

KOLSTER- BRANDES 835

Four-valve, plus rectifier, three waveband, DC/AC receiver for 200-270 v mains supply. Manufactured by Kolster-Brandes, Ltd., Cray Works, Sidcup, Kent.

Circuit.—Two aerial sockets are provided, A1 for maximum sensitivity and A2 (R1 in series) for local reception. The aerial input is to C1 and R2 as a potential divider between aerial and chassis. C4 and L1 is the SW aerial coupling circuit to L2, the SW grid coil. On MW and LW bands C3 acts as the common coupling impedance for L3 and L4, the MW and LW grid coils. The coils are all tuned by VC1 and have their own trimmers.

The signal is fed to V1, a triode-hexode operating as a frequency-changer with internal coupling. The control grid is connected directly to the input grid coils and has AVC applied to it via R5 to the AVC line.

The screen is fed from the potential

divider comprising R3 and R6 decoupled by C5. The screen of V2 is also fed from this point.

Standing bias for V1 is obtained from R7 decoupled by C6 and the oscillator anode is fed via R4 from the HT line. R8 and C7 are the leak and condenser for the grid circuits which comprise the short-wave coil L6 and the variable iron-core inductances L7 and L8 for MW and LW bands. VC 2 tunes these circuits.

HF reaction is provided by the winding L5 on the SW band and the common impedance of C12 for the other two bands, C8 being the coupling condenser and R9 a "smoothing" resistance in the HF feed circuit.

The IF signal is transferred from V1 to V2, the IF amplifier pentode by an IF transformer comprising the variable dust-core inductances L9 and L10 with fixed condensers C9 and C10.

The control grid of V2 is connected to the AVC line and standing bias is derived from R10 decoupled by C14. A second IF transformer transfers the signal to a diode of the double-diode triode V3. R13 is the signal load resistance with R12 and C30 the IF filter. The LF signal is fed from R13 via C17 to the volume control VR1 the slider of which connects to the grid of the triode section of V3.

A high-impedance pickup may be connected to the sockets across C17 and VR1. The "earthy" side of the pickup circuit is isolated from chassis by C2. By unscrewing the switch adjacent to the PU sockets the radio may be silenced.

V3 is biased by R11 decoupled by C19 and the AVC diode is fed from L11 via C18, the AVC load resistance being R17. The AVC line is then fed via the filter R16 and C29.

LF signals are resistance-capacity coupled to V4, the output pentode, via R14 and C20.

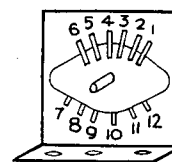
R15 is the voltage dropper resistance for V3 anode and from the same point is fed the screen of V4 with C21 decoupling. R19 decoupled by C22, biases V4 whose output is coupled by a matching transformer to the PM loudspeaker.

Sockets are provided for an extra loudspeaker which should have a DC resistance similar to that of the internal speaker which is 2 ohms. By unscrewing the switch adjacent to the extra loudspeaker sockets the internal speaker may be silenced.

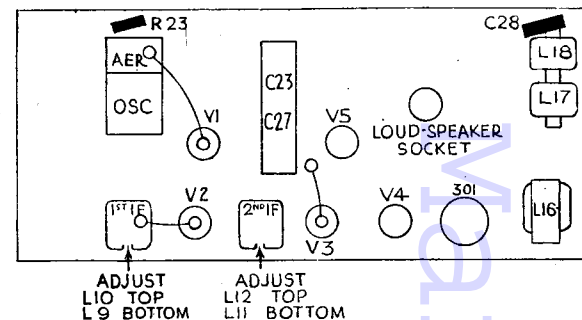
Permanent tone correction is effected by C24 and variable tone control by C25 and the variable resistance VR2.

The HT and LT supply circuits are quite standard. The mains input is filtered by the HF chokes L17, L18, and the condenser C28. The heaters are all in series with the type 301 barretter across the mains supply. The valves take .3A.

The HT supply is via the double-wave rectifier V5 which has its anodes strapped to provide half-wave rectification. R21 and R22 are anode current limiting resistances. Smoothing is effected by the choke L6 and electrolytic condensers.



Layout of the KB chassis and details of the switch bank and coil unit.



Switching.—The contacts (see diagram) make connection on the different bands as follows: SW, 1 to 2, 3 to 4 and 5, 7-8, 9-10-11; MW, 1-3, 4-5, 7-9, 10-11; LW, 1-4, 7-10.

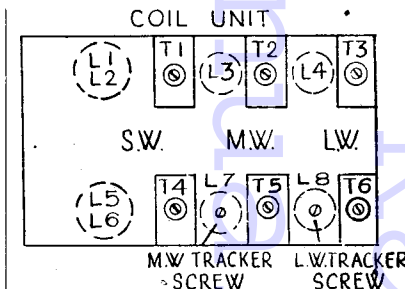
GANGING

IF Circuits.—Connect service oscillator to grid of V1 via a .1 mfd condenser.

VALVE READINGS

V	Type	Electrode	Volts
1	.. 6K8G	.. Anode	.. 245
		.. Screen	.. 60
		.. Cathode	.. 1.8
2	.. 6U7G	.. Osc. anode	.. 55
		.. Anode	.. 245
		.. Screen	.. 60
3	.. 6Q7G	.. Cathode	.. 2.1
		.. Anode	.. 50
		.. Cathode	.. .4
4	.. 25A6G	.. Anode	.. 210
		.. Screen	.. 150
		.. Cathode	.. 18
5	.. 25Z6G	.. Cathode	.. 260

Pilot lamp, 8v, M.E.S. Barretter, type 301.



Switch receiver to MW and adjust tuning pointer to 580m. With volume control at maximum inject a 464kc signal and adjust the cores of L9, L10, L11 and L12 for maximum reading on output meter, keeping input to receiver low.

MW Band.—Connect service oscillator to A1 aerial socket via a standard dummy

Continued end column, opposite page

RESISTANCES

R	Ohms	R	Ohms
1	.. 10,000	14	.. 250,000
2	.. 1,000	15	.. 15,000
3	.. 20,000	16	.. .5 meg
4	.. 50,000	17	.. .5 meg
5	.. .5 meg	18	.. .5 meg
6	.. 25,000	19	.. 400
7	.. 300	20	.. 1,000
8	.. 50,000	21	.. 100
9	.. 150	22	.. 100
10	.. 300	23	.. 150
11	.. 5,000	VR1	.. .5 meg
12	.. 50,000	VR2	.. 50,000
13	.. .5 meg		

CONDENSERS

C	Mfds	C	Mfds
1	.. .001	16	.. 250 mmfd
2	.. .01	17	.. .005
3	.. .004	18	.. 25 mmfd
4	.. .005	19	.. 25
5	.. .1	20	.. .02
6	.. .1	21	.. 2
7	.. 50 mmfd	22	.. 25
8	.. .001	23	.. 16
9	.. 150 mmfd	24	.. .001
10	.. 150 mmfd	25	.. .03
11	.. 230 mmfd	26	.. 2
12	.. 400 mmfd	27	.. 16
13	.. 25 mmfd	28	.. .01
14	.. .02	29	.. .1
15	.. 150 mmfd	30	.. .0005

