

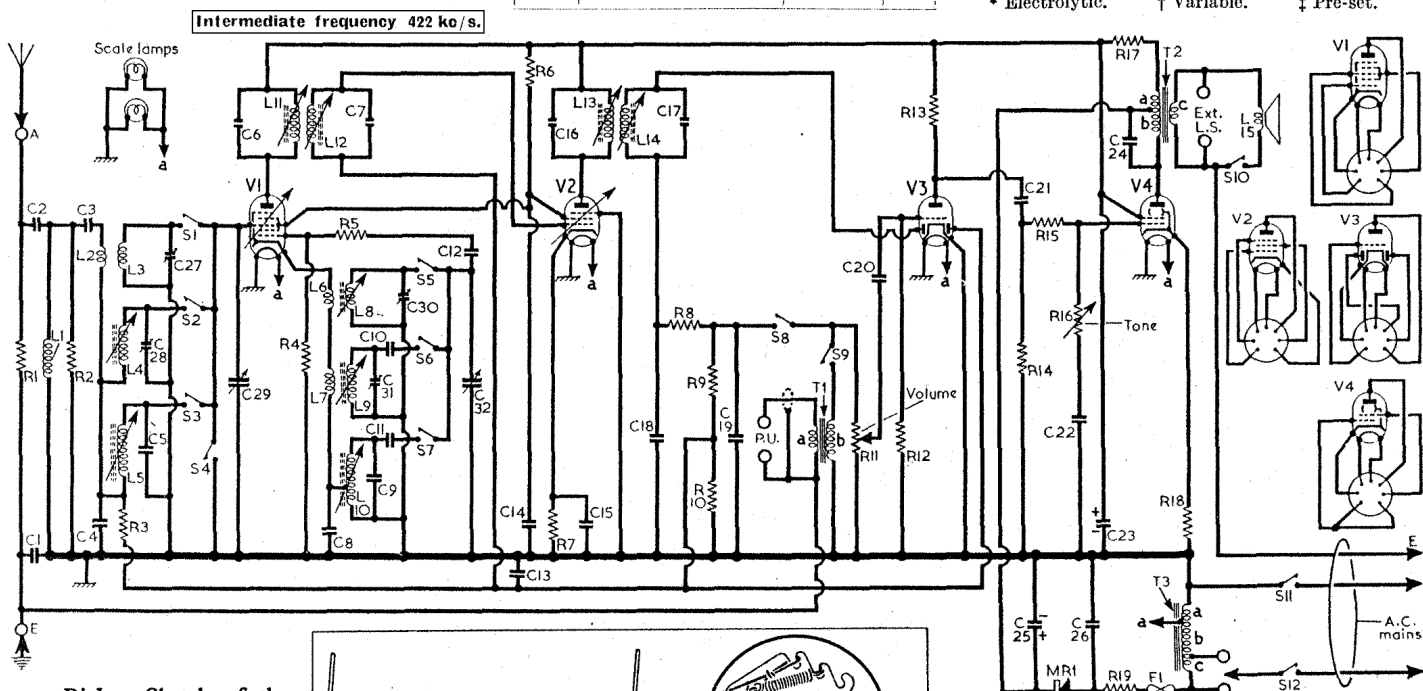
OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Mod. Hum filter ...	17-0	H4
L2	S.W. aerial coup. ...	—	H3
L3	—	—	H3
L4	Aerial tuning coils	3-4	H4
L5	—	18-0	H4
L6	Osc. reaction coils	—	G4
L7	—	—	G4
L8	Oscillator tuning coils	4-4	G4
L9	—	8-0	G3
L10	—	20-0	B1
L11	1st I.F. trans. {Pri.	20-0	B1
L12	— {Sec.	20-0	B1
L13	2nd I.F. trans. {Pri.	20-0	C2
L14	— {Sec.	20-0	C2
L15	Speech coil ...	2-5	—
T1	P.U. trans. {a ...	3,000-0	A2
	— {b ...	4,000-0	—
	— {c ...	1-5	—
T2	O.P. trans. {a ...	510-6	D2
	— {b ...	—	—
	— {c ...	—	—
T3	Mains auto-trans. {a ...	—	C2
	— {b ...	133-0	—
	— {c ...	20-0	—
S1-S9	Waveband switches	—	H3
S10	Speaker switch ...	—	E4
S11	—	—	—
S12	Mains switches ...	—	E3
F1	250mA fuse ...	—	C2
MR1	Westinghouse 15B35	—	D1

KOLSTER-BRANDES KR20

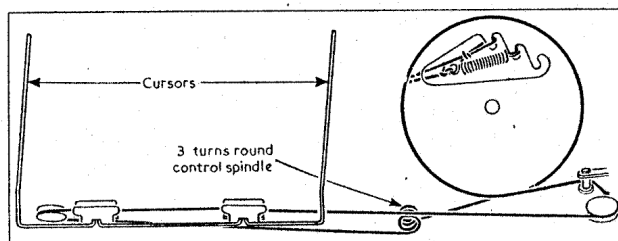
RESISTORS		Values	Locations
R1	Anti-static shunt...	1MΩ	H4
R2	Part mod. hum coil	100kΩ	H4
R3	A.G.C. decoupling	100kΩ	H3
R4	V1 osc. C.G.	22kΩ	G3
R5	Osc. stabilizer	47kΩ	G3
R6	S.G. H.T. feed	18kΩ	F3
R7	V2 G.B.	47kΩ	F3
R8	I.F. stopper	100kΩ	F4
R9	—	1MΩ	F4
R10	A.G.C. pot. divider {	2-2MΩ	G4
R11	—	500kΩ	F3
R12	V3 Anode load	10MΩ	F3
R13	V3 Anode load	470kΩ	F4
R14	V4 C.G.	220kΩ	F3
R15	V4 C.G. stopper	220kΩ	F3
R16	Tone control	250kΩ	E3
R17	H.T. smoothing	820Ω	E4
R18	V4 G.B.	270Ω	F4
R19	MR1 surge limiter	150Ω	G4

CAPACITORS		Values	Locations
C1	Aerial and earth isolators ...	0-01μF	H4
C2	—	0-001μF	H4
C3	—	0-005μF	H4
C4	Aerial couplers ...	0-002μF	H4
C5	L.W. aerial trim...	48pF	H3
C6	1st I.F. trans. tuning	88pF	B1
C7	—	88pF	B1
C8	L.W. osc. shunt ...	0-001μF	G4
C9	L.W. osc. trim.	100pF	G3
C10	M.W. osc. tracker...	410pF	G4
C11	L.W. osc. tracker...	180pF	G3
C12	V1 osc. C.G.	100pF	G3
C13	A.G.C. decoupling	0-02μF	G4
C14	S.G. decoupling ...	0-1μF	G3
C15	V2 cath. by-pass ...	0-04μF	F3
C16	2nd I.F. trans. tuning ...	88pF	C2
C17	—	88pF	C2
C18	I.F. by-passes ...	330pF	F3
C19	—	100pF	F4
C20	A.F. couplings ...	0-01μF	F3
C21	—	0-02μF	F4
C22	Part tone control...	1,500pF	F3
C23*	H.T. smoothing ...	32μF	D2
C24	Tone corrector ...	0-01μF	B4
C25*	H.T. smoothing ...	32μF	D2
C26	Mains R.F. by-pass	0-05μF	F4
C27†	S.W. aerial trim...	40pF	H4
C28†	M.W. aerial trim...	40pF	H4
C29†	Aerial tuning ...	—	B1
C30†	S.W. osc. trim.	40pF	G4
C31†	M.W. osc. trim.	40pF	G4
C32†	Oscillator tuning...	—	B2

* Electrolytic. † Variable. ‡ Pre-set.



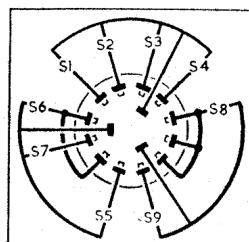
Right: Sketch of the drive cord system, viewed from front of chassis with gang at minimum. About 4ft. of cord is required.



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

S10 is the screw-type speaker switch, mounted between the external speaker sockets on the rear of the chassis.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 6BE6 ...	222	2-7	81	6-8	—
V2 6BA6 ...	222	6-6	81	3-0	0-4
V3 6AT6 ...	52	0-5	—	—	—
V4 6AQ5 ...	232	33-0	222	5-2	10-0



Above: Diagram of the waveband switch unit, drawn as seen on left in location reference H3.

CIRCUIT ALIGNMENT

I.F. Stages.—Remove chassis from cabinet and place it in a convenient position on the bench. Connect signal generator output, via an 0.1μF capacitor in each lead, to control grid (pin 7) of V1 and chassis. Switch receiver to M.W. and turn gang to minimum capacitance. Feed in a 422 kc/s (710.8 m) signal and adjust the cores of L14 (location reference C2), L13 (F3), L12 (B1) and L11 (G3) for maximum output, reducing the input as the circuits come into line to avoid A.G.C. action. Repeat these adjustments.

R.F. and Oscillator Stages.—As the tuning scale remains fixed in the cabinet when the chassis is withdrawn, reference should be made during the following alignment operations to the calibration marks on the scale backing plate. Check that with the gang at maximum capacitance the cursors coincide with the "D" calibration marks on the backing plate. Transfer signal generator leads, via a standard dummy aerial, to A and E sockets.

M.W.—Switch receiver to M.W. and tune right-hand cursor to M.W. calibration mark at right-hand end of backing plate. Feed in a 600 kc/s (500 m) signal and adjust the cores of L9 (B2) and L4 (A2) for maximum output. Tune right-hand cursor to M.W. calibration mark near centre of backing plate, feed in a 1,400 kc/s (214 m) signal and adjust C31 (B2) and C28 (A2) for maximum output. During the final adjustment of C28 rock the gang for optimum results.

L.W.—Switch receiver to L.W., tune left-hand cursor to L.W. calibration mark, feed in a 225 kc/s (1,333 m) signal and adjust the cores of L10 (B1) and L5 (A2) for maximum output. Repeat these adjustments and then check the M.W. alignment, readjusting L4, L9, C28 and C31 if necessary, as previously described.

S.W.—Switch receiver to S.W., tune left-hand cursor to calibration mark "S" near centre of scale. Feed in a 6 Mc/s (50 m) signal and adjust the core of L8 (B2) for maximum output. Tune left-hand cursor to calibration mark "S" near left-hand end of backing plate. Feed in a 15 Mc/s (20 m) signal and adjust C30 (B2) and C27 (B2) for maximum output, rocking the gang while adjusting C27 for optimum results.