

LISSEN

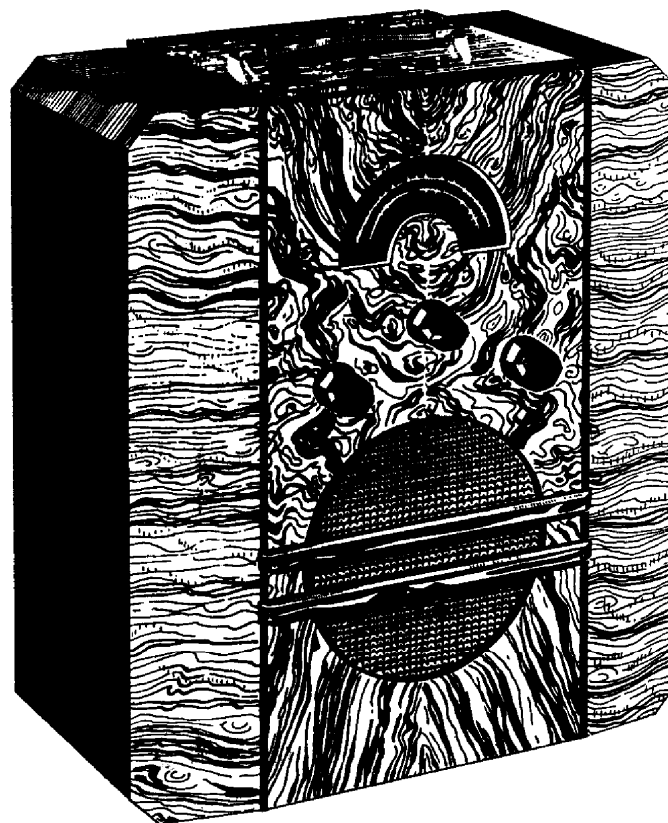
SERVICE MANUAL FOR A.C. MAINS OPERATED 4-VALVE (INCLUDING RECTIFIER) TRANSPORTABLE MODEL 8303

TECHNICAL SPECIFICATION

THE Lissen Model 8303 is a Transportable Receiver for A.C. mains operation. The self-contained aerial is tuned, and is followed by a variable-mu screened grid valve (Ever Ready A50N). Volume control is effected by the resistance R5, which varies the bias on this valve.

The R.F. amplifier is choke-capacity coupled (L4 and C6) to an iron-cored grid coil (L5 and L6). Reaction is obtained by feed back from L7 on medium waves, and L7 and L8 on long waves; this is controlled by the reaction condenser C3.

The detector valve (Ever Ready A30D) is resistance-capacitance coupled to a high slope output pentode (Ever Ready A70D). The anode circuit of the detector is decoupled by the resistance R9 and condenser C10, and its cathode



circuit incorporates a bias resistance R7 and by-pass condenser C8 for gramophone pick-up operation. With the range switch in position "G" the H.F. pentode screen is disconnected, thus silencing radio when a pick-up is being used.

Tone control is effected by means of the plug and sockets on the back of the chassis; the "High" position gives normal tone for local station reception, and the "Low" position attenuates high note response for reception of distant stations when interference is being experienced (atmospherics, etc.).

The rectifier circuit is conventional, the speaker field being employed as a smoothing choke.

The two outer switches on the range switch panel should be closed on MW and open on LW, and the centre switch should be open in position "G" only.

SERVICE DATA FOR A.C. MAINS OPERATED 4-VALVE (including Rectifier) TRANSPORTABLE, MODEL 8303

CONDENSERS.

Circuit Indication	Condenser Specification	Location	Component Number
C1 ...	500 mmfd. Aerial tuning condenser ...	Fig. 5	80015
C2 ...	500 mmfd. Grid tuning condenser ...	Fig. 5	80015
C3 ...	500 mmfd. Reaction condenser ...	Fig. 6	75104
C4] ...	0.1 mfd. H.F. screen by-pass ...	Fig. 6	68020
C5] ...	0.1 mfd. H.F. bias by-pass ...	Fig. 6	68020
C6 ...	50 mmfd. H.F. coupling ...	Fig. 6	66036
C7 ...	100 mmfd. Detector grid condenser ...	Fig. 6	66035
C8 ...	0.5 mfd. L.F. bias by-pass ...	Fig. 6	68019
C9 ...	.002 mfd. Detector anode by-pass ...	Fig. 6	25656
C10 ...	0.5 mfd. Detector anode decoupling ...	Fig. 6	68019
C11 ...	.01 mfd. L.F. coupling ...	Fig. 6	68005
C12 ...	50 mmfd. Electrolytic L.F. bias by-pass ...	Fig. 6	67005
C13 ...	.01 mfd. Tone control ...	Fig. 6	68005
C14 ...	.0025 mfd. Tone correction ...	Fig. 6	68002
C15 ...	300 mmfd. Tone correction ...	Fig. 6	66037
C16 ...	8 + 8 mfd. Electrolytic H.T. smoothing ...	Fig. 7	67031
C17 ...	Aerial circuit trimmer (on tuning condenser) ...	Fig. 7	—
C18 ...	Grid circuit trimmer (on tuning condenser) ...	Fig. 7	—

INDUCTANCES AND TRANSFORMERS.

Circuit Indication	Specification	Location	Component Number
L1 ...	Aerial coupling winding	Fig. 7	78503
L2 ...	Medium wave aerial tuned winding...	Fig. 7	78503
L3 ...	Long wave aerial tuned winding...	Fig. 7	78503
L4 ...	H.F. choke ...	Fig. 6	13994
L5 ...	Medium wave Grid coil	Fig. 5	78502
L6 ...	Long wave grid coil ...	Fig. 5	78502
L7 ...	Medium wave reaction coil ...	Fig. 5	78502
L8 ...	Long wave reaction coil	Fig. 5	78502
L9 ...	Detector choke ...	Fig. 6	13894
L10 ...	Output transformer (on speaker) ...	Fig. 8	85501
L11 ...	Speaker field ...	Fig. 8	85501
L12 ...	Mains transformer ...	Fig. 7	77054

OPERATING CONDITIONS OF THE VALVES.

Valve Type	Anode	Screen	Cathode
V1 (Ever Ready A50N) Variable Mu H.F. Pentode. Voltage ...	250	45-55	{ 13 (max.) 1.3-1.5 (min.)
Current (milliamps)...	3.5	1.5	—
V2 (Ever Ready A30D) Triode. Voltage ...	30	—	—
Current (milliamps)...	2.0	—	—
V3 (Ever Ready A70D) L.F. Pentode. Voltage	220-240	250	6-7
Current (milliamps)...	37.0	5.0	—

Note.—The voltages given above are the readings which should be obtained with an Avometer, and in every case are measured from CHASSIS and, except where stated, with the volume control at "max.," i.e., the wiper just off the resistance strip.

The A.C. voltage from each anode of the rectifier to chassis should be approximately 340 volts R.M.S. on load.

RESISTORS.

Circuit Indication	Specification	Colour Code			Location	Component Number
		Body	Tip	Dot		
R1	40,000 ohms (1 watt) ...	Y.	Bl.	O.	Fig. 6	71940
R2	25,000 ohms (½ watt) ...	R.	G.	O.	Fig. 6	24756
R3	15,000 ohms (½ watt) ...	Br.	G.	O.	Fig. 6	71917
R4	300 ohms (¼ watt) ...	O.	Bl.	Br.	Fig. 6	71942
R5	Volume control (5,000 ohms) ...	—	—	—	Fig. 6	75104
R6	1 megohm (¼ watt) ...	Br.	Bl.	G.	Fig. 6	71904
R7	800 ohms (¼ watt) ...	Gr.	Bl.	Br.	Fig. 6	71961
R8	25,000 ohms (½ watt) ...	R.	G.	O.	Fig. 6	71908
R9	80,000 ohms (½ watt) ...	Gr.	Bl.	O.	Fig. 6	71939
R10	0.1 megohm (¼ watt) ...	Br.	Bl.	Y.	Fig. 6	71910
R11	.5 megohm (¼ watt) ...	G.	Bl.	Y.	Fig. 6	71912
R12	150 ohms (¼ watt) ...	Br.	G.	Br.	Fig. 6	71969

COLOUR CODE: —Br. = Brown; Bl. = Black; G. = Green; Gr. = Grey; O. = Orange; Y. = Yellow.

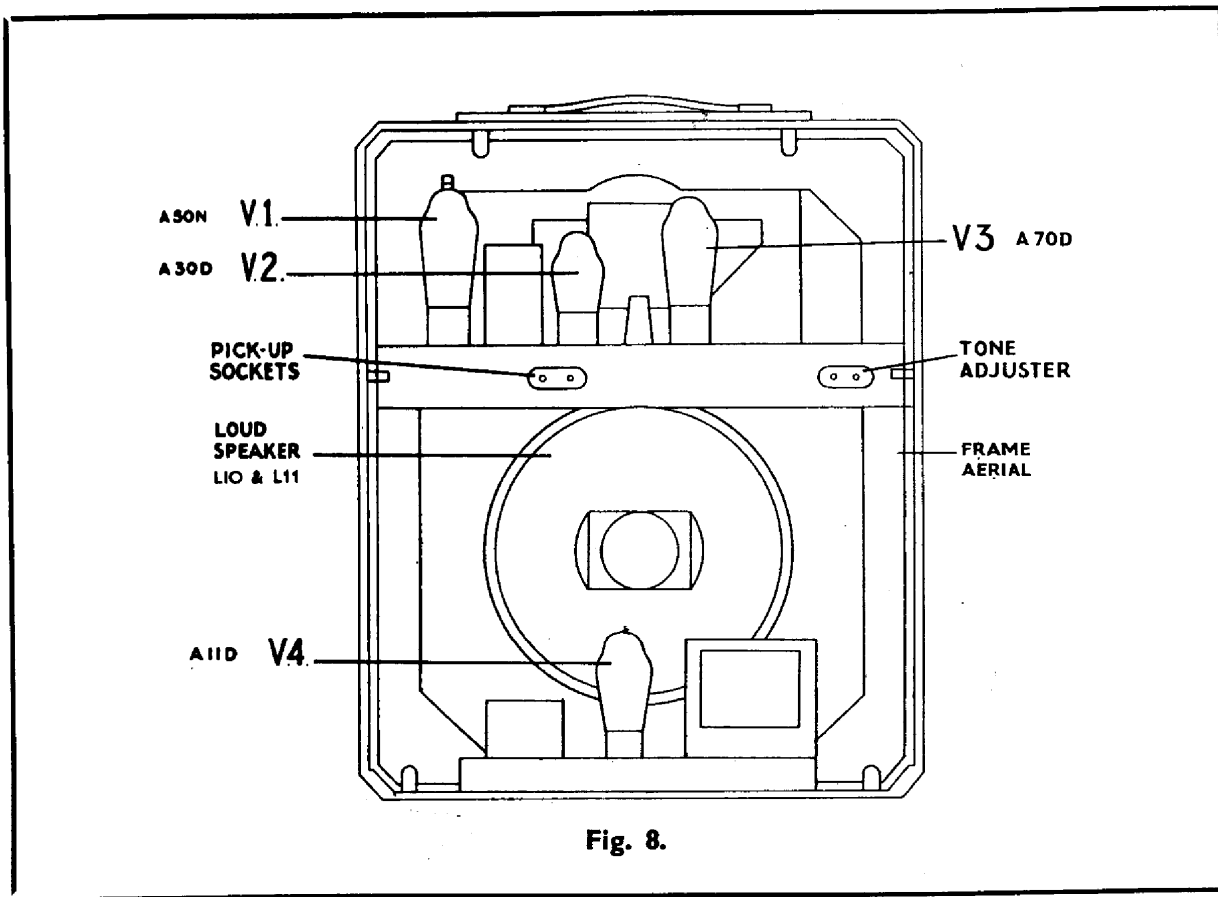


Fig. 8.

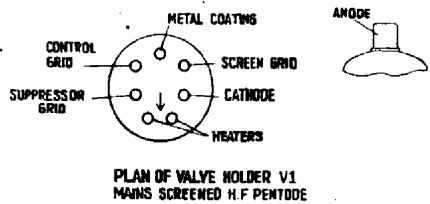


Fig. 1.

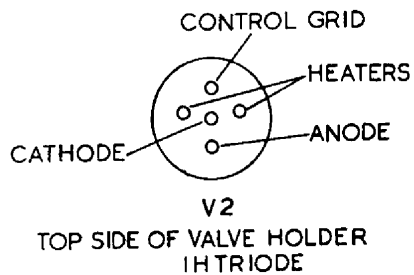


Fig. 2.

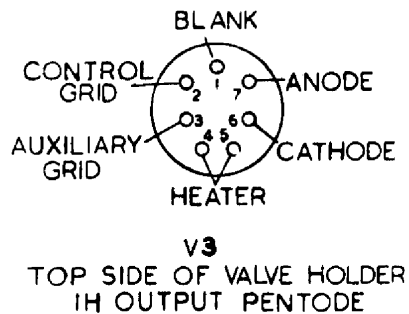


Fig. 3.

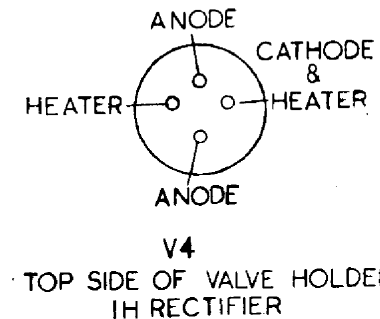


Fig. 4.

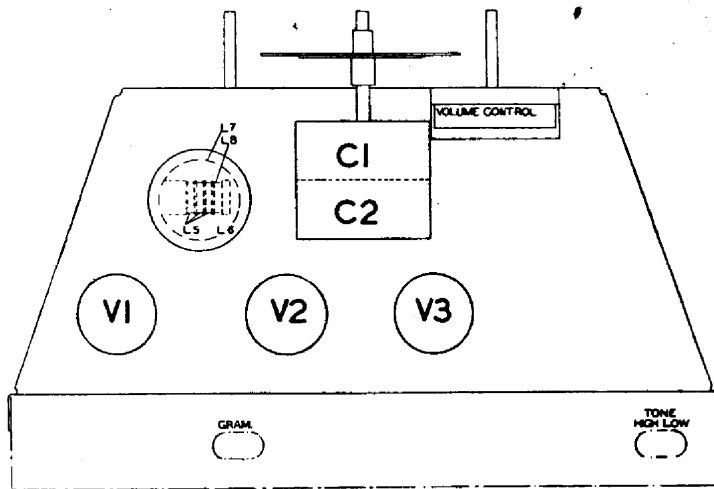


Fig. 5.

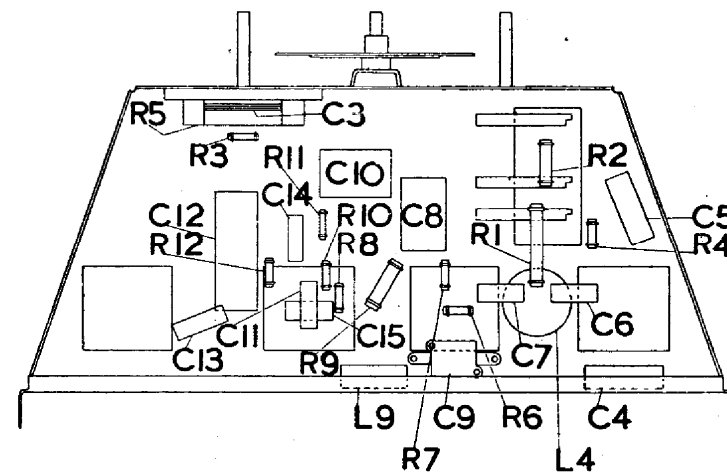
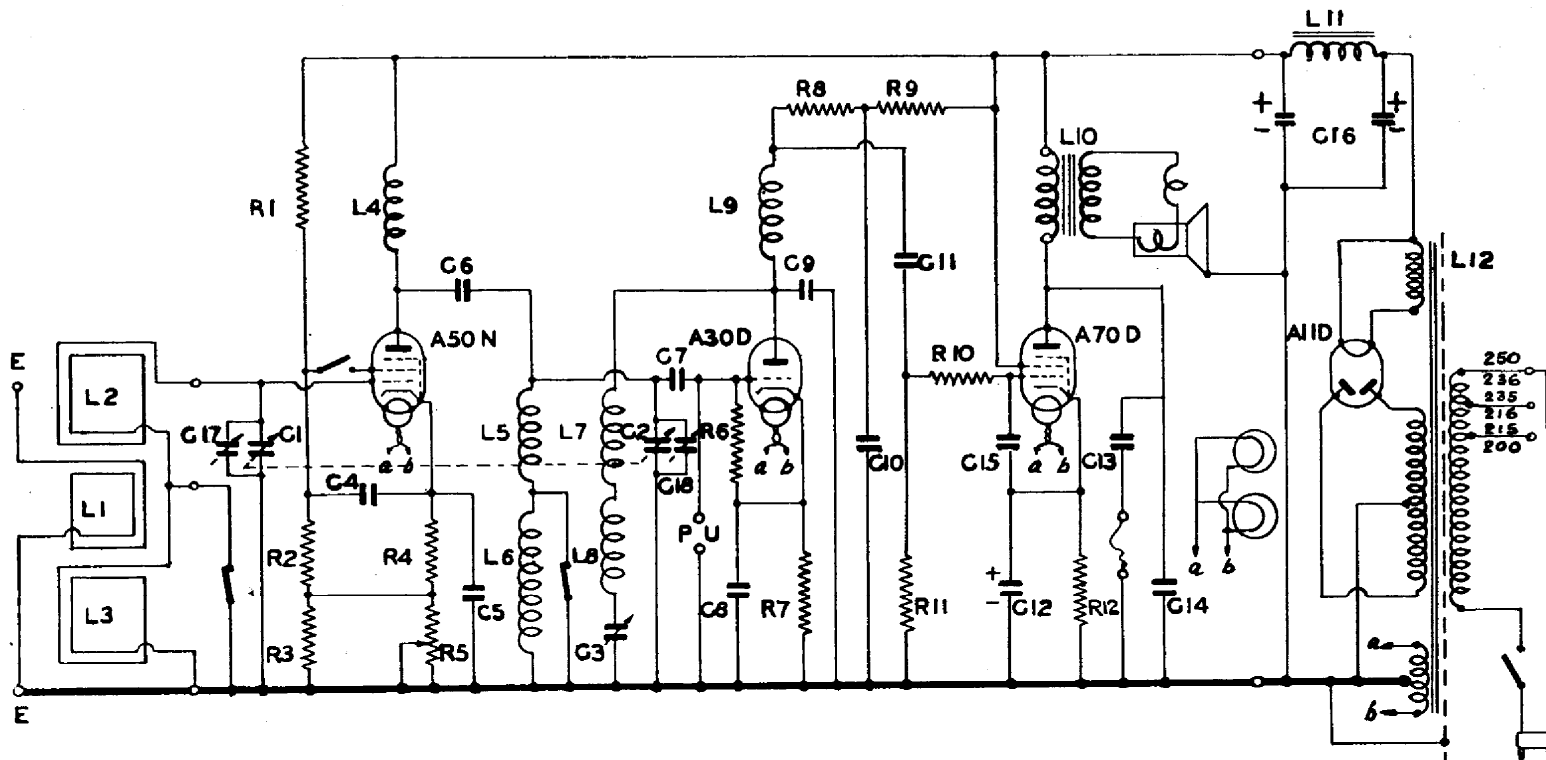


Fig. 6.



CIRCUIT DIAGRAM.

Fig. 7.