

# EKCO AC97

Four-valve, plus rectifier and tuning indicator, superhet receiver covering medium and long waves and for operation from 200-250 volts, 40-80 cycle AC mains. Provision of high-fidelity, medium and distant tone positions, noise suppression during tuning and pick-up connections. Made by E. K. Cole, Ltd., Service Department, Southend-on-Sea.

THE aerial input is by band-pass circuit to V1, an octode frequency-changer, T1, between the aerial and V1 grid, is the image-rejector. The triode oscillator section is tuned grid with C9 and R4 as the grid condenser and leak; L7 and L8 are the anode reaction coils. L11 and L12 are the primary and

secondary of the first IF transformer, with T2 and T3 as trimmers. S7 and S8 are switches which broaden the selectivity by introducing damping by R5, R6.

V2, the IF amplifier, is coupled by tuned transformer to V3, the double-diode triode R11 is a filter with R12, the diode load passing LF via C20 to the volume control VR1. V6, the tuning indicator, is also fed from R12.

The AVC diode is energised by C18 from V2 anode. R9 and R10 are a split load providing different control voltages for V1 and V2.

V3 has tone control condensers across the grid and resistance-capacity feeds an auto-transformer coupling L15 to V4, the output valve. L15, with C25, C27 and VR2 are a special circuit to maintain tone balance at low volume levels.

The anode circuit of V4 contains the loud-speaker input transformer and also a triple choke L16-18 and condensers C39, C40 will provide a sharp cut-off above 8 kc to reduce whistles. V4 is run from a separate 2v heater winding, and is given an electrical centre-point by the hum-dinger VR3.

The speaker field is in the negative HT line and the drop across it is tapped off by R23, R24 to bias V5. V5 is the full-wave rectifier

**Quality Switching.**—In the high fidelity position contacts E and D, F and G are open. In the medium position, E is open, D closed, F and G closed; distant position, E closed, D open, F and G closed.

**Noise Suppression.**—Contact A closes to B before B closes to C. Actuation is by depressing control knob which applies about 35 volts negative to V3 grid. At the same V4 grid circuit is shorted.

**Valves.**—V1, FC4; V2, VP4B, or Ekco VP41; V3, TDD4; V4, ACO42; V5, 1W4/350; V6, TV4. Pilot lamps, Osram 6.2 v, .3 amp.

## GANGING

See that with gang at maximum pointer coincides with top of scale aperture. If not, remove chassis and see that drive disc is against its stop. If necessary, pointer can be adjusted on cord to cover centre of reflector plate fixing screen with gang at minimum.

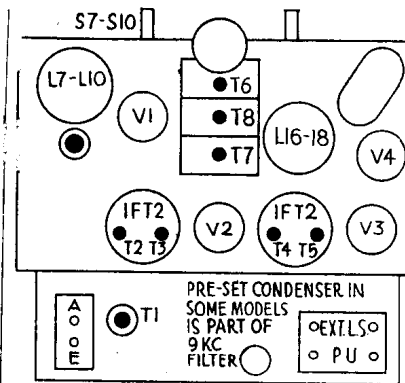
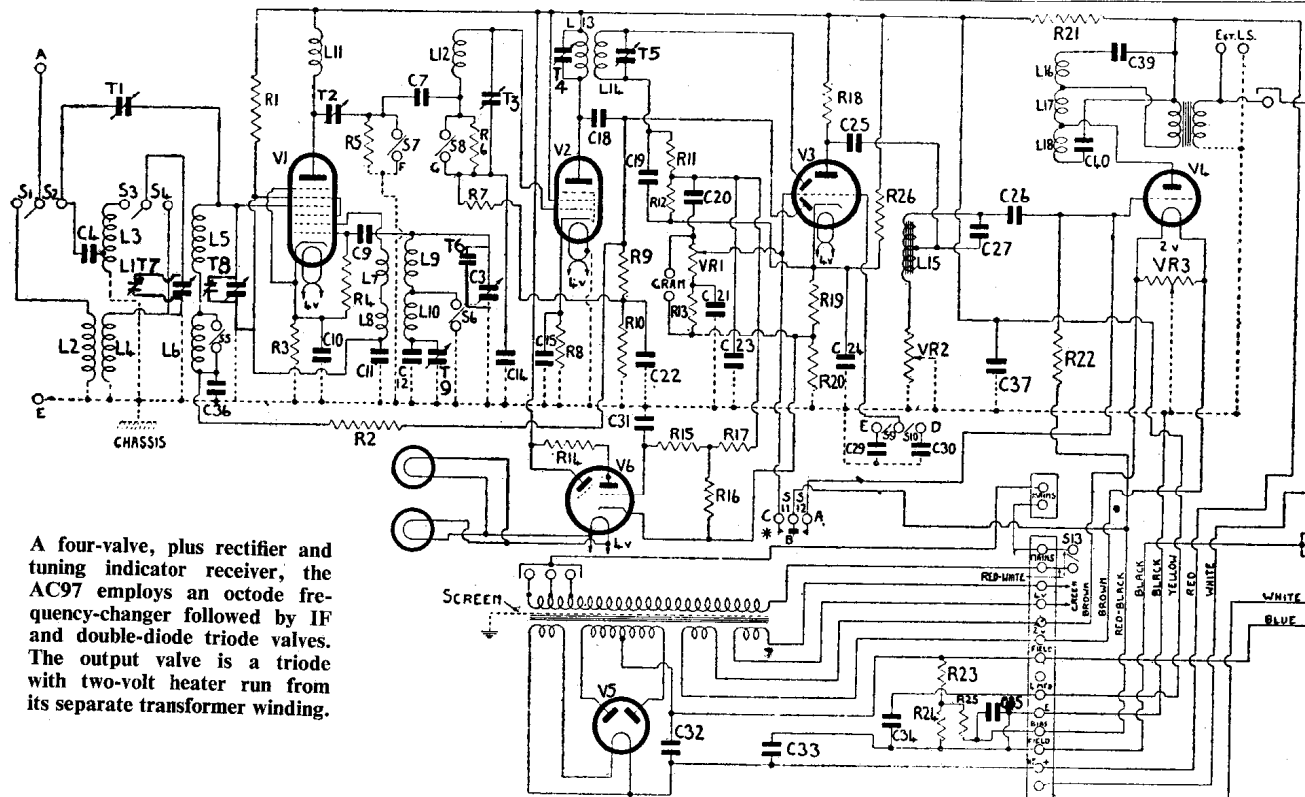


Diagram showing the top and back views of the chassis and indicating positions of the trimmers.

**IF Circuits.**—Inject 126.5 kc through .02 mfd to cap of V1, leaving grid lead connected. Turn volume to maximum. Injecting lowest possible signal, adjust T2, T4, T3 and T5 in that order for maximum on output meter.

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A four-valve, plus rectifier and tuning indicator receiver, the AC97 employs an octode frequency-changer followed by IF and double-diode triode valves. The output valve is a triode with two-volt heater run from its separate transformer winding.

Tables of valve readings are not available for some of these Ekco sets, but experienced engineers will know the kind of voltages and currents to be expected with the valves employed.

## CONDENSERS

C	Mfds
4	.0008
7	.0003
9	.0001
10	.1
11	.1
12	.0008
14	.1
15	.1
18	15 cm
19	.00012
20	.1
21	.5
22	.1
23	.00015
24	.25
25	.25
26	.25
27	.25
29	.2
30	.0015
31	.0005
32	.1
33	.8
34	.8
35	.4
36	.4
37	.1
39	.01
40	.01

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**MW Band.**—Inject and tune to 200 m (1,500 kc). Fully unscrew T6 and then screw in slowly until maximum is obtained. Inject and tune 250 m (1,200 kc) and adjust T7 and T8 for maximum.

**LW Band.**—Inject and tune to 1,700 m (170.6 kc) and adjust T9 for maximum.

**Image Rejector.**—Time to second channel whistle and adjust T1 for minimum.

## RESISTANCES

R	Ohms	R	Ohms
1	20,000	16	.25 meg.
2	1 meg	17	1 meg
3	300	18	50,000
4	100,000	19	600
5	3,000	20	2,000
6	6,000	21	4,000
7	1 meg	22	100,000
8	300	23	100,000
9	.25 meg	24	30,000
10	.5 meg	25	100,000
11	50,000	26	100,000
12	.25 meg	VR1	.5 meg
13	2 meg	VR2	50,000
14	2 meg	VR3	30
15	.5 meg		