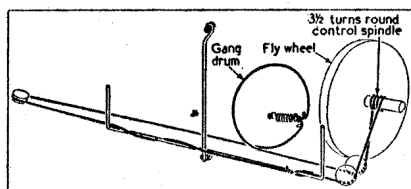


OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	S.W. aerial coup. ...	—	G4
L2	Aerial tuning coils	—	G4
L3		2-96	G4
L4		21-06	G4
L5		—	F4
L6	Oscillator tuning coils ...	3-06	F4
L7	Osc. reaction comp.	8-47	F4
L8		—	F4
L9	1st I.F. trans. { Pri.	5-2	A1
L10	{ Sec.	5-2	A1
L11	2nd I.F. trans. { Pri.	5-2	B1
L12	{ Sec.	5-2	B1
L13	Speech coil ...	2-5	—
T1	O.P. trans. { a	10-0	B4
	{ b	380-0	
	{ c	0-35	
	{ d	1-7	
S1-S15	Waveband switches	—	G3
S16	Speaker switch ...	—	D4
S17	Mains a.w., g'd R19	—	D3
S18		—	



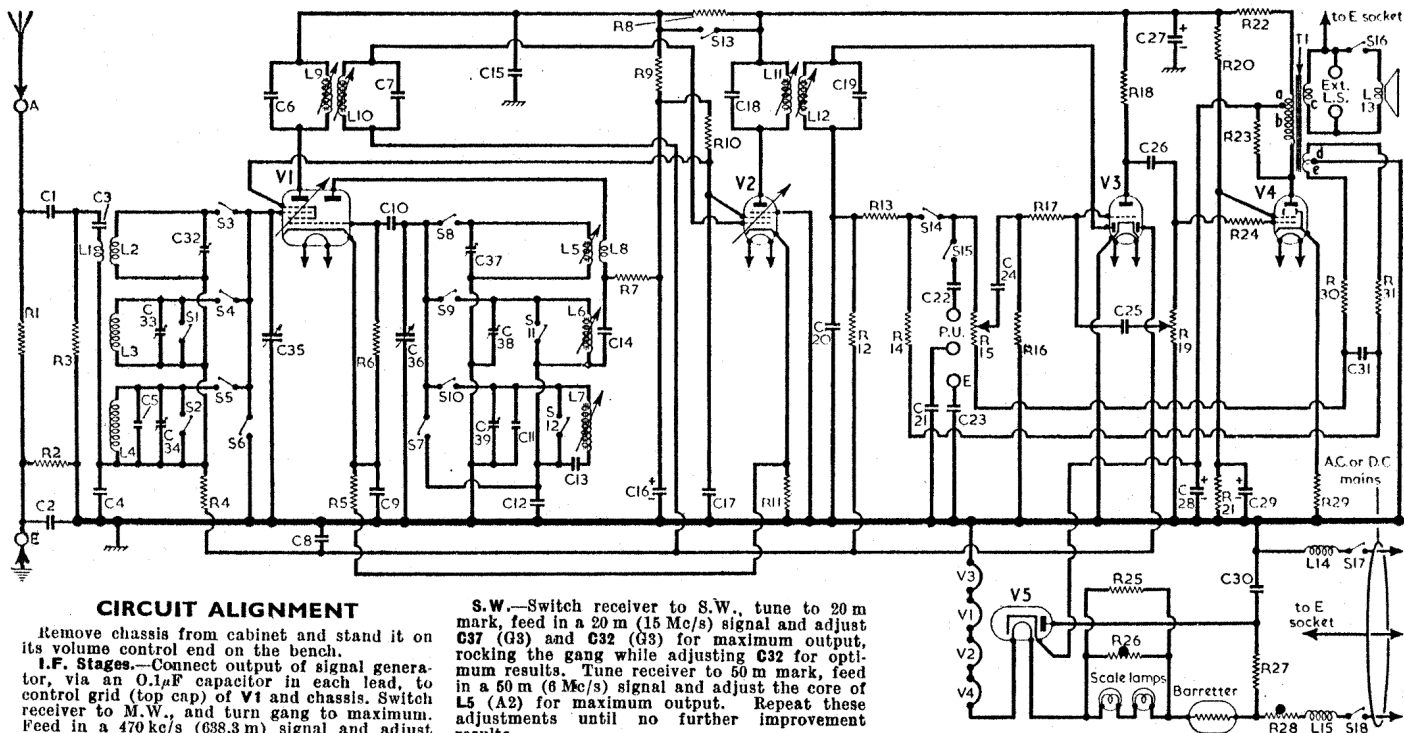
Sketch of the tuning drive cord system.

CAPACITORS		Values	Locations
C1	Aerial and earth ...	0-001μF	G4
C2		0-01μF	F4
C3	Aerial couplers ...	0-005μF	G4
C4		0-005μF	G3
C5	L.W. aerial trim.	25pF	G4
C6	1st I.F. trans. tuning	200pF	A1
C7	ing ...	200pF	A1
C8	A.G.C. decoupling	0-02μF	F4
C9	V1 cath. by pass ...	0-1μF	F4
C10	V1 osc. C.G.	100pF	F3
C11	L.W. osc. trim.	20pF	F4
C12	M.W. osc. tracker	330pF	F4
C13	L.W. osc. tracker	200pF	F4
C14	Reaction coupling	200pF	F4
C15	H.T. decoupling	0-02μF	F3
C16*		8μF	E4
C17	S.G. decoupling ...	0-02μF	F3
C18	2nd I.F. trans. tuning	200pF	B1
C19	I.F. by-pass ...	200pF	B1
C20	P.U. isolators	100pF	F3
C21		0-02μF	F4
C22	A.F. coupling	0-005μF	F4
C23		0-01μF	F4
C24	Part tone control	0-005μF	D3
C25	A.F. coupling	100pF	D3
C26		0-02μF	E4
C27*	H.T. smoothing	24μF	D4
C28*		16μF	D4
C29*	V4 S.G. decoup. ...	4μF	E4
C30	Mains R.F. filter ...	0-01μF	E3
C31	Neg. feed-back ...	0-25μF	E3
C32†	S.W. aerial trim.	40pF	G4
C33†	M.W. aerial trim.	40pF	G4
C34†	L.W. aerial trim.	40pF	G4
C35†	Aerial tuning	—	A2
C36†	Oscillator tuning	—	A1
C37†	S.W. osc. trim.	40pF	G4
C38†	M.W. osc. trim.	40pF	G4
C39†	L.W. osc. trim.	80pF	G4

* Electrolytic. † Variable. ‡ Pre-set.

KOLSTER-BRANDES DR15, ER15, FR15, GR15

RESISTORS		Values	Locations
R1	Anti-static leaks ...	1MΩ	G4
R2		470kΩ	G4
R3	Mod. hum shunt ...	1kΩ	G4
R4	A.G.C. decoupling	100kΩ	G4
R5	V1 G.B. ...	100Ω	F3
R6	V1 osc. C.G.	47kΩ	F4
R7	Osc. anode feed ...	10kΩ	F4
R8	Radio muting ...	10kΩ	G3
R9	H.T. feed ...	2-2kΩ	F3
R10	S.G. H.T. feed ...	4-7kΩ	F3
R11	V2 G.B. ...	47Ω	F3
R12	A.G.C. decoupling	2-2MΩ	F3
R13	I.F. stopper ...	47kΩ	F3
R14	Signal diode load ...	2-2MΩ	F3
R15	Volume control ...	500kΩ	C1
R16	V3 G.G.	10MΩ	D3
R17	V3 C.G. stopper ...	100kΩ	D3
R18	V3 anode load ...	470kΩ	E4
R19	Tone control ...	500kΩ	D3
R20	V4 S.G. pot.	6-8kΩ	E4
R21	divider ...	10kΩ	E3
R22	H.T. smoothing	1-5kΩ	E3
R23	No-load limiter	47kΩ	E3
R24	V4 C.G. stopper ...	47kΩ	E4
R25	Scale lamp shunt...	680Ω	E3
R26	Brimistor CZ3	—	E3
R27	V5 surge limiter ...	150Ω	E3
R28	Brimistor CZ3	—	E3
R29	V4 cath. G.B. ...	180Ω	E4
R30	Neg. feed back ...	240Ω	E3
R31		1kΩ	E3



CIRCUIT ALIGNMENT

Remove chassis from cabinet and stand it on its volume control end on the bench.

I.F. Stages.—Connect output of signal generator, via an 0.1μF capacitor in each lead, to control grid (top cap) of V1 and chassis. Switch receiver to M.W., and turn gang to maximum. Feed in a 470 kc/s (638.3 m) signal and adjust the cores of L12, L11, L10 and L9 (location references E3, B1, F3, A1) for maximum output. Repeat these adjustments.

R.F. and Oscillator Stages.—Transfer signal generator leads, via a dummy aerial to A and E sockets. As the tuning scale remains fixed in the cabinet when the chassis is withdrawn reference must be made to the calibration marks printed on the scale backing plate. If calibration marks are not provided they should be measured out on the backing plate as follows. First of all a datum line should be drawn 2 1/2 in to the right of the rivet in the middle of the scale backing plate (viewed from front). The calibration marks are then measured off to the left of the datum line, starting with 50 m (0.19 in), 500 m (1.08 in), 1,714 m (1.47 in), 20 m (3.63 in), 860 m (3.72 in) and 214 m (3.81 in). With the gang at maximum capacitance, check that the centre cursor coincides with the datum line.

M.W.—Switch receiver to M.W., tune to 214 m mark, feed in a 214 m (1,400 kc/s) signal and adjust C38 (G4) and C33 (G4) for maximum output. Tune receiver to 600 m mark, feed in a 500 m (600 kc/s) signal and adjust the core of L6 (A2) for maximum output. Repeat these adjustments until no further improvement results.

L.W.—Switch receiver to L.W., tune to 860 m mark, feed in an 860 m (860 kc/s) signal and adjust C39 (G4) and C34 (G4) for maximum output. Tune receiver to 1,714 m mark, feed in a 1,714 m (175 kc/s) signal and adjust the core of L7 (B2) for maximum output. Repeat these operations until no further improvement results.

S.W.—Switch receiver to S.W., tune to 20 m mark, feed in a 20 m (15 Mc/s) signal and adjust C37 (G3) and C32 (G3) for maximum output, rocking the gang while adjusting C32 for optimum results. Tune receiver to 50 m mark, feed in a 50 m (6 Mc/s) signal and adjust the core of L5 (A2) for maximum output. Repeat these adjustments until no further improvement results.

Sensitivity.—Overall sensitivity should be better than 250 μV for 50 mW output on all ranges.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 12K8GT	180	2-2	100	6-5	2-2
V2 12K7GT	105	2-8	100	2-5	1-0
V3 12Q7GT	160	7-9	—	—	—
V4 35L6GT	53	0-25	95	9-0	6-3
V5 35Z4GT	200	35-0	—	—	215-0

† A.C. reading.

Switches	Gram	L.W.	M.W.	S.W.
S1	—	—	—	—
S2	—	—	—	—
S3	—	—	—	—
S4	—	—	—	—
S5	—	—	—	—
S6	—	—	—	—
S7	—	—	—	—
S8	—	—	—	—
S9	—	—	—	—
S10	—	—	—	—
S11	—	—	—	—
S12	—	—	—	—
S13	—	—	—	—
S14	—	—	—	—
S15	—	—	—	—

Right: Waveband switch unit diagrams.

