

CONFIDENTIAL.

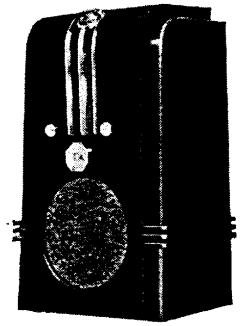
SERVICE MANUAL

Price 6d.

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EKCO



MODEL AC97
HIGH FIDELITY CONSOLE SET

GENERAL DESCRIPTION.

Model AC97 is a nine stage five valve superheterodyne for 200/250 volt 40-80 cycle A.C. mains.

Valves: See Fig. 2. **I.F.:** 126.5 kc/s. **Consumption:** 65 watts. **Scale lamps:** Osram 6.2 volt .3 amp. screw cap type.

This receiver incorporates a special high fidelity circuit of which the features are:—

Broadened I.F. acceptance band. Obtained by introducing damping (R5, R6) in primary and secondary circuits of 1st I.F. transformer.

Tone compensated volume control. A specially designed choke (L15) in conjunction with capacity network (C25-C27) and variable resistance (VR2) maintains tone balance at low volume levels.

Tuned rejector at 9 kc/s. Special triple tapped air cored choke (L16-18) in conjunction with condensers (C39, C40) introduces a sharp cut-off above 8 kc/s.

Note. In early models a low pass filter was used in place of L16-18, together with a tapped air cored choke and pre-set condenser combination across the input to V4.

"MYSTIC EYE" TUNING INDICATOR.

A negative voltage proportional to signal strength causes the "eye" to open. The metal sleeve around the Tuning Indicator is to shield it from scale lamp illumination. Ensure that the sleeve is pushed to the top of the tube and that the lengthwise opening faces away from scale lamps.

PRESS BUTTON NOISE SUPPRESSOR.

The Press Button Noise Suppressor operates by pressure on the main tuning control closing the leaf type switch (S11, S12), which shortcircuits the input to V4 and applies a paralysing negative bias (about 35 volts) to the grid of V3. The momentary pressure silences the set for about two seconds, thus giving complete Noise Suppression while tuning is carried out with the "Mystic Eye."

IMAGE REJECTOR.

When the instrument is operated within about fifty miles (distance depends on local reception conditions) of:

1. London Regional 2. West Regional 3. Radio Normandie
a second channel whistle may be heard on Brussels (483.9 metres), Budapest (549.5 metres) or Strasbourg (349.2 metres) respectively. A *non-metallic* screwdriver, such as a piece of appropriately shaped wood, must be used when setting the Image Rejector (C5 Fig. 2) for minimum whistle.

Note. C5 is correctly set at the factory, and should not be adjusted unless a whistle seriously interferes with reception from one of the stations indicated.

RE-CALIBRATING.

Turn gang condenser to maximum. Pointer should normally coincide with top of scale aperture when at limit of its travel.

If it does not, remove chassis from cabinet and check that drive disc is against its stop. (Disc may be adjusted on gang condenser spindle after loosening grub screws in boss). If necessary, the pointer should be adjusted on the cord to cover centre of reflector plate fixing screw when the gang condenser is at minimum setting.

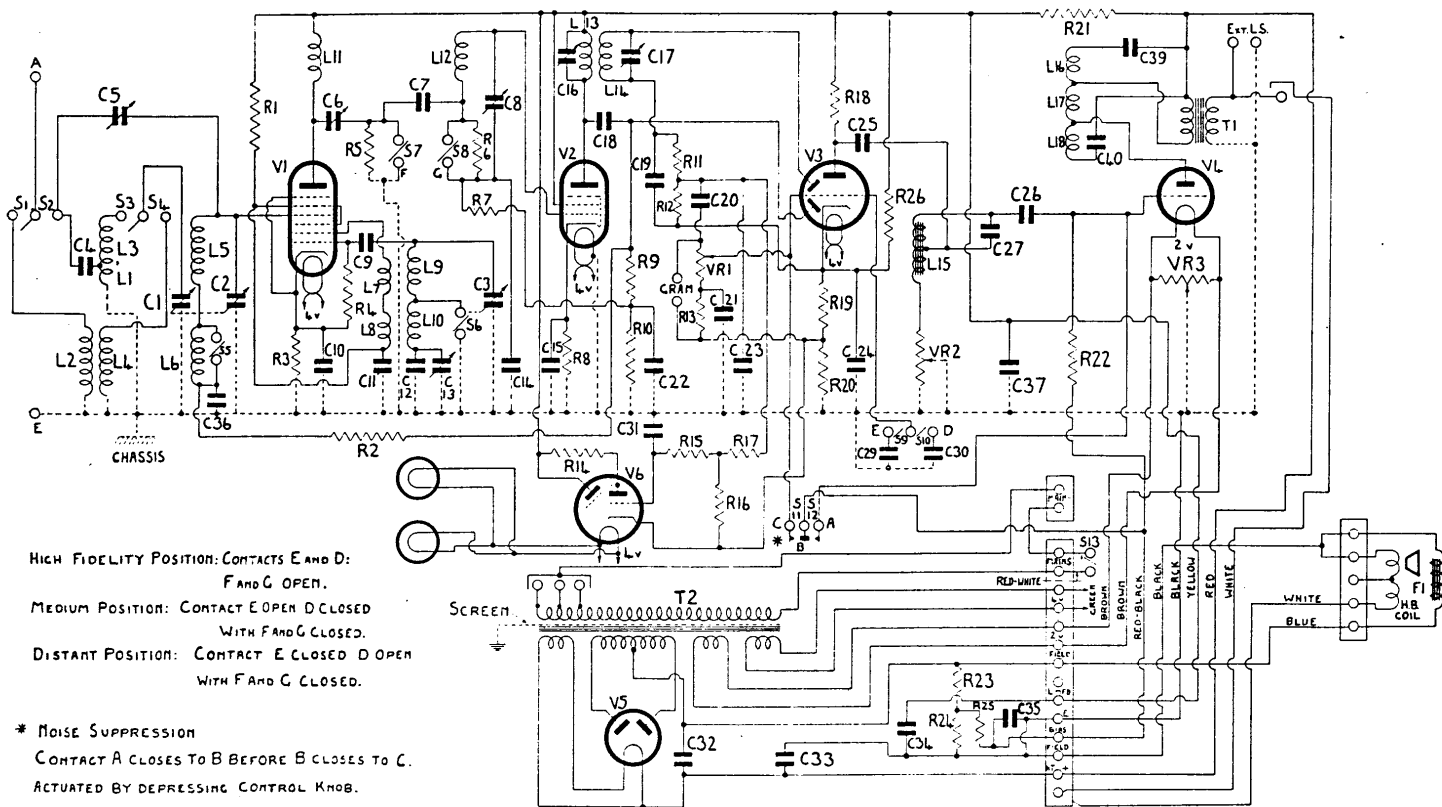


Fig. 1. Circuit diagram of Ekco AC97.

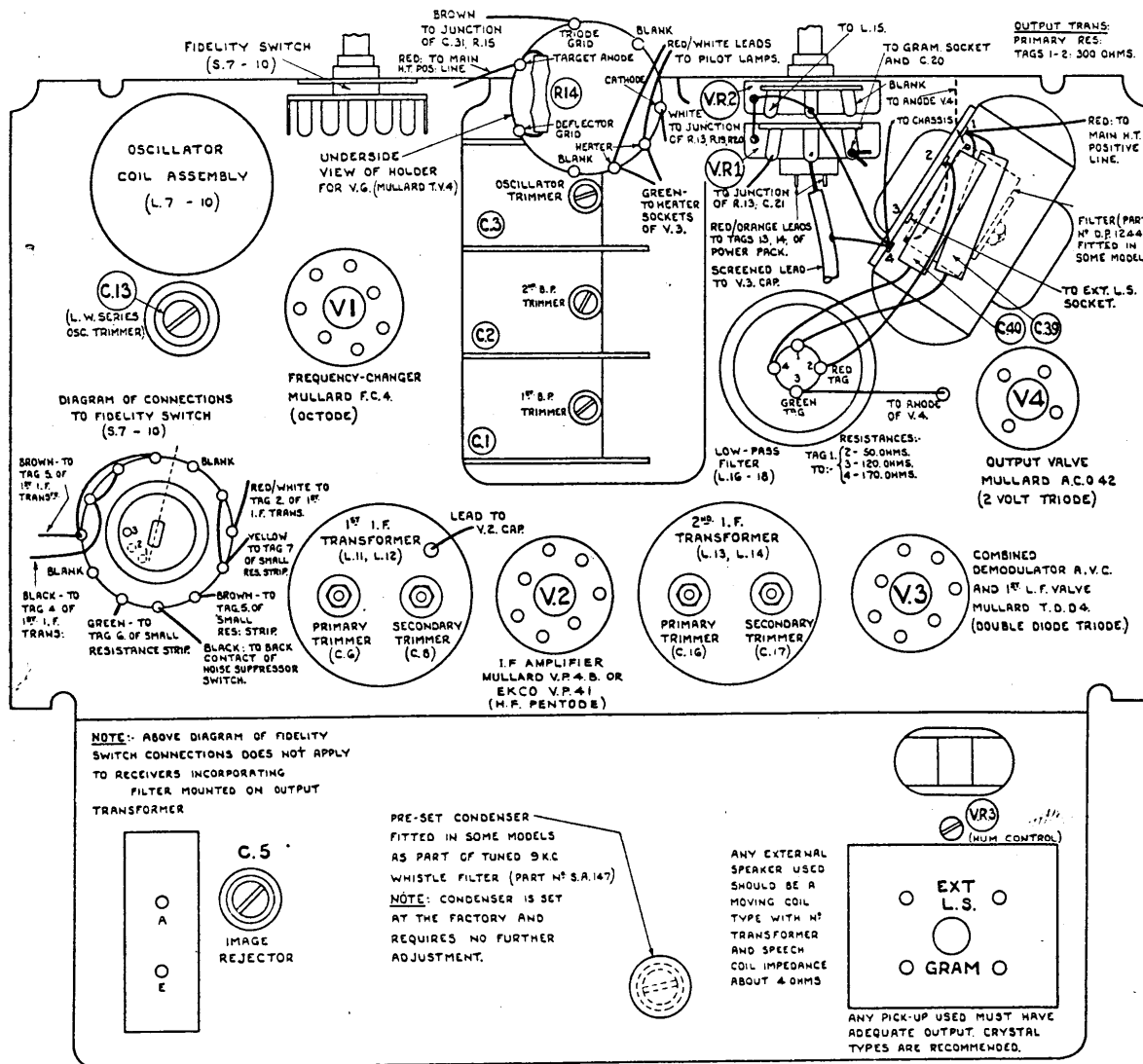


Fig. 2. Top of chassis.

CIRCUIT KEY AND PRICE LIST.

Ref. No.	Description.	Part No.	Price.	Ref. No.	Description.	Part No.	Price.
L1	M.W. aerial primary	B.P. filter (including SA143 wave switch)	9/6	C31	.1 mfd. condenser	A3844	9d.
L2	L.W. aerial primary			C32	8 " wet electrolytic condenser	B6217	5/6
L3	1st B.P. M.W. coil			C34	4 " dry electrolytic	B6218	5/6
L4	1st B.P. L.W. coil			C33	8 " condenser block		
L5	2nd B.P. M.W. coil			C35	4 " dry electrolytic condenser	A4280	2/3
L6	2nd B.P. L.W. coil			C36	.1 " condenser	A3844	9d.
L7	M.W. anode coil	C37	.1 " " " " "	A3844	9d.		
L8	L.W. anode coil	C39	.01 " " " " "	B6869	9d.		
L9	M.W. grid coil	C40	.01 " " " " "	B6869	9d.		
L10	L.W. grid coil	R1	20,000 ohm resistance	A6449	9d.		
L11	Primary	R2	1 megohm	A6123	9d.		
L12	Secondary	R3	300 ohm	A6129	9d.		
L13	Primary	R4	100,000 " "	A6122	9d.		
L14	Secondary	R5	3,000 " "	A6122	9d.		
L15	Bass boost choke	R6	6,000 " "	A6122	9d.		
L16-18	Low pass filter	R7	1 megohm	A6123	9d.		
C1	1st B.P. section	R8	300 ohm	A6129	9d.		
C2	2nd B.P. section	R9	1/2 megohm	A6129	9d.		
C3	Oscillator section	R10	1/2 " "	A6122	9d.		
C4	.0008 mfd. condenser	R11	50,000 ohm	A6122	9d.		
C5	Image rejector condenser	R12	1/2 megohm	A6122	9d.		
C6	1st. I.F. primary trimmer	R13	2 " "	A6121	9d.		
C7	.0003 mfd. condenser	R14	2 " "	A6121	9d.		
C8	1st I.F. secondary trimmer	R15	1/2 " "	A6123	9d.		
C9	.0001 mfd. condenser	R16	1/2 " "	A6123	9d.		
C10	.1 " "	R17	1 " "	A6123	9d.		
C11	.1 " "	R18	50,000 ohm	A6449	9d.		
C12	.0008 " "	R19	600 " "	A6126	9d.		
C13	L.W. series osc. trimmer	R20	2,000 " "	A6122	9d.		
C14	.1 mfd. condenser	R21	4,000 " "	A6449	9d.		
C15	.1 " "	R22	100,000 " "	A6121	9d.		
C16	2nd I.F. primary trimmer	R23	100,000 " "	A6121	9d.		
C17	2nd I.F. secondary trimmer	R24	30,000 " "	A6121	9d.		
C18	15 cm. condenser	R25	100,000 " "	A6123	9d.		
C19	.00012 mfd. condenser	R26	100,000 " "	A6450	9d.		
C20	.1 " "	VR1	1/2 megohm variable resistance	volume control B6177	8/6		
C21	.5 " "	VR2	50,000 ohm " "				
C22	.1 " "	VR3	30 ohm "Humdinger" " "			DP990	9d.
C23	.00015 " "	T1	Output transformer	SA169	7/6		
C24	25 mfd. electrolytic condenser	T2	Mains transformer	SA164	17/6		
C25	.25 mfd. condenser	S1-6	Wave switch (see B.P. filter)				
C26	.25 " "	S7-10	Fidelity switch	B6187	2/6		
C27	.2 " "	S11-					
C29	.0015 mfd. condenser	12	Noise suppressor switch				
C30	.0005 " "	S13	On/off switch (ganged to VR1/VR2)				
Cabinet (walnut)		DP1011	30/-	Wave switch knob (walnut)	C6184	9d.	
" (black)		DP1011/1	37/6	" " " (ivory)	C6184/1	1/-	
Escutcheon (walnut)		D6719	2/6	Back cover " " (ivory)	E6215	2/6	
" (ivory)		D6179/1	3/6	Mains lead assembly	DP196	2/6	
Tuning knob (walnut)		DP1015	1/6	Scale	C6235	2/6	
" (ivory)		DP1015/1	2/6	Reflector plate	C6228	1/-	
Volume control knob (walnut)		C6184	9d.	Pilot lamp	P2445	9d.	
" (ivory)		C6184/1	1/-	Speaker	D6581	35/-	
Fidelity switch knob (walnut)		C6183	9d.	Pointer	A6097	6d.	
" " (ivory)		C6183/1	1/-	Cable and tag strip assembly	DP1080	2/6	

All prices quoted in this manual are retail. They are subject to alteration without notice.

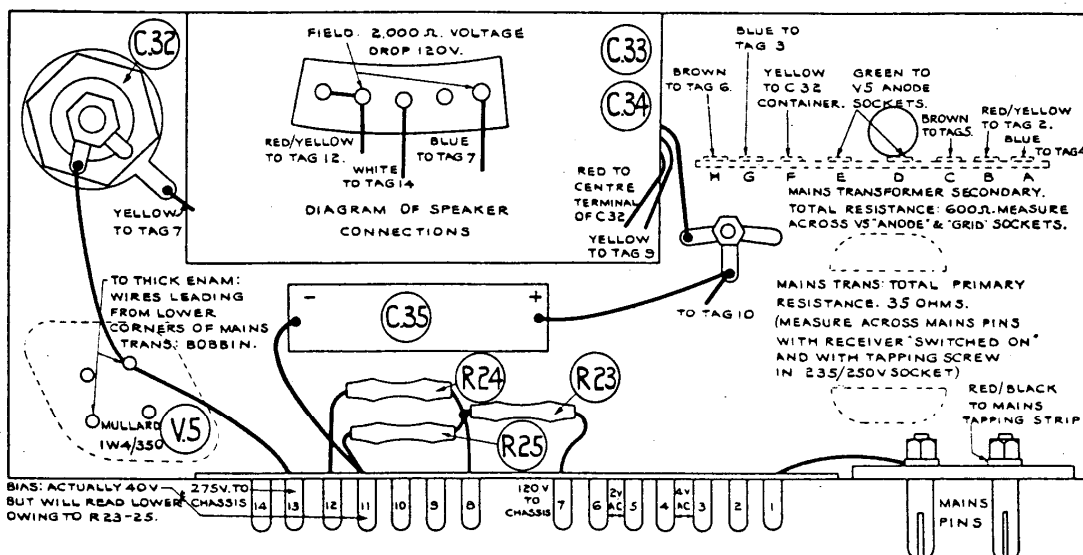


Fig. 3. Underside of power pack.

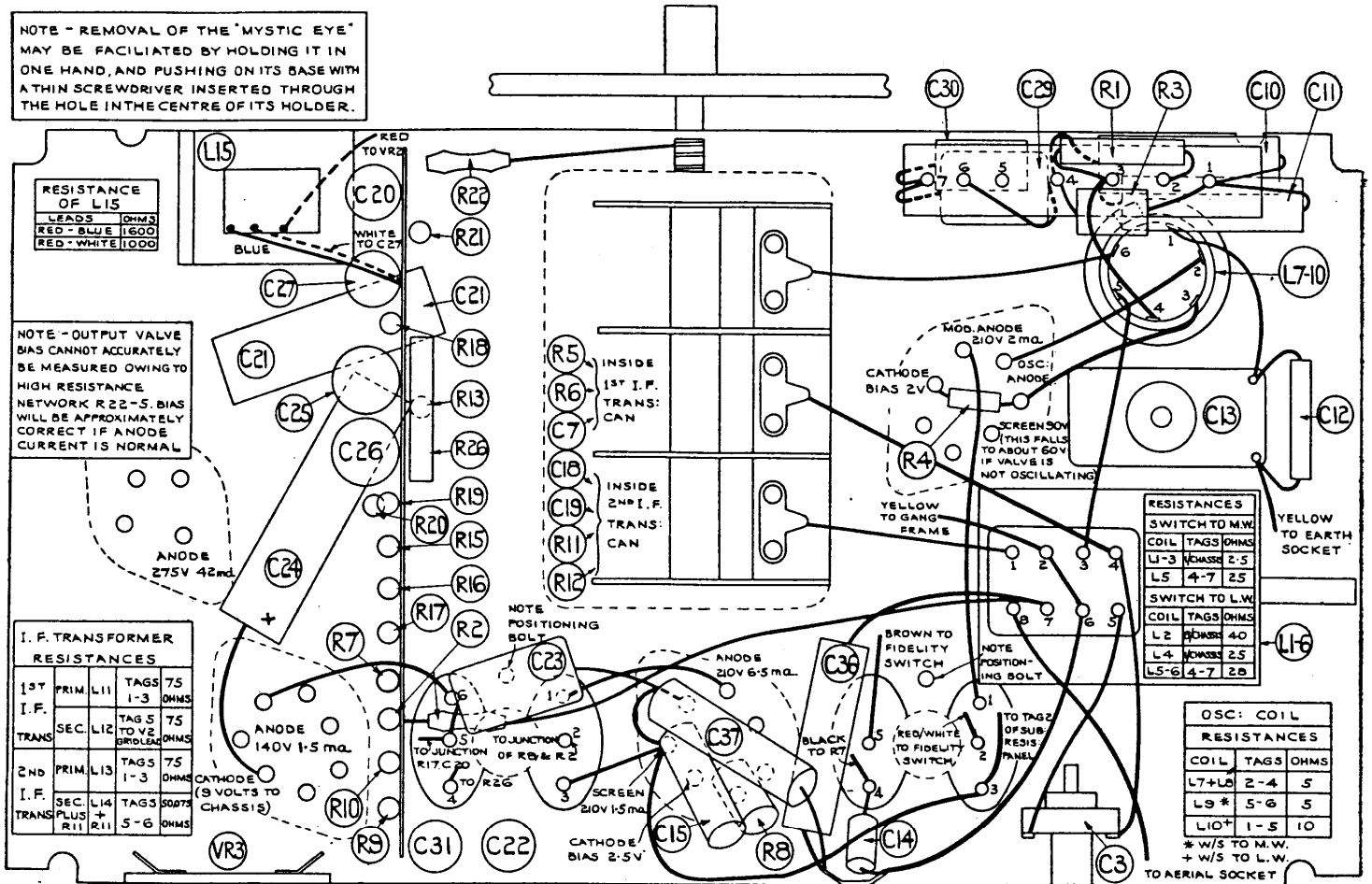


Fig. 4. Underside of chassis.

RE-ALIGNING AND RE-GANGING.

An accurately calibrated service oscillator, 0-5 volt output meter and 6 B.A. insulated trimming tool are required.

Note. Always use the minimum oscillator input consistent with reliable meter reading. Excessive input will actuate the A.V.C. and make it difficult to "peak" the various trimmers accurately.

Re-aligning.

Connect output meter across EXT. L.S. sockets. Set service oscillator to 126.5 kc/s. Connect one lead to "E" socket, and the other through a .02 mfd. condenser to the cap. of V1 (leave grid lead connected). Turn volume control to maximum.

Adjust C6, C16, C8 and C17 (Fig. 2) in that order to obtain maximum meter reading. After adjusting C17, re-check adjustment of all four.

Re-ganging.

Check calibration (see page 1). Connect service oscillator to "A" and "E" sockets. Tune receiver to 200 metres (1,500 kc/s.).

Fully unscrew oscillator trimmer (Fig. 2); then screw it in slowly until maximum meter reading is obtained.

Set service oscillator to 250 metres (1,200 kc/s.) and tune receiver for maximum meter reading. Adjust second and first bandpass trimmers (Fig. 2) in that order for maximum meter reading.

Set both oscillator and receiver to 1,700 metres (170.6 kc/s.). Adjust L.W. series trimmer (C13 Fig. 2) for maximum meter reading, meanwhile "rocking" gang condenser.

Important Note. The speaker has an exceptionally wide frequency response, and is capable of reproducing harmonics caused by overloading of V4 which would not be heard on an ordinary speaker.

In early models, with Fidelity Control at position 1 and volume in excess of domestic requirements, this becomes apparent as a slight "rattle," which should not be confused with the mechanical rattle caused by an uncentred speech coil.

"SERVICE," E. K. COLE LTD., EKCO WORKS, SOUTHEND-ON-SEA.

Scottish Service Depot: 27, Cadogan Street, Glasgow, C.2.

Manchester Service Depot: Bombay House, 59, Whitworth Street.
(Goods address: 7, Bombay Street.)

Bristol Service Depot: 14, Redcross Street.

Telephone: Southend 49491.

Telephone: Central 5357/8.

Telephone: Central 6711/2.

Telephone: Bristol 22269.