

EKCO A22

Four valve, including rectifier, superhet for operation on AC mains of 200-250 volts, 40-80 cycles. Three wavebands and provision for external speaker. Marketed by E. K. Cole, Ltd., Southend-on-Sea. First production November, 1945. Price £14 14s., plus £3 3s. 3d. tax.

AERIAL circuit incorporates conventional IF filter C1, L1 with permeability tuning adjustment by T1. Three separate RF transformers for the three wavebands pass the signals to the grid of the triode-hexode frequency changer, V1.

The SW circuit is switched by S6 and S1 bringing permeability tuned coil L5(T3) in the grid circuit with a trimmer T2. L2 is the aerial coupling coil.

On MW S7 and S2 close, while S4 opens, removing S,C on L6, the grid iron-cored inductance,

tuned by T5. T4 is the variable trimmer. L3 is the corresponding aerial coupling coil.

LW switching is by S8 and S3 closing, while S5 removes the S C on the permeability tuned coil L7(T6). A fixed trimmer C3 is used. L4 is the aerial coupling coil.

AVC is series fed via R5 decoupled by C2. VC1 is the main RF tuning capacitor. The LW and MW grid circuits are short-circuited when not in use by S5 and S4 respectively.

V1 uses cathode bias for the hexode portion derived from R2 by-passed by C8. Screen potential is obtained from R1 decoupled by C4. The triode oscillator portion of V1 derives its HT via R7, C14 parallel feeding the tuned anode circuits.

On SW S12 closes, bringing iron-cored coil L10(T8) and fixed padder C9 across the main oscillator tuning capacitor VC2. T7 is tapped into L10. The corresponding grid coil is L8, switched by S9 to give a measure of capacitive reaction, as C9 is then common to both anode and grid circuits.

MW anode circuits are switched by S13 bringing in the iron-dust cored coil L11(T9). Both fixed and variable trimmers are used on this range (C12 and T10 respectively). C10, the fixed padder, is common to both grid and anode circuits, giving

capacitive feed-back aided by a coupling coil L9 switched by S10.

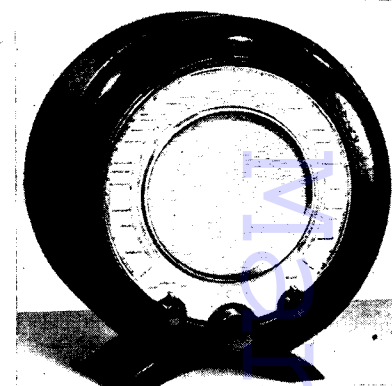
LW, switched by S14 and S11, uses another iron-dust cored coil L12(T12) with coupling to the grid circuit provided by the common impedance of the fixed padder C11. A variable trimmer T11 and a fixed trimmer C13 are used. R6 damps the tuned circuit and limits the amplitude of oscillation. Leak and condenser bias is provided by C7 and R4, R3 being a grid stopper.

V1 anode circuit is formed by C5 and a permeability-tuned coil L13(T13). The IFT secondary is made up of L14(T14) with C6 and passes the signal to the IF (V2) valve. AVC is series fed, isolated by R12 and C15. Cathode bias by R9 and C19 is utilised for V2, whose screen supply is derived via R8 decoupled by C16.

The second IFT, comprising C17 and L15, permeability tuned by T15, and C18 and L16 permeability tuned by T16, leads to the detector diode of the double-diode pentode V3. The load is R11 with C20, R10, C21 forming an IF filter.

Coupling to the pentode grid is by C24 and the volume control R13. R14 is a grid stopper. R17 provides bias for this stage.

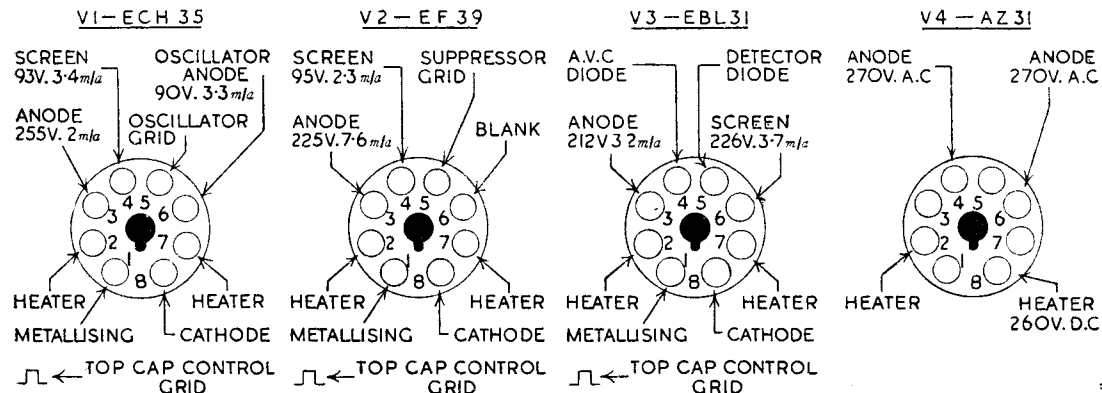
The AVC diode is driven from the IF valve anode via C22. The load is R18, and filters R12, C15



and R5, C2 feed AVC to V1 and V2. Delay is applied to the AVC diode from R16, R17 in the cathode lead decoupled by C23.

Two fixed tone control circuits are used in the V3 anode circuit—i.e., C26 from anode to cathode and R15, C25 across the OPT primary L19. A PM speaker with speech coil L17 is driven by L20 via S15. An external speaker of the 3-ohm impedance type may be used by connecting to sockets at the rear.

Mains transformer primary L21 provides tap-
Continued overleaf.



RESISTORS

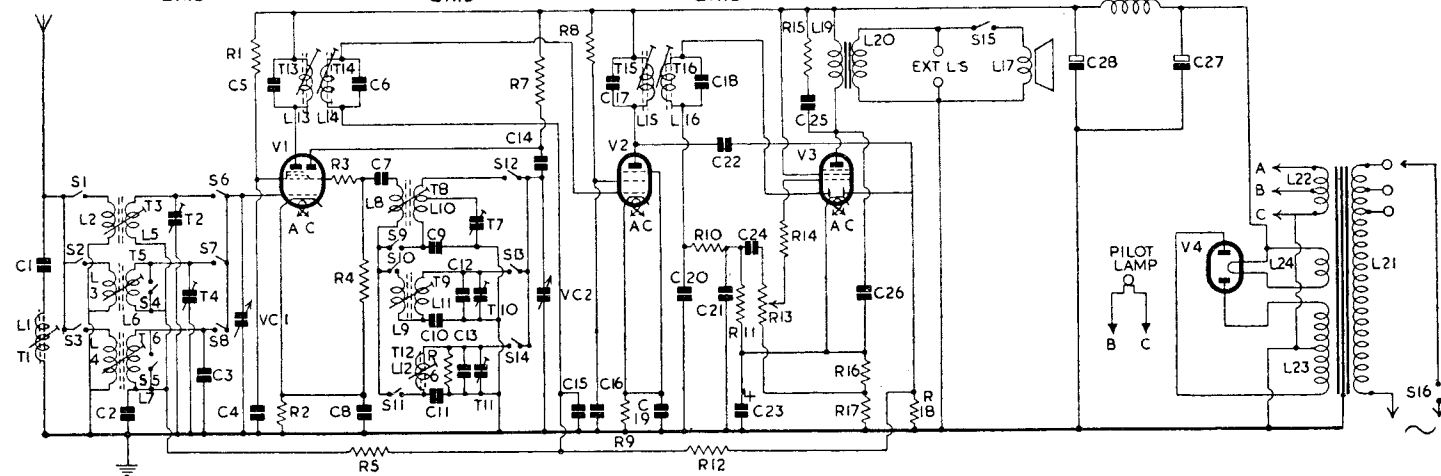
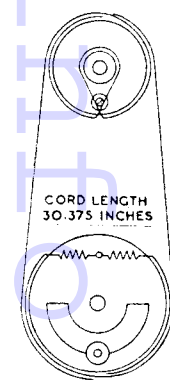
R	Ohms
1	47,000
2	150
3	47
4	47,000
5	220,000
6	15,000
7	47,000
8	68,000
9	150
10	47,000
11	330,000
12	1,000,000
13	1,000,000
14	4,700
15	5,600
16	150
17	220
18	680,000

CAPACITORS

C	Mfd	Mfd
1	.00005	.00011
2	.1	.00005
3	.0001	.05
4	.05	.05
5	.0001	.0001
6	.0001	.0001
7	.0001	.25
8	.1	.05
9	.00617	.04
10	.000485	.0025
11	.000172	.8
12	.000025	L6

INDUCTORS

L	Ohms
1	20
2	.2
3	44
4	30
5	.1
6	3
7	30
8	10.5
9	.5
10	3.2
11	6
12	10
13	10
14	10
15	10
16	10
17	2.6
18	310
19	450
20	.17
21	50 max.
22	.15 max.
23	575 plus 575
24	.15



TRIMMING INSTRUCTIONS

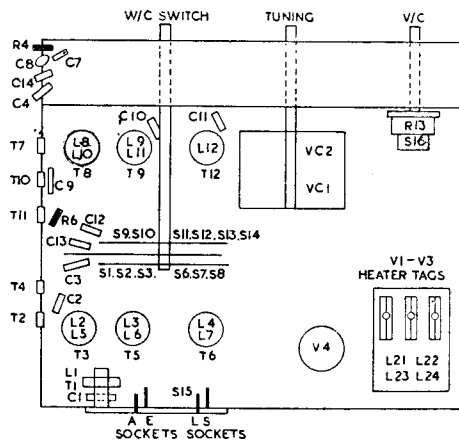
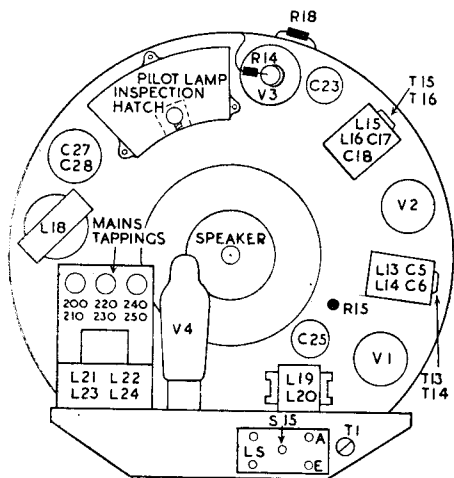
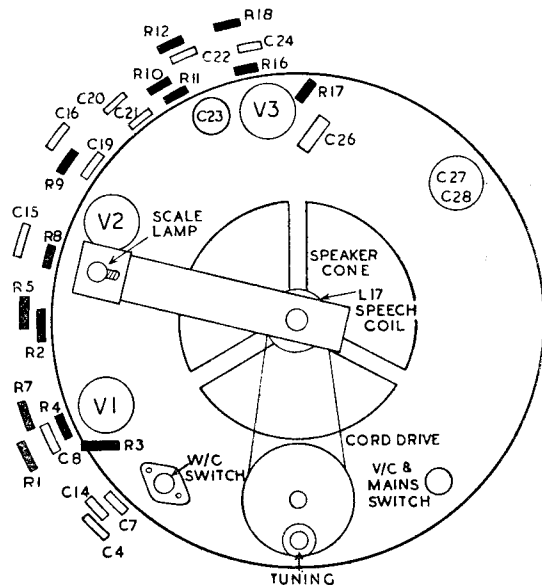
Set volume control to maximum and maintain a low input signal to avoid AVC action.

Apply Signal as Below.	Tune Receiver to (metres).	Trim in Order stated for Max. Output.
(1) 465 KC to top cap V1 via .1 mfd. leaving existing lead connected	MW 550	T16, T15, T14, T13
(2) 465 KC to A and E sockets via dummy aerial	MW 550	T1 for min.
(3) 18.75 MC to aerial socket	SW 16	T7
(4) 7.5 MC as in (3)	SW 40	T8
(5) 16.67 MC as in (3)	SW 18	T2
(6) 6.25 MC as in (3)	SW 48	T3
(7) 1500 KC as in (2)	MW 200	T10
(8) 750 KC as in (2)	MW 400	T9
(9) 1364 KC as in (2)	MW 220	T4
(10) 576.9 KC as in (2)	MW 520	T5
(11) 300 KC to Ae socket	LW 1000	T11
(12) 200 KC as in (11)	LW 1500	T12
(13) 150 KC as in (11)	LW 2000	T6

plings for 200-210, 220-230, and 240-250 volts, 40-80 cycles. A 6.3V winding L22 (tapped at 5V for the pilot lamp, which is a 6.3V .3A MES type) supplies valve heaters.

Some modifications to chassis have taken place. In some chassis, a 33K ohm damping resistor may be shunted across L11. This may be further extended to a damping resistor across L10.

First models produced had negative feedback in the output stage: the lead connecting the speech coil to earth was instead connected to junction of R16 and R17, and 22K and 33K resistors were joined in series across OPT secondary L20, the 33K resistor being at the earth end with a .1 mfd capacitor across it. Feedback was introduced by connecting the earthy end of R13 to the junction of the two additional resistors.



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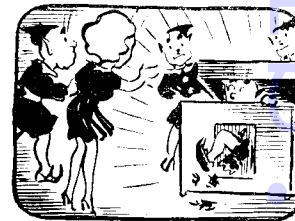
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