

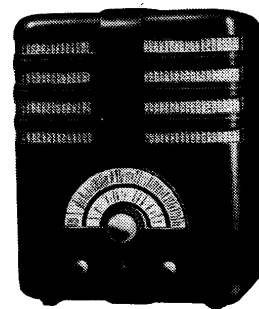
SERVICE MANUAL

Price 6d.

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EKCO



MODEL AD38
UNIVERSAL RECEIVER

GENERAL DESCRIPTION.

Model AD38 is a straight three valve (plus rectifier) receiver for operation on 200/250 volts D.C. or 200/250 volts 40-80 cycle A.C. mains.

Consumption: (230 volts input) A.C.—67 watts; D.C.—60 watts.

Valves specified:—

- V1.** H.F. amplifier (variable-mu. H.F. pentode)—Mullard VP13C or Ekco VPUI.
- V2.** Detector (H.F. pentode)—Mullard SP13C.
- V3.** Output valve (steep-slope pentode)—Mullard Pen36C.
- V4.** Rectifier (half-wave type)—Mullard UR1C.

CIRCUIT.

The aerial is coupled to the first valve through an iron-cored transformer with aperiodic high-impedance primaries. The volume control (VR1) is a 10,000 ohm variable resistance connected in the cathode circuit of the H.F. amplifier (V1) and varies the bias on the grid of this valve. A "bleeder" resistance (R2) increases the voltage drop across VR1 and gives a wider control of volume.

Coupling between V1 and V2 is by an iron-cored H.F. transformer, and the high degree of selectivity resultant upon using this type of core can be further increased by means of the "Sensitivity Control," which is a variable condenser (C7) introducing reaction between anode and grid circuits of V2 via the H.F. transformer.

There are no gang condenser trimmers, alignment of medium and long wave circuits being very accurately obtained by means of trimmers mounted in the relative coil cans.

The detector valve is resistance-capacity coupled to the output valve (V3), in the anode circuit of which is the primary of the output transformer T1. The latter, which is tone-corrected by R12 and C15, is mounted on the receiver chassis, and includes in its secondary circuit the speaker switch (insulated head screw) together with the Extension Speaker sockets. Any extension speaker used must be of about three ohms impedance.

The output from the rectifier is smoothed by a wet electrolytic condenser (C18), dry electrolytic condenser (C17) and L.F. choke (L10). On the latter is mounted a panel carrying (a) half amp. cartridge type fuse to protect the smoothing condensers should the rectifier valve short-circuit internally, and (b) fifty ohm resistance (R9) to protect the rectifier from high surge currents caused if the receiver is suddenly switched off and on again after a period of use.

A one amp. fuse is fitted in each side of the mains lead.

Condensers C19, C20 and filter coils L11, L12 are incorporated to minimise mains-borne H.F. interference. In no circumstances should the chassis of the receiver be connected to earth, or L11, L12 will be damaged.

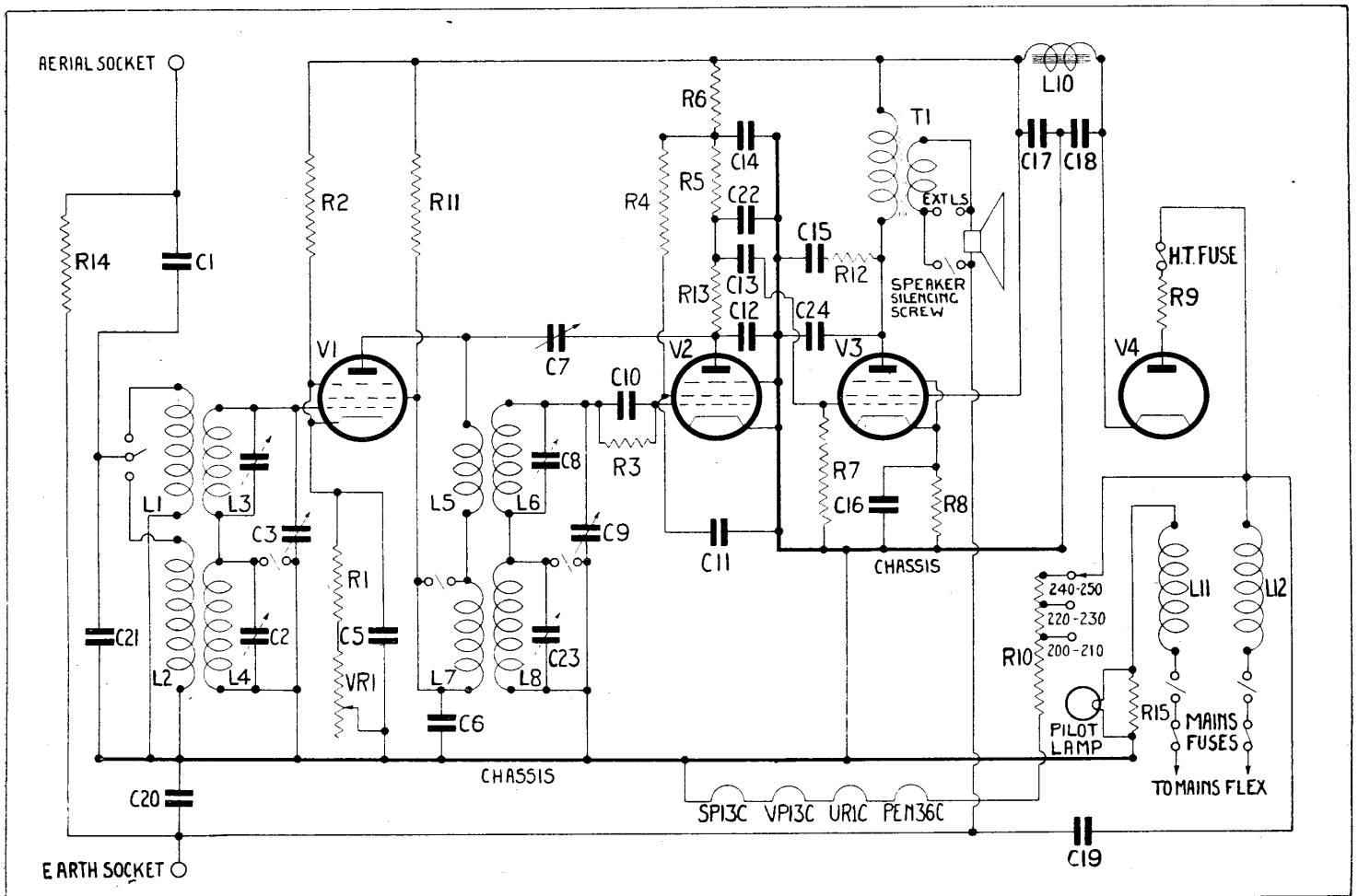


Fig. 3. Circuit diagram of Ekco AD38.

CIRCUIT KEY AND PRICE LIST.

Ref.	Description.	Part No.	Price.	Ref.	Description.	Part No.	Price.
L1	M.W. Prim.	Aerial Coil assembly ...	5/6	C17	24 mfd. dry electrolytic condenser ...	—	—
L2	L.W. Prim.			C18	8 mfd. wet electrolytic condenser ...	B6620	5/6
L3	M.W. Sec.			C19	.1 mfd. condenser ...	A3844	1/-
L4	L.W. Sec.			C20	.1 mfd. condenser ...	A5996	1/-
L5	M.W. Prim.	H.F. trans. assembly ...	8/6	C21	.00015 " " " " ...	A5747	9d.
L6	M.W. Sec.			C22	.0003 " " " " ...	A5747	9d.
L7	L.W. Prim.			C24	H.F. trans. L.W. trimmer ...	—	—
L8	L.W. Sec.			C24	.01 mfd. condenser ...	B7071	1/-
L10	L.F. choke ...	SA193	6/-	R1	140 ohm resistance ...	A6122	9d.
L11	Filter coil Mains filter	SA73	3/-	R2	30,000 " " " " ...	C6974	9d.
L12	Filter coil assembly	SA73	3/-	R3	2 megohm " " " " ...	A6122	9d.
C1	.0012 mfd. condenser ...	A5747	1/-	R4	250,000 ohm resistance ...	A6445	9d.
C2	Aerial coil L.W. trimmer ...	—	—	R5	100,000 " " " " ...	A6445	9d.
C3	Aerial section of gang ...	—	—	R6	25,000 " " " " ...	A6122	9d.
C4	Aerial coil M.W. trimmer ...	—	—	R7	500,000 " " " " ...	A6122	9d.
C5	.25 mfd. condenser ...	A6028	1/-	R8	165 " " " " ...	A6129	1/-
C6	.15 " " " " ...	A6019	1/-	R9	50 " " " " ...	A6000	1/-
C7	Sensitivity condenser ...	DP1097	1/6	R10	Mains resistance ...	DP1095	5/6
C8	H.F. trans. M.W. trimmer ...	—	—	R11	10,000 ohm resistance ...	A6122	9d.
C9	H.F. trans. section of gang ...	—	—	R12	10,000 " " " " ...	A6449	9d.
C10	15 cm. condenser ...	A5422	1/-	R13	10,000 " " " " ...	A6449	9d.
C11	.1 mfd. " " " " ...	A3844	1/-	R14	50,000 " " " " ...	A6123	9d.
C12	.0002 mfd. " " " " ...	A5747	9d.	R15	100 " " " " ...	A6000	1/-
C13	.1 mfd. " " " " ...	A3844	1/-	VR1	10,000 ohm volume control (incorporating "On-off" switch)	C6947	5/-
C14	2 mfd. dry electrolytic condenser ...	—	—	T1	Output transformer ...	SA135	8/6
C15	.01 mfd. condenser ...	A3846	1/-				
C16	50 mfd. dry electrolytic condenser ...	A5982	3/6				

All prices are retail and subject to alteration without notice.

CALIBRATION AND ALIGNMENT.

Re-calibrating. The scale pointer should normally cover the 560 metre mark when the gang condenser is turned to its electrical maximum. If it does not, remove the tuning knob, loosen the two small screws found in the front of the pointer mounting plate, and turn the pointer through the desired angle.

Re-ganging.

1. Check calibration as above.
2. Connect a 0-5 volt output meter to external speaker sockets.
3. Switch receiver to the medium wave band and tune to 250 metres.
4. Set volume control at maximum and turn the sensitivity control until the receiver is just short of oscillating point.
5. Inject via the receiver aerial and earth sockets a 1,200 kc/s. (250 metre) signal from a modulated oscillator having an output capacity of .0002 mfd.
6. Adjust C8, C4 (see Fig. 1) for maximum output meter reading.
7. Switch receiver to the long wave band and tune to 1,090 metres.
8. Re-adjust the sensitivity control if necessary so that the receiver is just short of oscillating point.
9. Set oscillator to 275 kc/s. and adjust C23, C2 (see Fig. 1) for maximum output meter reading.

Note. If it is found necessary to reduce meter reading, this should be done by retarding the oscillator attenuator and not by means of the receiver volume control.

OTHER PRICES.

Dry electrolytic condenser block ...	A6962	5/6							
Gang condenser (less drive) ...	D6930	11/6		Cabinet {	Walnut ...	DP1260	26/6		
Gang condenser drive ...	—	1/9			B. & C. ...	DP1260/1	30/-		
Pilot lamp carrier (including cowl) ...	C7278	1/6		Tuning knob {	Walnut ...	DP969	9d.		
Pilot lamp ...	P2445	9d.			B. & C. ...	DP1934	1/-		
Loudspeaker ...	DP1264	25/-		Volume control knob {	Walnut ...	DP967	9d.		
Loudspeaker baffle ...	D6922	1/-			B. & C. ...	DP1382	1/-		
Wave-switch ...	B6936	2/6		Wave-switch knob {	Walnut ...	DP968	9d.		
Glass scale ...	C7020	3/-			B. & C. ...	DP1392	1/-		
Mains fuse (1 amp.) ...	A5075/1	6d.		Sensitivity knob {	Walnut ...	DP1261	9d.		
H.T. fuse (½ amp.) ...	B7228	6d.			B. & C. ...	DP1261/1	1/-		
				Back cover	E6567	3/-		

SERVICE PROCEDURE.

Before consigning a receiver to any Ekco service depot, make quite certain that the trouble is not due to a faulty valve or other very minor defect, otherwise a minimum charge of 7/6 will be made for expenses in testing, handling, packing and carriage.

If it proves necessary to return a receiver or component part, *the customer's guarantee registration card must be enclosed.* Free repairs to a receiver, or replacement of a component part, cannot be effected if the guarantee has expired or the instrument has not been registered by the customer. In the latter connection please note that cards forwarded to us must be those originally issued with the receiver concerned. If they are not available for any reason, application should be made to us for duplicates. *Altered cards taken from other receivers will not be accepted by us for registration purposes.*

Stock receivers, or parts thereof, returned for repair must include the instruction booklet and blank guarantee card.

"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.