

# KOLSTER-BRANDES - FB10

CAPACITORS		Values	Locations
C1	Aerial coupling ...	0.001 $\mu$ F	G5
C2	L.W. trimmer ...	70pF	F3
C3	1st I.F. trans. ...	88pF	B2
C4	tuning ...	88pF	B2
C5	L.W. tracker ...	440pF	F4
C6	M.W. tracker ...	550pF	G3
C7	L.W. trimmer ...	120pF	F4
C8	V2 cath. by-pass ...	0.05 $\mu$ F	F4
C9	A.G.C. decoupling ...	0.1 $\mu$ F	F5
C10	2nd I.F. trans. ...	88pF	B2
C11	tuning ...	88pF	B2
C12	I.F. by-pass ...	330pF	E4
C13	I.L.T. decoupling ...	0.1 $\mu$ F	E5
C14	A.F. coupling ...	0.01 $\mu$ F	D4
C15	H.T. smoothing ...	0.003 $\mu$ F	D4
C16*	H.T. smoothing ...	32 $\mu$ F	B1
C17*	H.T. smoothing ...	32 $\mu$ F	B1
C18	Tone correction ...	0.03 $\mu$ F	E3
C19	Mains R.F. ...	0.1 $\mu$ F	C1
C20†	M.W. aerial trim ...	60pF	A1
C21†	Aerial tuning ...	60pF	A1
C22†	M.W. osc. trimmer ...	60pF	A1
C23†	Oscillator tuning ...	60pF	A1

\* Electrolytic.

† Variable.

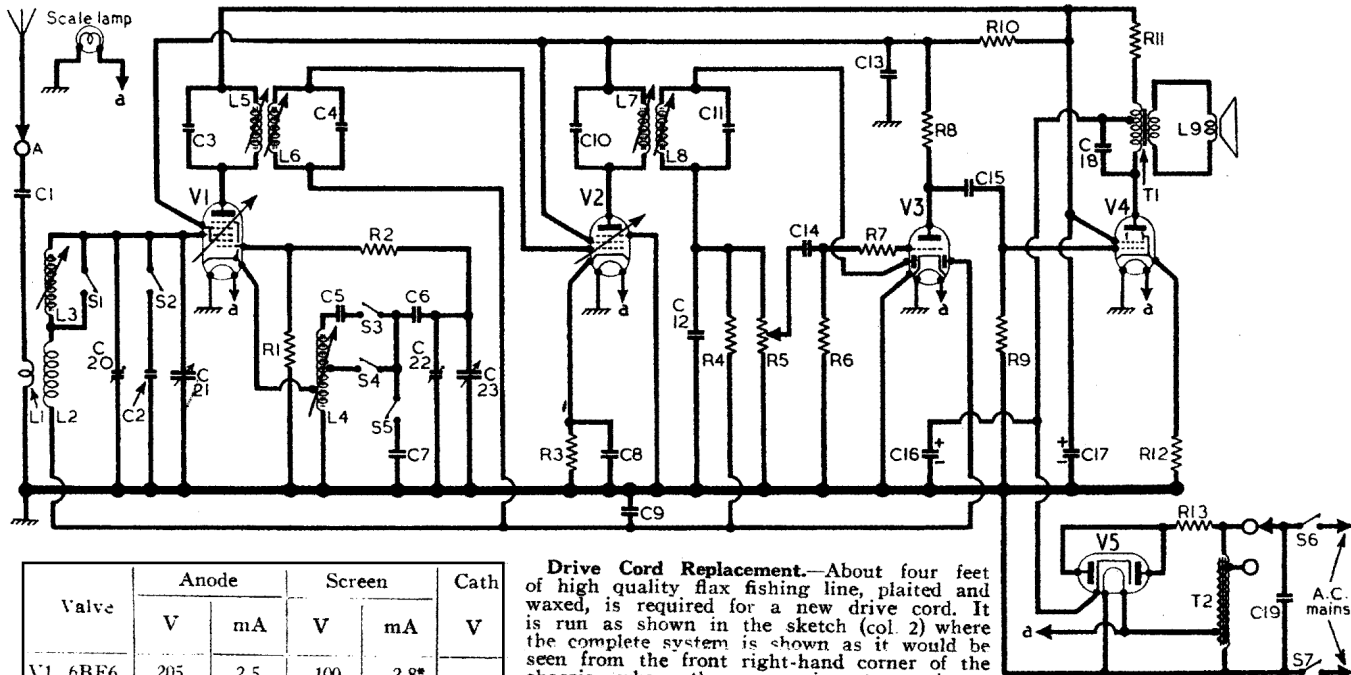
‡ Pre-set.

RESISTORS		Values (ohms)	Location
R1	V1 osc. C.G. ...	22 k.	G4
R2	Osc. stabiliser ...	220	G4
R3	V2 G.B. ...	47	F4
R4	A.G.C. decoup. ...	2.2 M	E4
R5	Volume control ...	500 k	C1
R6	V3 C.G. ...	10 M	D4
R7	V3 grid stopper ...	220 k	D4
R8	V3 anode load ...	220 k	E5
R9	V4 C.G. ...	470 k	D5
R10	V4 C.G. ...	* 5.9 k	E3
R11	H.T. smoothing ...	1.8 k	E3
R12	V4 G.B. ...	240	D5
R13	V5 surge limiter ...	† 113	C2

\* Comprising two 8,200 ohms resistors in parallel in series with a 1,800 ohms resistor. † Comprising 150 ohms and a 470 ohms resistor in parallel.

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Aerial coupling ...	Very low	B2
L2	Frame aerial ...	Very low	B2
L3	L.W. loading coil ...	110	A2
L4	Osc. coil, total ...	7.0	G3
L5	1st I.F. Pri. ...	20.0	B2
L6	trans. Sec. ...	20.0	B2
L7	2nd I.F. Pri. ...	20.0	B2
L8	trans. Sec. ...	20.0	B2
L9	Speech coil ...	3.0	B1
T1	Primary, total ...	400.0	B2
T2	Secondary ...	Very low	—
S1-S5	Mains trans., total ...	153.0	C1
S6, S7	Waveband switches ...	—	F3
	Mains sw., g.d. R5	—	C1

Intermediate frequency 422 kc/s.



Valve	Anode		Screen		Cath
	V	mA	V	mA	
V1 6BE6	205	2.5	100	2.8*	—
V2 6BA6	100	7.6	100	3.4	0.5
V3 6AT6	55	0.18	—	—	—
V4 6V6GT	235	34.0	205	3.0	9.0
V5 6X5GT	225†	—	—	—	250.0

\* By-pass meter with 0.1 $\mu$ F capacitor when taking this reading. † Each anode A.C.

**Drive Cord Replacement.**—About four feet of high quality flax fishing line, plaited and waxed, is required for a new drive cord. It is run as shown in the sketch (col. 2) where the complete system is shown as it would be seen from the front right-hand corner of the chassis when the gang is at maximum capacitance.

A start is made by looping the end over one of the boss screws on the gang drum, so that the cord can be pulled against the gang stop to keep it taut. The cord runs over four smooth guide posts, no pulleys being used.

## CIRCUIT ALIGNMENT

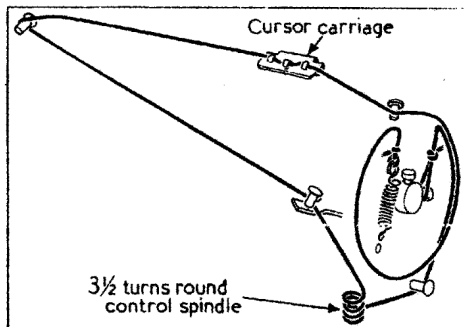
To gain access to the core and trimmer adjustments, the chassis should be removed from its carrying case, and as the tuning scale remains in the case alignment points are marked on the white celluloid scale backing plate.

**I.F. Stages.**—Switch set to M.W., turn volume control to maximum and gang to minimum, and connect signal generator, via a 0.1  $\mu$ F capacitor in each lead, to control grid (pin 7) of V1 and chassis. Feed in a 422 kc/s. (710.8 m) signal and adjust the cores of L3, L7, L6 and L5 (location references E4, B2 and F4), in that order, 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.**—Check that with the gang at maximum capacitance, the cursor coincides with the mark at the right hand end of the white celluloid scale backing plate. C20 and C22 are trimmed by adjusting the amount of wire with which they are wound, although very small changes can be made by sliding the outer wire along the inner. Transfer "live" signal generator lead to aerial socket and replace its 0.1 $\mu$ F capacitor with one of 200 pF.

**M.W.**—Switch set to M.W., tune to the 500 m. alignment mark on scale backing plate, (right centre), feed in a 500 m. (600 kc/s.) signal and adjust the core of L4 (G3) for maximum output. Tune to the 214.3 m. alignment mark (extreme left), feed in a 214.3 m. (1,400 kc/s.) signal, and adjust C22, C20 (A1) for maximum output. Repeat these adjustments.

**L.W.**—Switch set to L.W., tune to the 1,714 m. mark (left centre), feed in a 1,714 m. (175 kc/s.) signal and adjust the core of L3 (G5) for maximum output.



Sketch of the tuning drive system, as seen from front with gang at maximum