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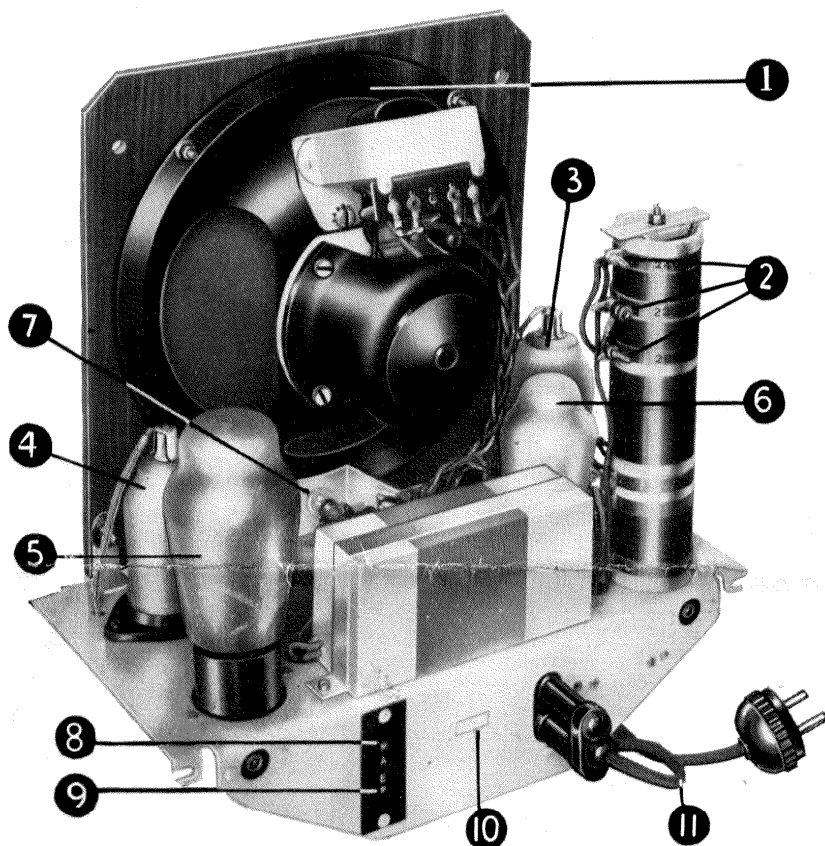
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SERVICE INFORMATION

Ekco

MODEL AD36

CONSOLETTA RECEIVER



AD 36 Chassis

Universal model for A.C. or D.C. mains, 200-250 volts.

1. Speaker mounted in cabinet.
2. Mains voltage adjustment.
3. H.F. amplifier valve.
4. Detector valve.
5. Output pentode.
6. Rectifier valve.
7. Pilot light.
8. Aerial socket.
9. Earth socket.
10. Serial number (to be quoted in all correspondence).
11. Mains lead.

WARNING

As the chassis is alive, great care must be taken in handling when back is off, or when chassis is removed from cabinet for test purposes. This particularly applies to sets working on A.C. mains or, in the case of D.C. mains, where the positive main is earthed.

When working on A.C., it is necessary as an extra precaution, to insert the plug in the mains socket so that the chassis is at earth potential. Test by connecting a condenser of about .25 mfd. in series with the earth lead and touch chassis with bare end of wire. If a flash occurs, reverse the mains plug.

IMPORTANT. This test must NOT be carried out unless condenser is fixed as above, otherwise should polarity of mains be such that chassis is alive, one of the filter coils will be burned out on touching chassis with earth wire as described.

Do not forget (a) to replace back, (b) fill grub screw holes on control knobs with wax after re-fitting.

DESCRIPTION OF CIRCUIT

MAINS CONSUMPTION

A.C.230 volts input (plug in 220-230 volt tap) 290-305 m/a.

D.C.230 volts input (plug in 220-230 volt tap) 280-295 m/a.

VALVES

1. High Frequency Amplifier.

This valve is an H.F. Pentode, the approved type being a Mullard SP13. It is fitted with a seven contact base, the control grid being connected to a cap on top of valve.

2. Detector.

This valve is a standard triode, the approved type being a Mullard HL13. It is fitted with a seven contact base, the grid being connected to a cap on top of valve.

3. Output Valve.

This valve is a L.F. Pentode, the approved type being a Mazda Pen 3520. It is fitted with a seven pin base.

4. Rectifier.

This is a Brimar 1D5 half wave rectifier fitted with a standard five pin base.

INPUT CIRCUIT

Single tuned circuit with aerial input volume control. A choke is switched in circuit when receiver is operating on long waves and prevents break through of medium waves.

The input coils are mounted in a screening can. (On right, viewed from rear of chassis).

DETECTOR COUPLING

Detector is choke capacity coupled to tuned grid circuit on medium wave band, and transformer coupled on long wave band.

Reaction is obtained by feed back from V2 through condenser C4 and long and medium wave reaction coils L6 and 7.

The long wave primary, medium wave detector grid, long wave detector grid, and medium and long wave reaction coils are wound on one former and enclosed in a screening can. (On left, viewed from rear of chassis).

OUTPUT STAGE

Resistance capacity coupled to preceding valve.

MAINS FILTER

This consists of two Leeson wound (coils L13 and 14) and a condenser (C19).

POWER SUPPLY

When the receiver is used on A.C. mains, half wave rectification is employed.

When used on D.C. the rectifying valve is unnecessary but as it passes current continuously so long as the anode is maintained at a positive potential, it is left in circuit to avoid switching complications. It must not be short circuited on D.C. as the polarity of the electrolytic condensers is not reversible. All valve heaters are connected in series, mains voltage being reduced by resistance R8/b/c/d.

TO REMOVE CHASSIS FROM CABINET

(In this model the tuning scale and loudspeaker are fixed to cabinet)

1. Detach back by undoing five special screws, and lift slightly before removing to avoid fouling mains resistance.
2. Remove front control knobs and wavechange switch knob by slackening grub screws.
3. Remove nut holding mains switch and push switch through hole.
4. When tuning knob is removed, a part of the dial pointer assembly will be visible. Slacken the two round headed screws in pointer mounting slots and manipulate pointer so that it clears scale.
5. Remove two screws in brackets holding chassis to speaker baffle. Also two screws in back of chassis, holding chassis to internal ribs of cabinet.
6. Unsolder flexible leads from output transformer. Chassis can then be withdrawn.

GANGING AND CALIBRATION

To gang, it is not necessary to remove chassis from cabinet, as ganging adjustments can be made through apertures specially provided for the purpose. Medium Wave Ganging Adjustment is under *base* of receiver and Long Wave Ganging Adjustment at *rear* of chassis. As ganging is critical, care should be taken in making adjustments.

MEDIUM WAVE GANGING

1. Turn cabinet on its side, revealing two apertures in base, one to front of receiver, the other to rear.
 2. Tune in a medium signal on about 250/260 metres.
 3. Adjust aerial trimmer (*front* aperture) for maximum sensitivity.
 4. Adjust grid coil trimmer (*rear* aperture) also for maximum sensitivity.
- Once trimmers have been set, no further adjustments should be made.
Calibration on medium wave band can be effected by adjustment of scale pointer.

LONG WAVE GANGING

1. Tune in a signal on about 1500 metres.
2. Adjust condenser C10 (*lower* aperture in rear of chassis) for maximum sensitivity, meanwhile checking calibration of tuning scale.

BALANCED ZERO AERIAL

This consists of a backing-off coil, wound on the aerial end of the input coil former and connected through a pre-set condenser (C5) between aerial and earth. Adjustment of this condenser gives zero as minimum volume. To adjust condenser, proceed as follows.

1. Tune in a loud signal on medium waveband.
2. Set volume control to minimum position.
3. Set reaction to maximum usable position.
4. Adjust condenser C5 (*top* aperture in rear of chassis) until signal is at minimum or disappears altogether.

POSSIBLE FAULTS

Weak Distorted Output.

Cause : Bias resistance open circuited.

Low Output.

(a) Faulty valve. (b) Incorrect ganging. (c) Faulty aerial.

Crackle.

- (a) Loose pilot light. (d) Internal intermittent short in fixed condenser.
(b) Noisy valve.
(c) Loose connection, or valve loose in socket. (e) Bad joint. (f) Outside interference.

VALUES AND VOLTAGES

H.F. VALVE

Anode volts	...	...	...	190
Anode Current	...	...	...	6 m/a
Screen volts	...	...	...	190
Screen current	...	...	...	2.4 m/a

DETECTOR VALVE

Anode volts	...	...	...	41
Anode current	...	...	...	2.5 m/a

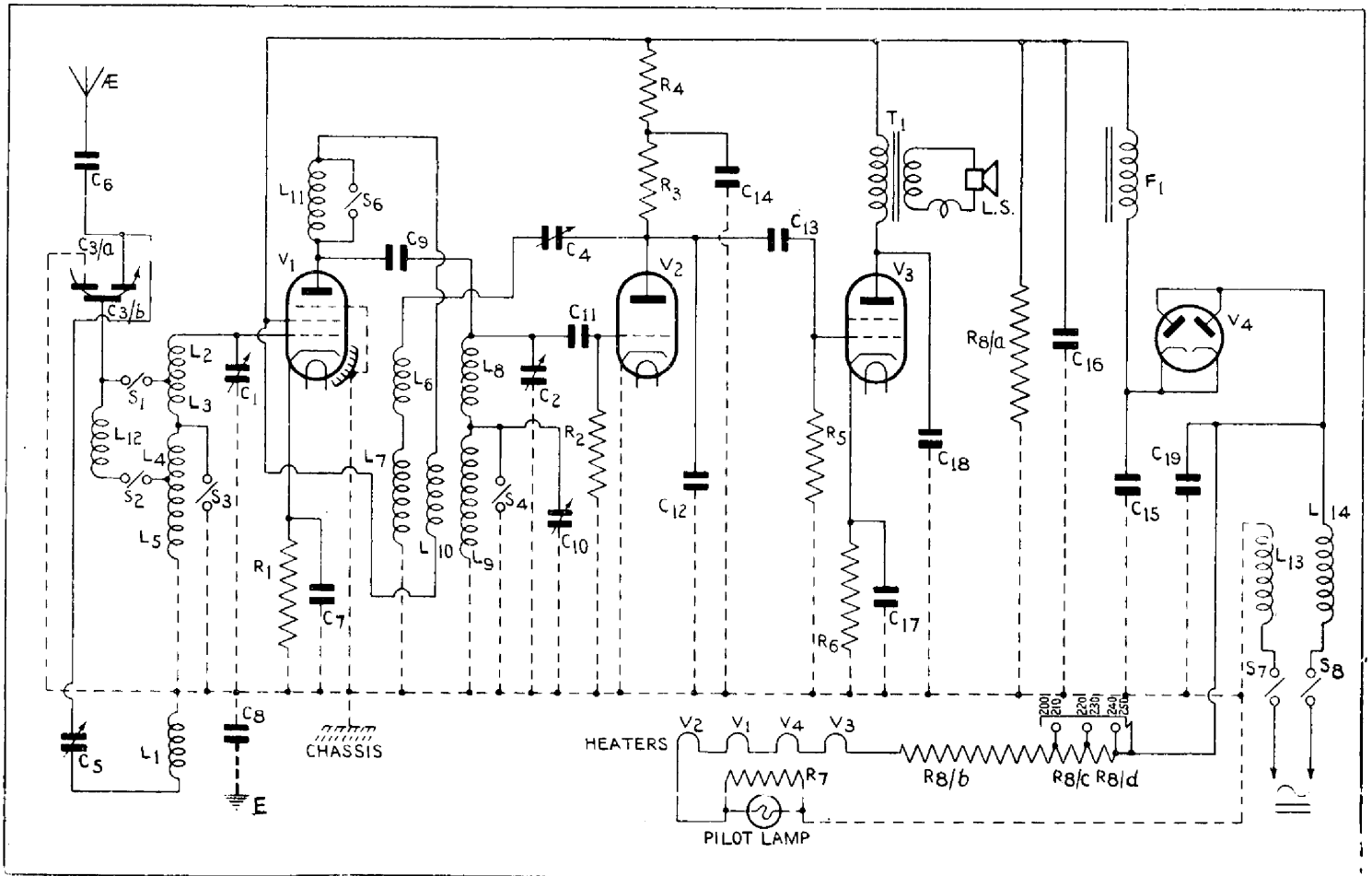
OUTPUT VALVE

Anode volts	...	...	...	166
Anode current	...	...	...	34.5 m/a
Screen volts	...	...	...	190
Screen current	...	...	...	8 m/a
Bias volts	...	...	...	7

COILS

V1 Grid Coil M.W. L2 and 3.	...	...	2.5 ohms.
V1 Grid Coil L.W. L2-3-4-5	...	...	30 ohms.
Aerial coupling section M.W. L3	...	...	.5 ohms.
Aerial coupling section L.W. L5	...	...	11 ohms.
H.F. Choke L12	...	...	13 ohms.
Backing off Coil L1	...	...	.2 ohms.
H.F. Choke L11	...	...	36 ohms.
Primary coupling coil L10	...	...	2.75 ohms.
V2 Grid coil M.W. L8	...	...	2.5 ohms.
V2 Grid coil L.W. L9	...	...	30 ohms.
Reaction coil	...	...	3.75 ohms.

MODEL AD36 CIRCUIT DIAGRAM and VALUES



Circuit Diagram AD36

Ref.	Description	Part No.	Ref.	Description	Part No.
C1	Ganged Cond. .0005 mfd.	D.4829	R8/a	Fixed Resis. 5,000 ohms	D.P.611
C2	Ganged Cond. .0005 mfd.		R8/b	Fixed Resis. 560 ohms.	
C3	Differential Condenser		R8/c	Fixed Resis. 100 ohms.	
	(a) .00015 mfd.		R8/d	Fixed Resis. 100 ohms.	
	(b) .0003 mfd.	A.4817	L1	Backing off coil	
C4	Variable Cond. .0003 mfd.	A.4816.	L2	AE: Grid Coil M.W. Sec.	S.A.71
C5	Pre-set Cond.	D.P.625	L3	AE: Grid Coil M.W. Prim.	
C6	Fixed Cond. .001 mfd.	A.3842	L4	AE: Grid Coil L.W. Sec.	
C7	Fixed Cond. .1 mfd.	A.3844	L5	AE: Grid Coil L.W. Prim.	
C8	Fixed Cond. .1 mfd.	A.3844	L6	M.W. Reaction	
C9	Fixed Cond. 10 cm	A.4840	L7	L.W. Reaction	
C10	Pre-set Cond.	D.P.625	L8	M.W. Det: Grid Coil	S.A.70
C11	Fixed Cond. .0001 mfd.	A.3841	L9	L.W. Det: Grid Coil	
C12	Fixed Cond. .001 mfd.	A.4936	L10	L.W. H.F. Prim.	
C13	Fixed Cond. .01 mfd.	A.3846	L11	M.W. H.F. Choke	D.P.623
C14	Electrolytic Cond. 2 mfd.		L12	H.F. AE: Choke	D.P.612
C15	Electrolytic Cond. 8 mfd.	B.4123	L13	Filter Coil	S.A.73
C16	Electrolytic Cond. 24 mfd.		L14	Filter Coil	
C17	Electrolytic Cond. 25 mfd.	A.3265	S1-6	Wavechange Switch	B.4541
C18	Fixed Cond. .01 mfd.	A.3846	S7-8	On-Off Switch	A.4167
C19	Fixed Cond. .1 mfd.	A.3844	T1	Output Transformer	D.P.61
R1	Fixed Resis. 300 ohms.	A.4881	F1	L/Speaker Field Coil	
R2	Fixed Resis. 1 megohm	P.2071	V1	H.F. Pentode Valve	
R3	Fixed Resis. 50,000 ohms.	A.3263	V2	Triode Valve	
R4	Fixed Resis. 4,000 ohms.	A.3263	V3	Pentode Output Valve	
R5	Fixed Resis. .5 megohm	A.3263	V4	Rectifier Valve	
R6	Fixed Resis. 165 ohms.	A.4881			
R7	Fixed Resis. 100 ohms.	A.4880			

PRICE LIST OF SPAREPARTS FOR AD36

(These prices are subject to alteration without notice)

Ref. No.	Part No.	Description	List Price
CABINETS			
	DP613	Cabinet (Walnut)	£ 1. 5. 0
	DP614	Cabinet (Black)	1.12. 6
KNOBS			
	C4800	Knob (Tuning) Walnut	1. 6
	DP615	Knob (Tuning) Black	2. 0
	C3838	Knob Vol. Control & Reaction (Walnut)	9
	DP142	Knob Vol. Control & Reaction (Black)	1. 0
	DP620	Knob Wavechange (Walnut)	9
	DP620	Knob Wavechange (Black)	1. 0
SCALES			
	C4832	Station Scale	1. 9
	C4831	Station Scale backing blank	1. 9
LOUDSPEAKER			
	D3662/2	Loudspeaker (without transformer) ...	1. 5. 0
T.1	DP61	Output Transformer	10. 6
	DP627	Loudspeaker lead	6
	D4822	Loudspeaker baffle	1. 6
COILS			
L.11	A4856	H.F. Choke M/W	1. 6
L.12	A4811	L.W. Choke	1. 6
L.6.7.8.9.10	SA70	Detector coil and screen	5. 6
L.1.2.3.4.5.	SA71	Aerial coil and screen	5. 6
L.13.14	SA73	Mains Filter	3. 0
CONDENSERS			
C1.C2	D4829	Variable Condenser (2 Gang) ...	10. 0
C3a.C3b.	A4817	Diff. Cond. .00015-.0003 mfd. (Vol. Control)	3. 0
C4	A4816	Variable Condenser .0003 mfd. (Reaction)	2. 3
C14.15.16	B4123	24+8+2 mfd Electrolytic Cond. ...	7. 6
C17	A3265	25 mfd. Electrolytic Cond.	3. 6
C9	A4840	10 c/m Cond.	1. 0
C5	DP625	Pre Set condenser assembly	2. 0
C6	A3842	.001 mfd. Fixed Cond.	9
C12	A3841	.002 mfd. Fixed Cond.	9
C11	A3841	.0001 mfd. Fixed Cond.	9
C7.8	A3844	.1 mfd. Fixed Cond.	9
C13.18	A3846	.01 mfd. Fixed Cond.	9
RESISTANCES			
R8a b c d	DP611	Mains Resistance	4. 6
R6	A4881	Fixed Resistance 165 ohms	9
R1	A4881	,, Resistance 300 ohms	1. 0
R2	P2071	,, Resistance 1 Meg.	9
R5	A3263	,, Resistance .5 Meg.	9
R4	A3263	,, Resistance 4000 ohms	9
R3	A3263	,, Resistance 50,000 ohms	9
R7	A4880	,, Resistance 100 ohms	1. 0
MISCELLANEOUS			
	DP558	Valve top screen	6
	A4852	Station pointer assembly	1. 0
	A4848	Pilot lamp holder	6
S1.2.3.4.6	B4541	Wavechange switch	2. 6
S7.8	A4167	On-off switch	2. 0
	A4658	Valve top clip	1
	DP618	Back cover and cowl assembly ...	4. 6
	DP196	Mains lead	3. 0
	A3654	Plug (Red or Black)	2
	P2445	Pilot lamp	9
		Instruction Book	6
VALVES			
V1		Mullard SP13	17. 6
V2		Mullard HL13	13. 6
V3		Mazda Pen. 3520	18. 6
V4		Brimar 1D5	15. 0

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