

KOLSTER-BRANDES MP151

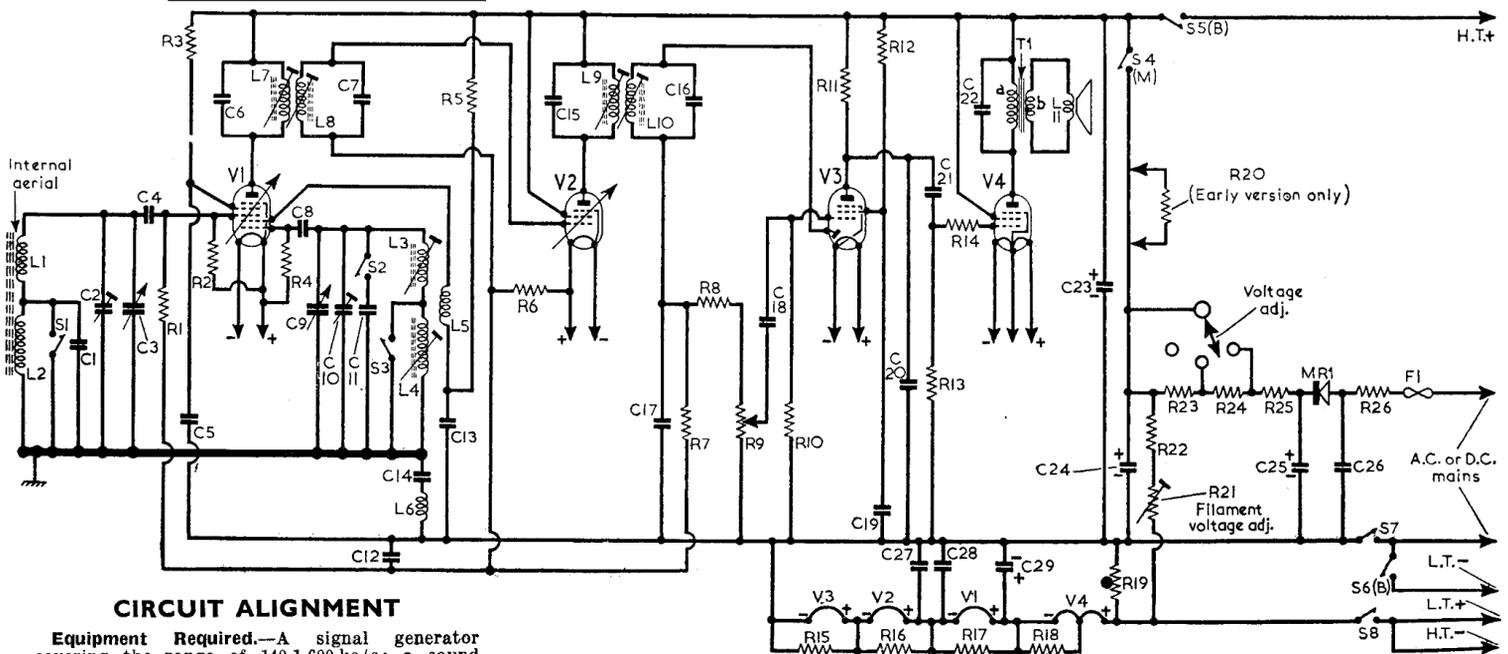
OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Internal aerials ...	1-2	A1
L2		3-4	C1
L3	Oscillator tuning coils ...	4-5	A2
L4		3-0	A2
L5	Osc. reaction coil	4-0	A2
L6	Mod. hum choke ...	—	G5
L7	1st I.F.T. { Pri.	25-5	A1
L8		{ Sec.	4-5
L9	2nd I.F.T. { Pri.	25-5	A1
L10		{ Sec.	4-5
L11	Speech coil ...	2-5	D4
T1	O.P. trans. { a	600-0	C1
	{ b	—	—
S1-S3	Band switches ...	—	A1
S4(M)	Main/battery sw. ...	—	B2
S6(B)		—	B1
S7, S8	On/off switches ...	—	B1
F1	150 mA fuse ...	—	—

CAPACITORS		Values	Locations
C1	L.W. aerial trim. ...	70pF	A1
C2	M.W. aerial trim. ...	—	G4
C3	Aerial tuning ...	—	A1
C4	V1 C.G. ...	100pF	G4
C5	V1 S.G. decoupling	0.03μF	G4
C6	1st I.F.T. tuning ...	100pF	A1
C7		100pF	A1
C8	V1 osc. C.G. ...	50pF	G4
C9	Oscillator tuning ...	—	A1
C10	M.W. osc. trim. ...	—	G4
C11	L.W. osc. trim. ...	220pF	A1
C12	A.G.C. decoupling	0.04μF	G3
C13	Osc. anode decoupl.	0.03μF	G4
C14	Chassis isolator ...	0.1μF	G5
C15	2nd I.F.T. tuning ...	100pF	A1
C16		100pF	A1
C17	I.F. by-pass ...	100pF	G3
C18	A.F. coupling ...	0.005μF	E3
C19	V3 S.G. decoupling	0.04μF	F3
C20	I.F. by-pass ...	100pF	F3
C21	A.F. coupling ...	0.001μF	F3
C22	Tone corrector ...	0.003μF	G4
C23	H.T. smoothing ...	2μF	F4
C24		50μF	D5
C25	50μF	D5	
C26	Mains R.F. by-pass	0.02μF	F4
C27	Filament by-passes	0.04μF	G4
C28		0.04μF	G4
C29	200μF	D5	

RESISTORS		Values	Locations
R1	V1 C.G. ...	4.7MΩ	G4
R2		3.3MΩ	G4
R3	V1 S.G. feed ...	47kΩ	G4
R4	V1 osc. C.G. ...	33kΩ	G4
R5	V1 osc. H.T. feed ...	22kΩ	G4
R6	V2 C.G. ...	3.9MΩ	G3
R7	A.G.C. decoupling	1MΩ	G3
R8	I.F. stopper	100kΩ	B1
R9	Volume control ...	1MΩ	C1
R10	V3 C.G. ...	10MΩ	F3
R11	V3 anode load ...	1MΩ	F3
R12	V3 S.G. feed ...	3.3MΩ	F4
R13	V4 C.G. ...	2.2MΩ	F3
R14	V4 C.G. stopper ...	160kΩ	F3
R15	Filament H.T. by-passes ...	120Ω	F3
R16		120Ω	G3
R17	330Ω	G4	
R18	390Ω	F4	
R19	Brimistor CZ10 ...	—	B1
R20*	H.T. smoothing ...	2kΩ	F4
R21†	Filament ballast ...	1.2kΩ	C1
R22†		2.5kΩ	C1
R23	Voltage adj. ...	580Ω	C1
R24		500Ω	C1
R25§	H.T. smoothing ...	2.6kΩ	C1
R26	Surge limiter ...	480Ω	B1

*Early version only. †1kΩ
‡3kΩ
§2.1kΩ } Values in early version.

Intermediate frequency 470 kc/s.



CIRCUIT ALIGNMENT

Equipment Required.—A signal generator covering the range of 140-1,600 kc/s; a sound output meter; an 0.1μF capacitor; an injection coil consisting of twelve turns of insulated wire on a 2-inch diameter former.

- 1.—Switch receiver to M.W. and turn gang to minimum. Connect output of signal generator, via 0.1μF capacitor in "live" lead, to control grid (pin 6) of V1 and chassis, connect output meter across T1 secondary winding.
- 2.—Detune L8 and L9 (location reference A1) by screwing out their cores. Feed in a 470 kc/s signal and adjust the cores of L10, L9, L8 and L7 (A1) for maximum output. Do not re-adjust without carrying out complete procedure, including the detuning of L8, L9.
- 3.—Transfer output of signal generator to injection coil and place coil near to, and in line with, the internal aerial. Tune receiver to 500m calibration mark, feed in a 600 kc/s signal and adjust the core of L3 (A2) for maximum output.
- 4.—Tune receiver to calibration mark at 214m, feed in a 1,400 kc/s signal and adjust C10 (G4) and C2 for maximum output.
- 5.—Switch receiver to L.W. and tune to calibration mark at 1.713m. Feed in a 175 kc/s signal and adjust the core of L4 (G4) for maximum.
- 6.—In an earlier version of the receiver, a L.W. aerial trimmer was fitted. This should be adjusted at 1,200m for maximum output.

Modifications.—In earlier versions of the receiver, the following differences existed as compared to our sample receiver. A pre-set L.W. aerial trimmer was connected across L2, C14, L6 were not fitted, and the mains H.T. negative circuit was connected directly to chassis. A separate reaction coupling coil was used for L3 and L4 in place of L5, the M.W. section being short-circuited by a switch for L.W. operation. A 500 pF tricker was connected in series between L3, S3 and L4. S2, C11 were not fitted and a 120 pF capacitor was shunted across L4. R20 was connected in the H.T. circuit, as indicated in our circuit diagram, and the values of R21, R22 and R25 were different, as indicated in the resistor table.

Filament Adjustment R21.—In order to obtain satisfactory operation for various mains input voltages, the filament adjustment R21 should be set up as follows.

Adjust the mains supply to the receiver by means of a Variac transformer or a voltage dropper so that it is exactly 250 V, or 225 V or 245 V, setting the voltage adjustment plug on the receiver to the appropriate voltage tapping. Connect 0-100 mA D.C. milliammeter in series with the lead from R21 to pin 7 on V4 holder. Adjust R21 for a reading of 24 mA ±2%.