

KOLSTER-BRANDES 810

Three-valve, three-waveband battery bandpass TRF receiver with volume and sensitivity (reaction) controls. Sockets are provided for pickup and extra loudspeaker. Marketed by Kolster-Brandes, Ltd., Sidcup, Kent.

Circuit.—The aerial input is coupled to the bandpass coil assembly by L2 and L4, which are permanently in circuit. L2 is the medium and long wave primary, and L4 is the SW primary winding. The aerial connection may be taken either direct via socket A1 or through a resistance R1 for the reception of strong transmissions.

L6 and L7 are the MW and LW grid coils of the bandpass filter unit which has a bottom capacity coupling C1. There

is no bandpass coupling on SW, the aerial coil L4 being coupled directly to the SW grid coil L5, both of these coils being on a former separate from the other windings.

The grid coils feed V1, a variable-mu HF pentode whose gain is varied by controlling the bias applied to it. R6 is the standing bias resistance for maximum sensitivity while the volume control VR1 enables additional bias up to minus 9v to be applied to reduce the gain to a minimum. The on-off switch is ganged to the volume control.

The screen and anode circuits are decoupled by C2 and the HT supply by C7.

Tuned anode HF coupling is employed, the anode tuning condenser VC3 being ganged with the bandpass tuning condensers VC1 and VC2.

L9, L10 and L12 are the SW, MW, and LW anode coils respectively. Grid rectification is employed for the detector valve V2, C4 acting as a coupling condenser and a grid rectification condenser in conjunction with the grid leak R3.

Pickup sockets are provided across the grid circuit of V2 for use in conjunction with a high impedance pickup.

Reaction is obtained from the anode circuit of V2 by means of the HF choke L13 and the reaction windings L8 and

L11. L8 is coupled to the SW anode coil L9 on one former while L11 is coupled to the MW and LW anode coils L10 and L12 on another former.

The degree of reaction is controlled by the variable condenser VC4. On MW and LW, C3 is brought into circuit as an anode to earth HF by-pass for V2.

V2 is resistance-capacity coupled by R4 and C5 to L14, an LF auto-transformer which is connected to the grid of the output pentode V3 via a grid stopper R5.

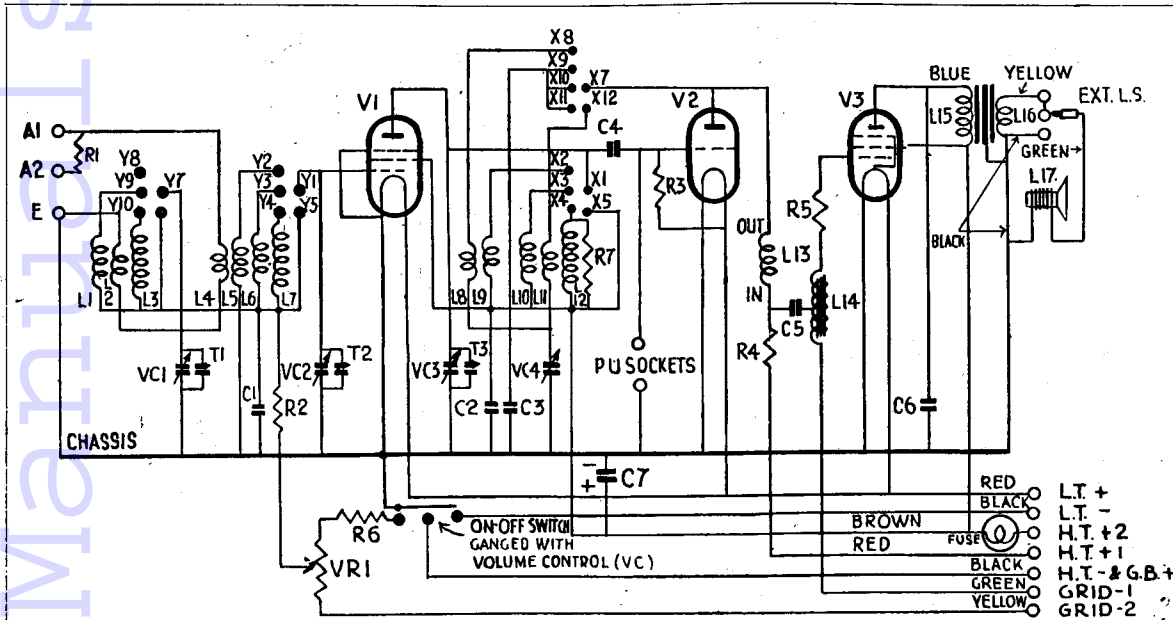
Permanent tone correction for the pentode is effected by C6 and the low impedance moving-coil speaker is coupled to the output valve via the transformer L15, L16.

Extra loudspeaker sockets are provided and the internal loudspeaker may be silenced by unscrewing the external speaker switch on the panel fitted at the back of the cabinet. Extra speakers should have an impedance of about 3 ohms.

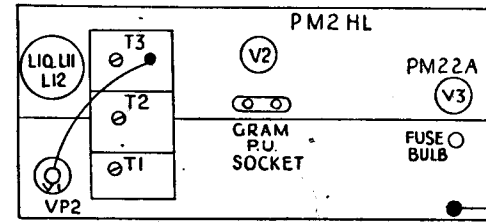
The HT battery recommended by the makers is a Drydex H1070 (120v + 9v G.B.) connections being as shown in the chassis layout diagram.

GANGING

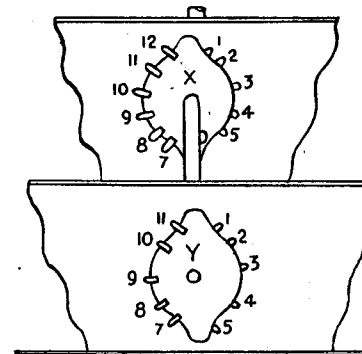
Ganging should be carried out with the reaction condenser at minimum capacity



A three-valve battery set, the Kolster-Brandes 810 employs bandpass input and a reactive triode detector. LF coupling is by parallel-fed auto-transformer.



- GREEN G.B.1-4.5v
- YELLOW G.B.2-9v
- BLACK H.T. -
- RED H.T.+1 70v. to 90v.
- ORANGE H.T.+2 120v.
- BLACK L.T. - } 2v.
- RED L.T. + }



WAVERRANGE SWITCH CONTACTS		
THE CONTACTS SPECIFIED ON THE RIGHT CONNECT WHEN THE SWITCH IS IN POSITION SHOWN BELOW	X	Y
LONG WAVERRANGE	1 TO 4 7 " 10 11 " 12	1 TO 4 7 " 10
MEDIUM WAVERRANGE	1 TO 3 4 " 5 7 " 9 10 " 11&12	1 TO 3 4 " 5 7 " 9
SHORT WAVERRANGE	1 TO 2 3 - 4&5 7 " 8 9 " 10&11	1 TO 2 3 " 4&5 9 " 10&11

At top is the top-of-chassis layout diagram indicating trimmer positions. The switch diagram and table enable all switching operations to be traced.

and the volume control at maximum, with the set switch to MW. A signal of 1,400 kc should be injected via a dummy aerial to the A1 socket and the tuning pointer adjusted to the 214 m spot. Trimmers T1, T2, T3 should be adjusted in that order for maximum output, repeating the adjustments after the first rough settings have been obtained.

If these adjustments are carefully carried out calibration on the SW and LW bands should be within limits.

VALVE READINGS

V	Type	Electrode	Volts
1	VP2	Anode	123
		Screen	123
2	PM1HL	Anode	51
3	PM22A	Anode	121
		Screen	123
	Fuse lamp		2.5 v.

RESISTANCES

R	Ohms	R	Ohms
1	100,000	5	500,000
2	250,000	6	1,000
3	2 meg.	7	1 meg.
4	25,000	VR1	10,000

CONDENSERS

C	Mfd	C	Mfd
1	.02	5	.02
2	.1	6	.003
3	.005	7	2
4	.0001		

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LW Band.—Reconnect normal aerial and earth, switch set to LW and pointer to wavelength of known LW transmission.

Adjust T8 for maximum output as judged by tuning indicator. Tune receiver to exactly 1,000m connect the service oscillator in place of the aerial and earth and tune the service oscillator to the point giving maximum deflection on the output meter.

Adjust T9 and T10 for maximum output and repeat for final setting.

SW Band.—Switch receiver to SW, and the band selector dial to the 16m band.

Adjust tuning control to 300m (5 on the SW scale).

Inject a 17.7mc signal to the aerial and earth terminals and adjust T11, T12, T13 in that order for maximum output. Repeat adjustments for final setting.