

LISSEN

SERVICE MANUAL FOR THE "OLYMPIAN" A.C. MAINS BAND PASS RECEIVER MODEL 8305

TECHNICAL SPECIFICATION

The Lissen Model 8305 4-Valve (incl. Rectifier) Band-Pass Receiver is for use with an external aerial, and is for A.C. mains operation (200-250 volts, 40-60 cycles). The wavebands covered are 200-550 metres, and 750-1950 metres.

Four valves are employed, viz.:

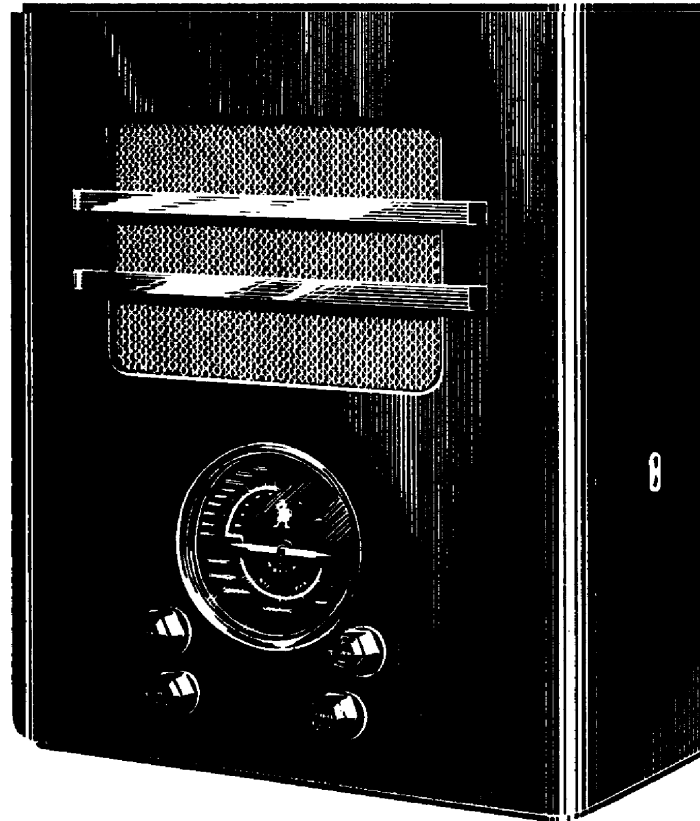
V1-H.F. Pentode (variable- μ type) metallised.....Ever Ready A50P.

V2-Triode Detector, metallised
Ever Ready A30D.

V3-Output Pentode
Ever Ready A70D.

V4-Rectifier.....Ever Ready A11D.

The aerial is coupled through a fixed condenser (C1), and aerial coil (L1), to the primary of the band-pass filter, the latter being inductively coupled to the secondary which tunes the grid of the first valve.



Volume is controlled by varying the potential of the H.F. pentode cathode with respect to earth by means of the variable resistance R4, the grid being connected to earth through the band-pass secondary coils L4 and L5.

The intervalve tuned circuit is coupled to the anode of the H.F. valve by the choke L6 and condenser C10, and reaction is obtained by varying C11. The detector anode circuit is decoupled by the resistance R6 and condenser C13.

The resistance R9 is an H.F. stopper and, in conjunction with the condenser C16, assists in stabilising the receiver. C18 is a tone correction condenser, and C19 the external tone control.

The speaker field is used as a smoothing choke.

The three wave-change switches are closed in the MW position, and open in the LW position.

SERVICE DATA FOR A.C. MAINS OPERATED 'OLYMPIAN' RECEIVER MODEL 8305

CONDENSERS

Circuit Indication	Specification	Location	Component Number
C1	.0001 mfd. Aerial Series Condenser ...	Fig. 5	66,035
C2	B.P.1. Tuning	On Gang	80,500
C3	B.P.2 Tuning		
C4	Grid Coil		
C5	Tuning		
C6	B.P.1 Trimmer	Condenser	80,500
C7	B.P.2 Trimmer		
C8	Grid Coil Trimmer	Fig. 6	68,020
C9	0.1 mfd. H.F. Screen By-pass ...	Fig. 6	68,020
C10	0.1 mfd. H.F. Bias By-pass ...	Fig. 6	66,036
C11	.00005 mfd. H.F. Coupling ...	Fig. 5	80,055
C12	.0005 mfd. Reaction Condenser ...	Fig. 6	66,035
C13	.0001 mfd. Detector Grid Condenser ...	Fig. 6	68,019
C14	.5 mfd. Detector Anode Decoupling ...	Fig. 6	68,000
C15	.001 mfd. Detector Anode By-pass ...	Fig. 6	68,013
C16	.025 mfd. L.F. Coupling ...	Fig. 6	66,969
C17	.0005 mfd. Tone Correction	Fig. 6	67,005
C18	50 mfd. 12v. Output Pentode Bias By-pass	Fig. 6	25,656
C19	.002 mfd. Tone Correction	Fig. 6	68,005
C20	.01 mfd. External Tone Control	Fig. 6	67,031
	8 + 8 mfd. Smoothing 640v. Peak ...	Fig. 6	67,031

INDUCTANCES AND TRANSFORMERS

Circuit Indication	Specification	Location	Component Number
L1	Aerial Coupling Coil	Fig. 5	78,501
L2	Medium Wave B.P.1		
L3	Long Wave B.P.1 ...		
L4	Medium Wave B.P.2		
L5	Long Wave B.P.2 ...	Fig. 6	13,894
L6	H.F. Choke ...		
L7	Medium Wave Grid Coil ...		
L8	Long Wave Grid Coil ...	Fig. 5	78,500
L9	Medium Wave Reaction Coil ...		
L10	Long Wave Reaction Coil ...		
L11	Speaker Field ...	Fig. 8	85,500
L12	Mains Transformer ...	Fig. 5	77,054
L13	Output Transformer (on Speaker) ...	Fig. 8	

REMOVING CHASSIS FROM CABINET.

Should it be found necessary to take the chassis out of the cabinet, remove the control knobs by inserting the edge of a duster behind the knob and pulling sharply. Remove the mains switch from the side of the cabinet by unscrewing the two wood screws which secure it.

Then remove the four screws at the bottom of the cabinet.

OPERATING CONDITIONS OF THE VALVES

Valve Type	Anode	Screen	Cathode
V1 (Ever Ready A50P) Variable Mu H.F. Pentode.			
Voltage	270	190	42 (max.) 1.5 (min.)
Current (milliamps)	11.0	7.5	18-20(max.) Nil at min.
V2 (Ever Ready A30D) Triode.			
Voltage	47	—	—
Current (milliamps)	3.8	—	—
V3 (Ever Ready A70D) High Slope Output Pentode.			
Voltage	260	270	6.8
Current (milliamps)	37.0	5.0	42.0

NOTE.—The voltages shown above are to CHASSIS in every instance, and were measured with an Avometer (and, unless otherwise stated, with the volume control at max.).

RESISTANCES

Circuit Indicatn.	Specification	Colour Code			Location	Component Number
		Body	Tip	Dot.		
R1	10,000 ohms (1 watt)	Brn	Blk	Org	Fig.6	24,853
R2	50,000 ohms (1 watt)	Grn	Blk	Org	Fig.6	24,859
R3	100 ohms (½ watt)	Brn	Blk	Brn	Fig.6	71,957
R4	Volume Con. 21,000 ohms	-	-	-	Fig.6	81,019
R5	2 megohms (½ watt)	Red	Blk	Grn	Fig.6	71,905
R6	25,000 ohms (½ watt)	Red	Grn	Org	Fig.6	71,908
R7	25,000 ohms (½ watt)	Red	Grn	Org	Fig.6	71,908
R8	260,000 ohms (½ watt)	Red	Blue	Yel	Fig.6	71,945
R9	0.1 megohm (½ watt)	Brn	Blk	Yel	Fig.6	71,923
R10	150 ohms (½ watt)	Brn	Grn	Brn	Fig.6	71,969

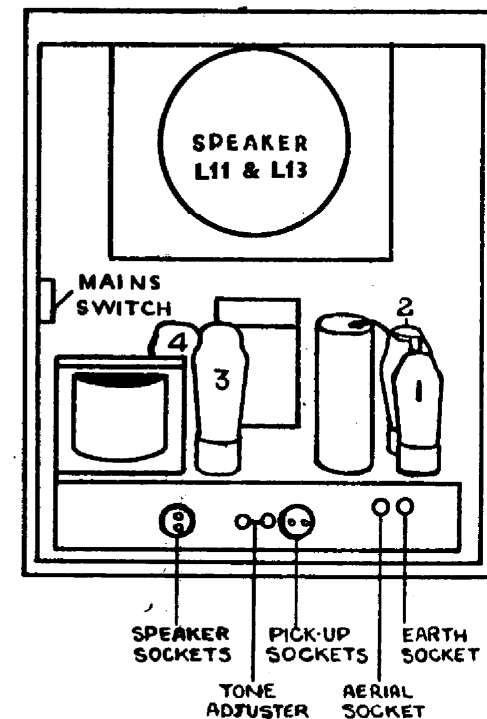


Fig. 8.

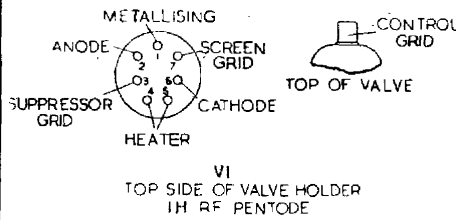


Fig. 1.

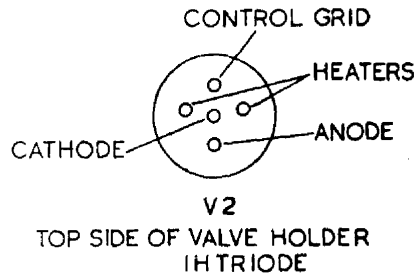


Fig. 2.

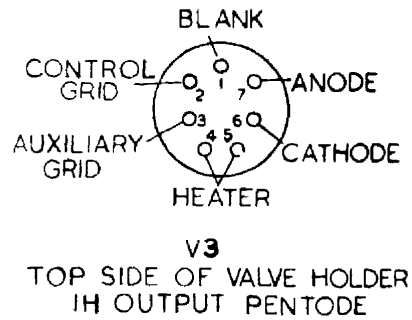


Fig. 3.

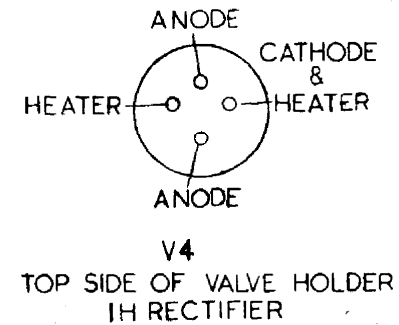


Fig. 4.

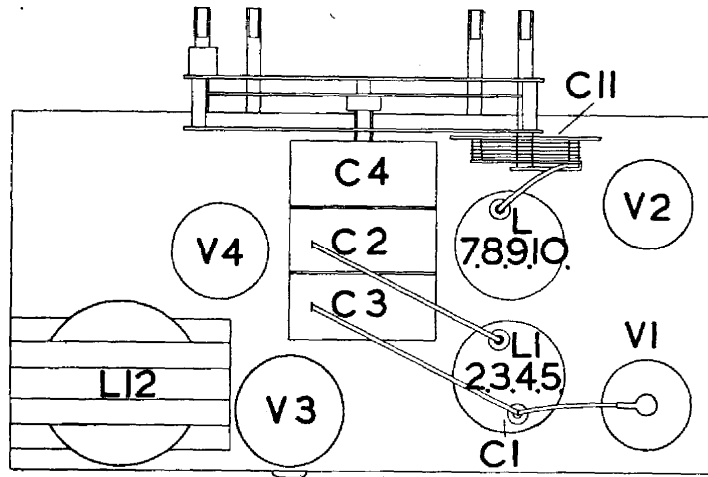


Fig. 5.

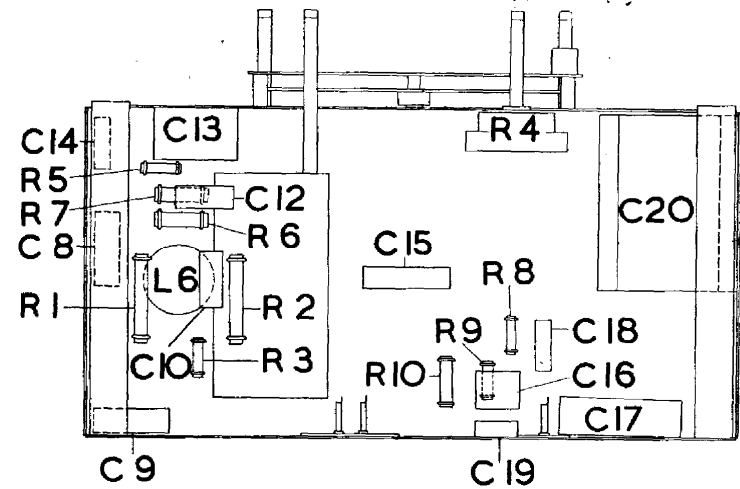
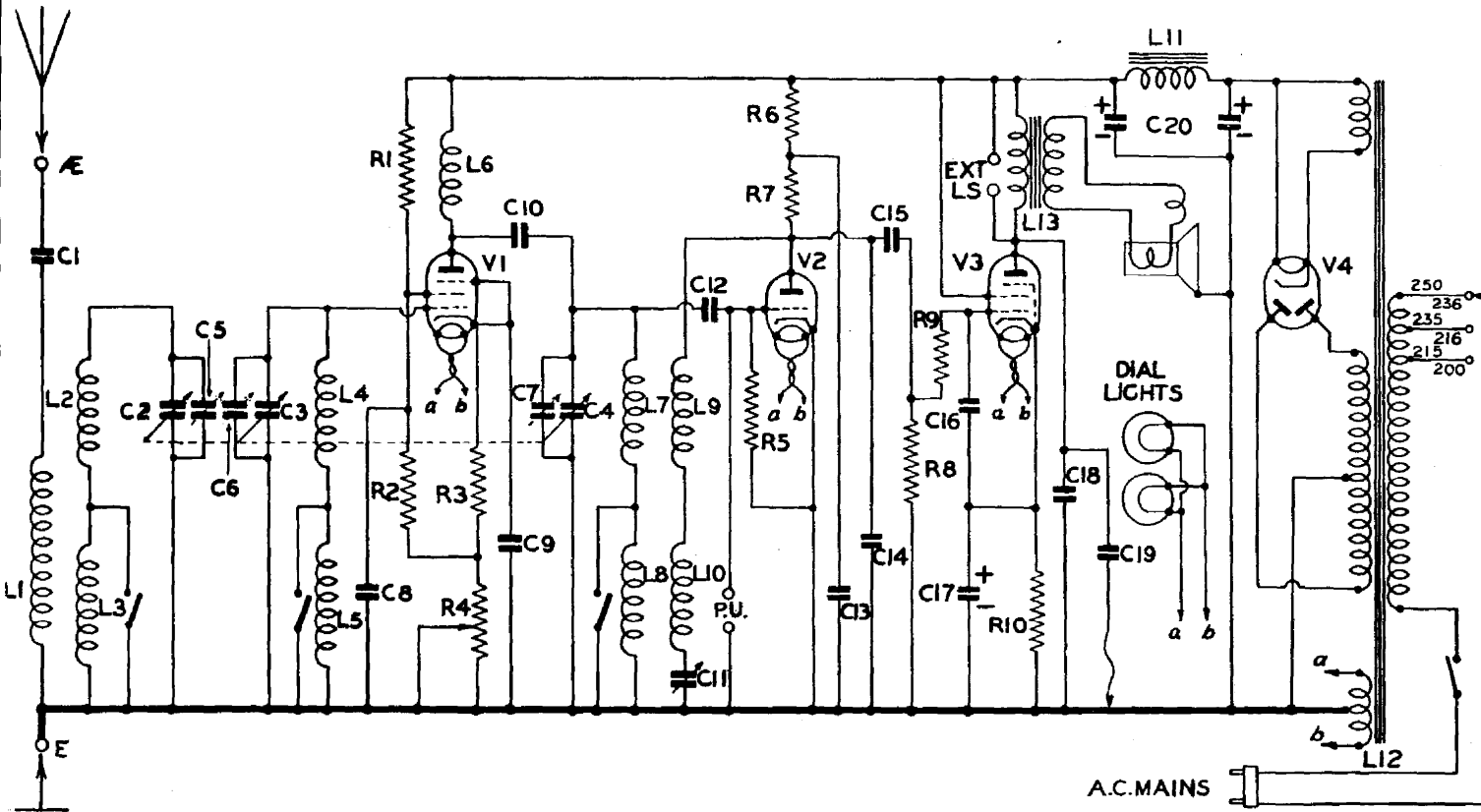


Fig. 6.



CIRCUIT DIAGRAM.

Fig. 7.