oscillator tuning coils	3.5	G4
L8	Oscillator tuning coils	9.0	G4
L9	S.W. osc. reaction...	—	G4
L10	1st I.F. trans. {Pri.	7.5	A2
L11	1st I.F. trans. {Sec.	7.5	A2
L12	2nd I.F. trans. {Pri.	7.5	B2
L13	2nd I.F. trans. {Sec.	7.5	B2
L14	Speech coil	2.5	—
T1	O.P. trans. {a	540.0	B1
T2	O.P. trans. {b	—	—
T1	Mains trans. {a	—	C2
T2	Mains trans. {b, total	120.0	—
S1-S11	Waveband switches	—	G3
S12	Mains sw., g'd R8	—	D3
S13	Mains sw., g'd R8	—	D3

CIRCUIT ALIGNMENT

Remove chassis from cabinet and position it on the bench so that all the core and trimmer adjustments are accessible. The receiver should be connected to the mains so that the chassis is at earth potential.

I.F. Stages.—Switch receiver to M.W. and turn gang to minimum capacitance. Connect output of signal generator, via an 0.05 μ F capacitor in each lead, to control grid (pin 6) of V1 and chassis. Feed in a 470 kc/s (638.3 m) signal and adjust the cores of L13 (location reference B2), L12 (E4), L11 (A2) and L10 (F4) for maximum output. Repeat these adjustments until no further improvement results.



Sketch of the tuning drive system, drawn as seen from the front of the chassis with the gang set at minimum capacitance.

(E4), L11 (A2) and L10 (F4) for maximum output. Repeat these adjustments until no further improvement results.

R.F. and Oscillator Stages.—As the tuning scale remains in the cabinet when the chassis is withdrawn, a substitute tuning scale must be made up and clipped to the scale backing plate. A sketch showing the positions of the calibration marks on the substitute scale appears in column 1, the measurements being given of the distances between the marks and the maximum capacitance setting of the cursor. When the chassis is finally replaced in its cabinet check that with the gang at maximum capacitance the cursor coincides with the dots at the high wavelength ends of the tuning scales.

S.W.—Switch receiver to S.W. and transfer signal generator leads to A and E sockets, using a 400 Ω series resistor in the "live" lead as dummy aerial. Tune receiver to 17 Mc/s, feed in a 17 Mc/s (17.65 m) signal and adjust C32 (A2) and C29 (A2) for maximum output. Feed in a 12 Mc/s (25 m) signal and check the calibration. Feed in a 6 Mc/s (50 m) signal and check the calibration. If a large error is found, greater than the tolerance margin indicated in the sketch of the substitute tuning scale, then tracker C11 should be checked.

L.W.—Switch receiver to L.W. and replace 400 Ω dummy aerial with a 200pF capacitor. Tune receiver to 857 m, feed in an 857 m (350 kc/s) signal and adjust C34 (G4) for maximum output while rocking the gang for optimum results. Tune receiver to 1,875 m, feed in a 1,875 m (160 kc/s) signal and adjust C36 (G4) for maximum output while rocking the gang for optimum results. Repeat these adjustments until no further improvement results. Feed in a 1,364 m (220 kc/s) signal and check calibration.

M.W.—Switch receiver to M.W., tune to 200 m, feed in a 200 m (1,500 kc/s) signal and adjust C33 (G3) for maximum output while rocking gang for optimum results. Tune receiver to 517.2 m, feed in a 517.2 m (580 kc/s) signal and adjust C35 (G3) for maximum output while rocking gang for optimum results. Repeat these adjustments until no further improvement results. Feed in a 300 m (1 Mc/s) signal and check calibration.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	V
V1 7S7 ...	220	1.7	78	3.4	—
V2 7B7 ...	220	4.6	78	0.7	2.5
V3 7C6†	220	3.8	—	—	—
V4 7C5 ...	90	0.32	—	—	10.0
V5 7Y4	216	34.0	220	3.3	238.0†
	210*	—	—	—	—

* A.C. reading. † Cathode current 52 mA.
‡ May be 7B6.

Drive Cord Replacement.—About 38in of nylon-braided glass yarn is required for a new drive cord, which should be run as shown in the sketch of the drive system (col. 4). The gang should be turned to minimum capacitance and the cord run anti-clockwise round the drive drum, pulling against the gang stop.

Switch Diagram

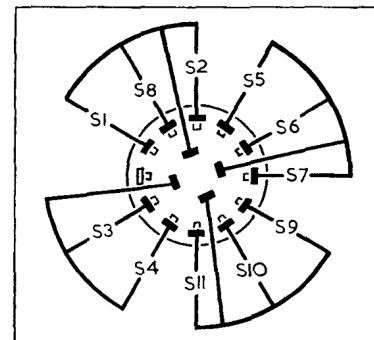


Diagram of the waveband switch unit, drawn as seen from the rear of an inverted chassis. The associated switch table appears at the head of this column.

Switch Table

Switches	L.W.	M.W.	S.W.
S1	—	—	C
S2	C	—	—
S3	—	C	—
S4	—	—	C
S5	—	—	C
S6	—	C	—
S7	C	—	—
S8	—	C	—
S9	—	—	C
S10	C	C	—
S11	—	—	—

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