



KOLSTER-BRANDES
817

VALVE ANALYSIS

Valve voltages and currents given in the table below were obtained when the receiver was operating with a new 90 V HT battery and a new 1.5 V LT cell.

The receiver was switched to the MW band, and the volume control was at maximum. The frame aerial was disconnected, and its two connecting tags were short-circuited.

Voltages were measured on the 400 V scale of the Model 7 Universal Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 1A7G	80	0.42	31	0.57
	Oscillator			
V2 1N5G	80	0.66	80	0.16
V3 1H5G	39	0.05	—	—
V4 1C5G	76	5.5	80	1.2

CIRCUIT ALIGNMENT

IF Stages.—Switch set to MW and tune to 580m on scale. Connect signal generator to control grid (top cap) of V1, via a 0.1 μF condenser, and chassis. Feed in a 464 KC/S (646.55m) signal, and adjust C22, C21, C20 and C19 in turn for maximum output.

RF and Oscillator Stages.—With the gang at maximum, the pointer should be horizontal. Connect signal generator to external aerial and earth sockets.

MW.—Switch set to MW, tune to 214m (mark on scale), feed in a 214m (1,400 KC/S) signal, and adjust C17, then C13, for maximum output.

LW.—Switch set to LW, tune to 1,200m (mark on scale), feed in a 1,200m (250 KC/S) signal, and adjust C18, then C14, for maximum output.

There are no tracking adjustments, but final adjustment must be made with the back cover on the receiver. Therefore, replace the back, with the batteries in position. Disconnect signal generator leads from receiver and, instead, connect a length (about 2 feet) of wire to the generator output and allow it to trail a foot or two from the receiver. Then, inserting trimming tool through hole in back cover, finally adjust C13 at 214m, and C14 at 1,200m, without any direct connection.

GENERAL NOTES

Switches.—S1-S4 are the waveband, S5 the HT circuit and S6 the LT circuit switches, in a single three-position rotary unit mounted beneath the chassis. This is indicated in our under-chassis-view and shown in detail in the diagram in the top left-hand corner of the circuit diagram, where it is drawn as seen when viewed from the rear of the underside of the chassis. S1 and S4 close on MW, and S2 and S3 on LW. S5 and S6 close on MW and LW.

Coils.—L1 is the MW frame aerial winding. It is wound on the back cover of the receiver, on which are also mounted the external aerial and earth sockets, and is not shown in our chassis illustrations.

The LW aerial loading coil L2 and the oscillator coils L3-L6 are in two unshielded units on the chassis deck. The IF transformers L7, L8 and L9, L10 are mounted horizontally beneath the chassis.

Batteries.—Separate dry HT and LT batteries are used. Those supplied with the receiver are: LT, Alpha type 217, 1.5V; HT, Alpha type 233, 90V.

Battery Leads and Voltages.—The two-pin plug terminating the brown and green pair of battery leads is the LT battery plug. The large pin is positive 1.5V. Black lead and plug is HT negative; red lead and plug HT positive 90V.

Condenser C1.—This is made by winding a few turns at one end of the frame aerial winding round the aerial socket, which is not otherwise connected to the receiver.

R4.—This was 2,000,000 Ω in our chassis, but may in some cases be 1,000,000 Ω.

Valves.—In some cases the type number may be followed by the suffix E (before the G; i.e.: 1A7EG). Such types are equivalents, and may be used in the receiver.

RESISTANCES	Values (ohms)
R1	V1 osc. CG resistance ... 250,000
R2	V1 SG HT feed ... 50,000
R3	IF stopper ... 50,000
R4	AVC line decoupling ... 2,000,000
R5	Manual volume control; signal diode load ... 1,000,000
R6	V3 triode CG resistance ... 2,000,000
R7	V3 triode anode load ... 250,000
R8	V4 grid stopper ... 50,000
R9	V4 GB resistance ... 800

CONDENSERS	Values (μF)
C1	External aerial series ... 0.000005
C2	Aerial LW fixed trimmer ... 0.0001
C3	AVC line decoupling ... 0.1
C4	V1 osc. CG condenser ... 0.0001
C5	HT circuit RF by-pass ... 0.1
C6	V1 SG decoupling ... 0.1
C7	IF by-pass ... 0.0002
C8	AF coupling to V3 triode ... 0.02
C9	AF coupling to T1 ... 0.02
C10	Fixed tone corrector ... 0.005
C11*	HT circuit reservoir ... 2.0
C12*	V4 GB by-pass ... 25.0
C13†	MW frame aerial trimmer ... 0.00004
C14†	LW aerial trimmer ... 0.00004
C15†	Aerial circuit tuning ... —
C16†	Oscillator circuit tuning ... —
C17†	Osc. circuit MW trimmer ... 0.00004
C18†	Osc. circuit LW trimmer ... 0.00075
C19†	1st IF trans. pri. tuning ... 0.00022
C20†	1st IF trans. sec. tuning ... 0.00022
C21†	2nd IF trans. pri. tuning ... 0.00022
C22†	2nd IF trans. sec. tuning ... 0.00022

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS	Approx. Values (ohms)
L1	MW frame winding ... 0.7
L2	Frame LW loading coil ... 7.5
L3	Osc. circ. MW tuning coil ... 1.8
L4	Osc. circ. LW tuning coil ... 0.4
L5	Oscillator reaction coils, total ... 4.3
L6	
L7	1st IF trans. { Pri. ... 12.0
L8	
L9	2nd IF trans. { Pri. ... 8.0
L10	
L11	Speaker speech coil ... 2.5
T1	Intervalve auto-trans., total ... 3,500.0
T2	
	{ Sec. ... 0.3
S1-S4	Waveband switches ... —
S5	HT circuit switch ... —
S6	LW circuit switch ... —