

TECHNICAL INFORMATION  
AND  
SERVICE DATA

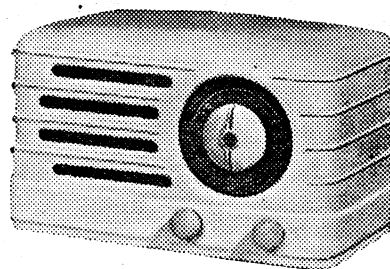
**AWA** RADIOLETTE

Models 507-M, 507-MY & 508-M

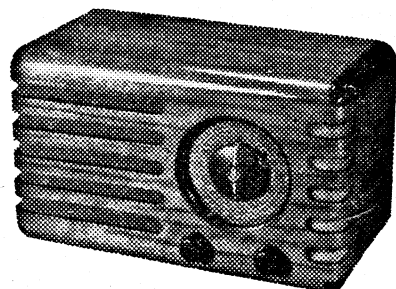
FOUR VALVE, BROADCAST,  
VIBRATOR-OPERATED SUPERHETERODYNES

ISSUED BY  
AMALGAMATED WIRELESS (A/SIA.) LTD.

507-M, 507-MY, 508-M



507M and 507MY



508M

NOTE: The Radiolettes 507-M and 508-M employ the same type of chassis and, as will be seen in the illustrations above, are, respectively, moulded and wooden cabinet models. The Radiolette 507-MY employs a slightly modified circuit arrangement. Both circuit diagrams appear in this booklet.

**ELECTRICAL SPECIFICATIONS.**

FREQUENCY RANGE

Models 507-M, 508-M ..... 550-1600Kc. (545-187.5M)  
Model 507-MY ..... 540-1600Kc. (555-187.5M)

INTERMEDIATE FREQUENCY 455 Kc.

BATTERY ..... 4 volt Accumulator.

BATTERY CURRENT CONSUMPTION .... 0.8 Amp.

DIAL LAMP (1) ..... 2.0 volt, 0.06 Amp. M.E.S.

VIBRATOR CARTRIDGE ..... A.W.A. - OAK Synchronous  
Type V5278.

FUSE ..... 3 Amp. Cartridge.

VALVE COMPLEMENT—

- (1) 1A7GT Converter.
- (2) 1P5GT I.F. Amplifier.
- (3) 1H5GT Detector, A.V.C. and A.F. Amplifier.
- (4) 1Q5GT Power Output.

LOUDSPEAKER—

5 inch permanent magnet, V.C. Impedance—3 ohms at  
Code No. AC24. 400 C.P.S.  
Transformer—XA7. Undistorted Output—250  
milliwatts.

CONTROLS—

Combined ON/OFF Switch and Volume (left)—Tuning  
(right).

**MECHANICAL SPECIFICATIONS.**

	Height	Width	Depth
Cabinet Dimensions (inches):			
Moulded .....	7 $\frac{3}{8}$	11 $\frac{1}{4}$	5 $\frac{3}{4}$
Wooden .....	8	12 $\frac{1}{2}$	6 $\frac{1}{4}$
Chassis Base Dimensions (inches) ..	2	10 $\frac{1}{2}$	5 $\frac{1}{2}$
Overall Chassis Height (inches) ..	6 $\frac{1}{4}$		

	Height	Width	Depth
Vibrator Power Unit Dimensions			
(inches) .....	4 $\frac{1}{8}$	3 $\frac{1}{8}$	3
Weight (nett lbs.) .....			13
Cabinet Colours:			
Moulded .....	Ivory, Jade Green, Walnut		
Wooden .....	Walnut		

**ALIGNMENT PROCEDURE.**

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered, unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using specialised equipment.

## CIRCUIT CODE

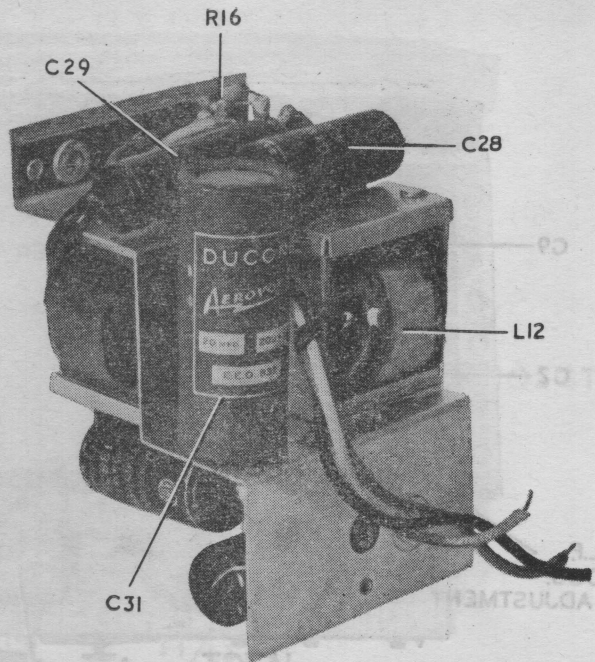
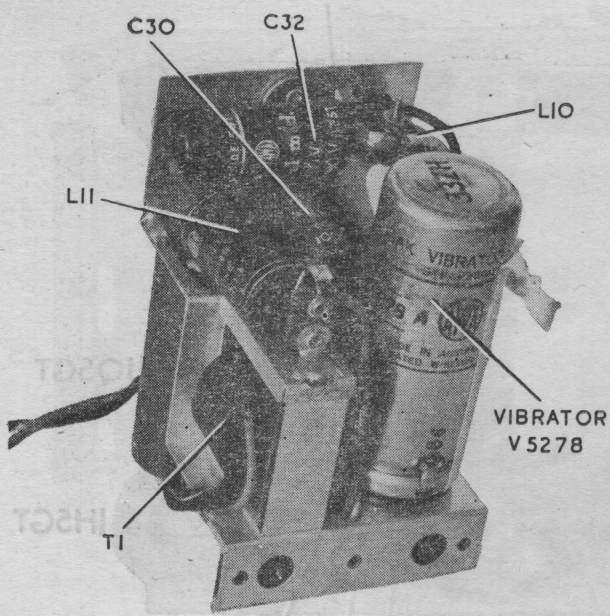
Circuit Code No.	Description	Stock Code or Part No.	Circuit Code No.	Description	Stock Code or Part No.	Circuit Code No.	Description	Stock Code or Part No.
<b>INDUCTORS.</b>			C17	0.1 uF paper, 400 V. working	228, 121	<b>RESISTORS.</b>		
L1, L2	Aerial coil	7647	C18	400 uF, 12 P.V. electrolytic	EE10782	R1	1 megohm, $\frac{1}{2}$ watt	600, 341
L3, L4	1st I.F. transformer	17645, 17640*	C19	400 uF, 12 P.V. electrolytic	EE10782	R2	0.2 megohm, $\frac{1}{2}$ watt	600, 327
L5, L6	2nd I.F. transformer	17646, 17640*	C20	100 uuF mica	224, 261	R3	63,000 ohms, 1 watt	600, 517 or 600, 717
L7, L8	Oscillator coil	7638	C21	100 uuF mica	224, 261	**R4	2.5 megohms, $\frac{1}{2}$ watt	600, 349
L9	Smoothing choke	19155	C22	0.02 uF paper, 600 V. working	228, 307	††R4	2.0 megohms, $\frac{1}{2}$ watt	600, 347
L10	R.F. filter choke	3149	C23	200 uuF mica	224, 267	R5	40,000 ohms, 1 watt	600, 513 or 600, 713
L11	R.F. filter choke	13809	C24	0.02 uF paper, 600 V. working	228, 307	R6	1.6 megohms, $\frac{1}{2}$ watt	600, 345
**L12	Smoothing choke	8321	C25	0.0025 uF paper, 600 V. working	228, 289	R7	20,000 ohms, $\frac{1}{2}$ watt	600, 307
<b>CAPACITORS.</b>			C26	20 uF, 200 P.V. electrolytic	ET10695	R8	0.5 megohm, volume control	19161
C1	4 uuF mica	224, 233	C27	0.25 uF paper, 400 V. working	228, 129	**R9	2 megohms, $\frac{1}{2}$ watt	600, 347
C2	12-430 uuF variable tuning (ganged)	18280	††C27	0.4 uF paper, 400 V. working	228, 133	††R9	10 megohms, 1 watt	600, 561 or 600, 761
C3	3-25 uuF variable	19659	**C28	0.05 uF paper, 400 V. working	228, 115	R10	1 megohm, 1 watt	600, 541 or 600, 741
**C4	0.02 uF paper, 600 V.W.	228, 307	††C28	0.02 uF paper, 600 V. working	228, 307	R11	1 megohm, $\frac{1}{2}$ watt	600, 341
††C4	0.05 uF paper, 400 V.W.	228, 115	**C29	0.05 uF paper, 400 V. working	228, 115	R12	16 ohms, 1 watt	BW1
C5	0.05 uF paper, 400 V. working	228, 115	††C29	0.02 uF paper, 600 V. working	228, 307	R13	25 ohms, 1 watt	BW1
**C6	440 uuF mica, $\pm 2\frac{1}{2}\%$	13212†	C30	0.1 uF paper, 400 V. working	228, 121	R14	22 ohms, 1 watt	BW1
††C6	420 uuF mica, $\pm 2\frac{1}{2}\%$	13212†	C31	20 uF, 200 P. V. electrolytic	EE0839	R15	12 ohms, 1 watt	BW1
C7	9 uuF mica	13211†	**C32	0.1 uF paper, 400 V. working	228, 121	R16	500 ohms, $\frac{1}{2}$ watt	600, 275
C8	3-25uuF air trimmer	19659	††C32	0.4 uF paper, 400 V. working	228, 133	††R17	2000 ohms, 1 watt	600, 487 or 600, 687
C9	12-430 uuF variable tuning (ganged)	18280	**C33	100 uuF mica	224, 261	††R18	1600 ohms, $\frac{1}{2}$ watt	600, 285
C10	50 uuF mica	224, 555				<b>TRANSFORMERS.</b>		
C11	0.05 uF paper, 400 V. working	228, 115	C30	0.1 uF paper, 400 V. working	228, 121	**T1	Vibrator	17566
C12	70 uuF silvered mica	226, 460	C31	20 uF, 200 P. V. electrolytic	EE0839	††T1	Vibrator	17568
C13	70 uuF silvered mica	226, 460	**C32	0.1 uF paper, 400 V. working	228, 121	T2	Loudspeaker	XA7
**C14	0.02 uF paper, 600 V. working	228, 307	††C32	0.4 uF paper, 400 V. working	228, 133	<b>SWITCHES.</b>		
C15	70 uuF silvered mica	226, 460	**C33	100 uuF mica	224, 261	S1	ON/OFF (incorporated in R8)	
C16	70 uuF silvered mica	226, 460				<b>FUSES.</b>		
						FI	3 Amp. cartridge	370, 011

\* Part number of winding only.

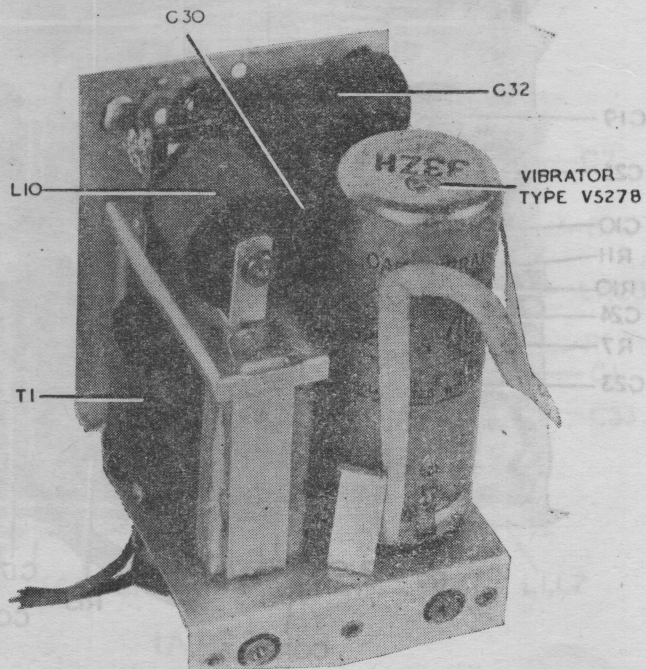
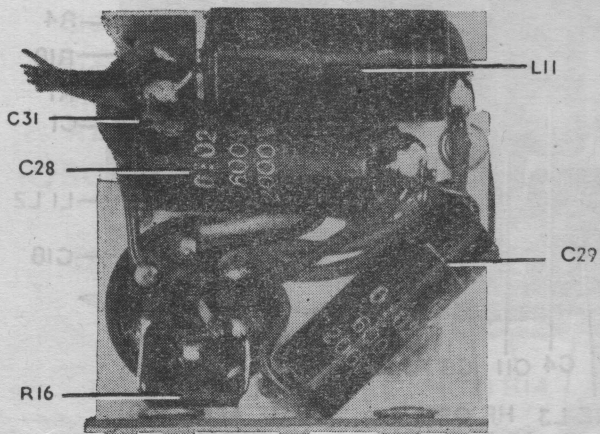
† Capacitance and tolerance (if shown) to be quoted.

\*\* 507-M and 508-M only.

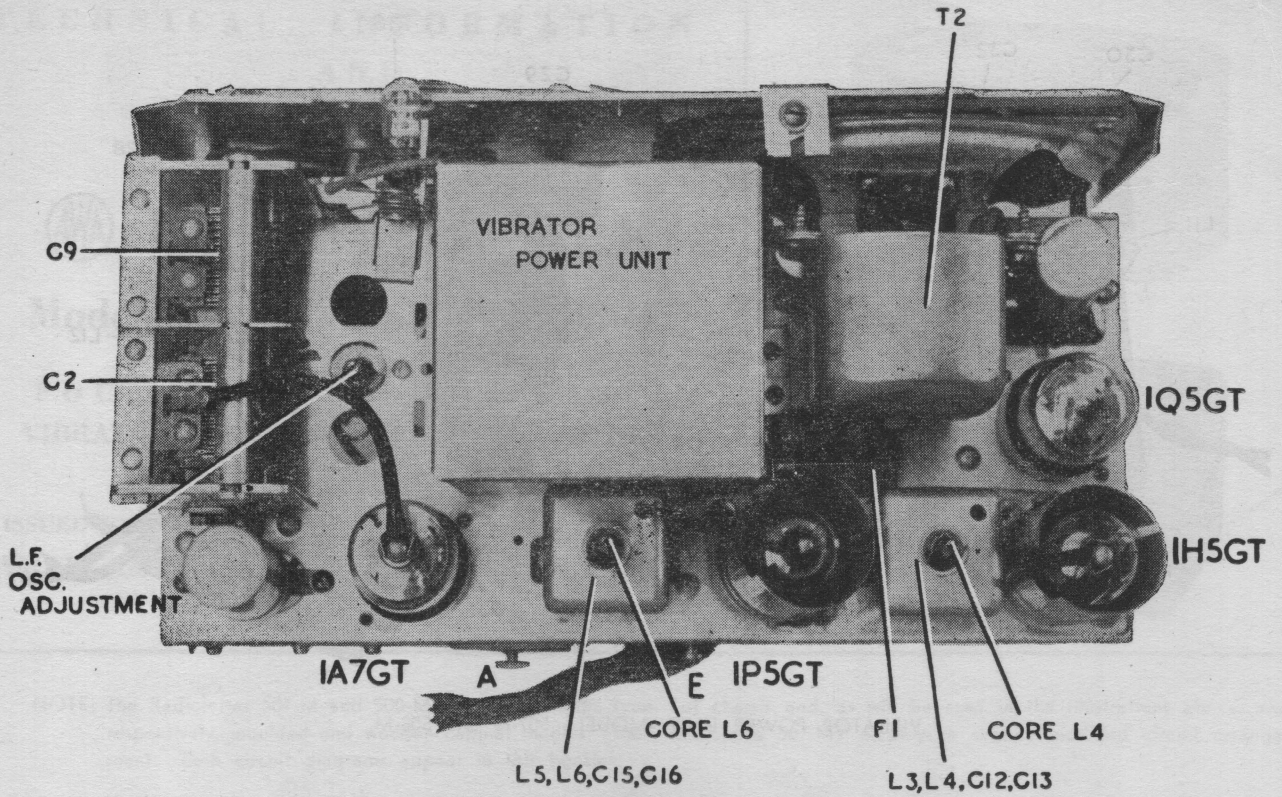
†† 507-MY only.



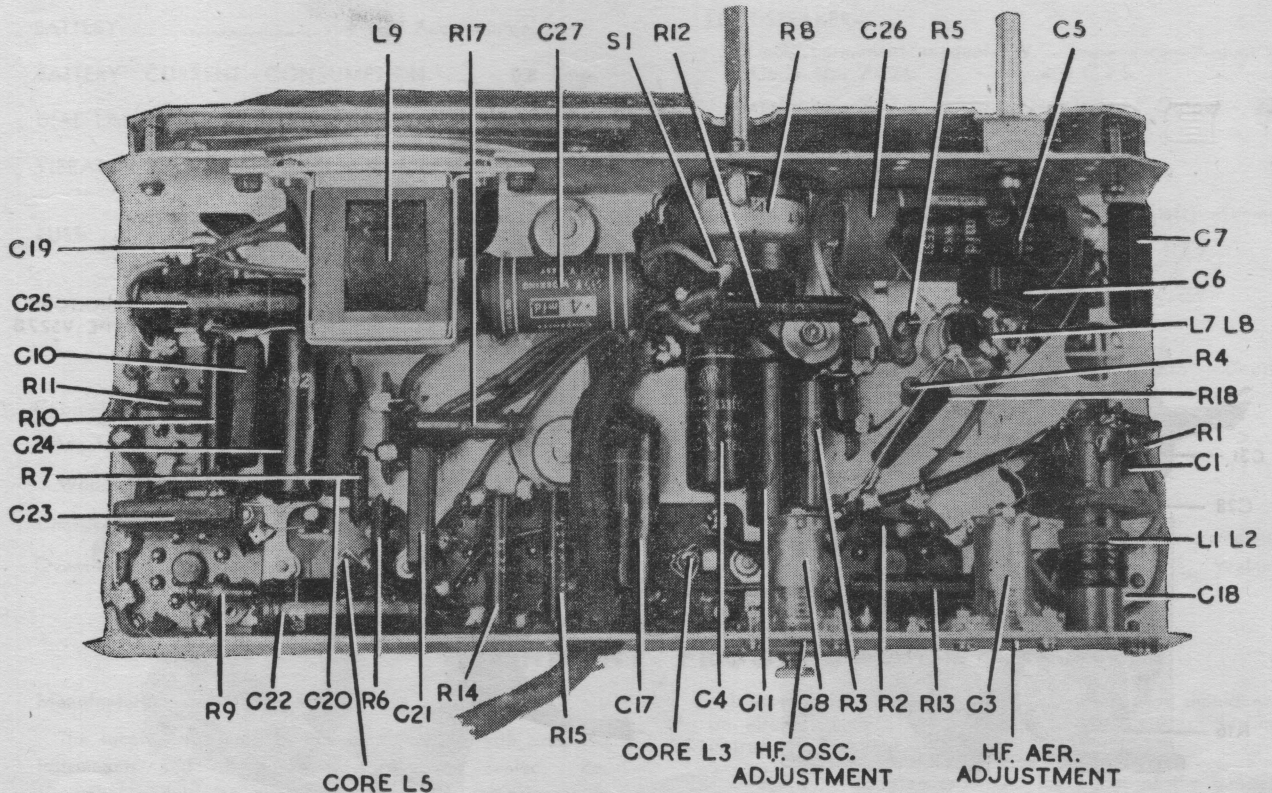
VIBRATOR POWER UNIT—MODELS 507-M and 508-M.



VIBRATOR POWER UNIT—MODEL 507-MY.



CHASSIS (TOP VIEW) MODEL 507-MY.



CHASSIS (UNDERNEATH VIEW) MODEL 507-MY.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis, and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position. The two R.F. alignment points, 600 kc. and 1500 kc. are marked on the right and left hand edges of the glass dial scale.

#### Testing Instruments.

- (1) A.W.A. Junior Signal Generator, type 2R3911.
- (2) A.W.A. Modulated Oscillator, type J6726.

If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals.

#### (3) Output Meter.

The instrument recommended should have an output impedance of 12000 ohms and a range of 5-3000 milliwatts. The meter should be connected across the primary of the loudspeaker transformer with the voice coil of the loudspeaker open-circuit. The circuit may be broken by unsoldering one voice coil lead from the panel at the top of the loudspeaker.

If the output meter used is one which does not impress a load on the anode circuit of the output valve it will not be necessary to open-circuit the voice coil.

## ALIGNMENT TABLE.

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for Maximum Peak Output.
1	1A7GT Grid*	455 Kc.	Below 550 Kc.†	L6 Core
2	1A7GT Grid*	455 Kc.	Below 550 Kc.†	L5 Core
3	1A7GT Grid*	455 Kc.	Below 550 Kc.†	L4 Core
4	1A7GT Grid*	455 Kc.	Below 550 Kc.†	L3 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc.	.6 Mc. Mark	LF Osc. Adj. (L8 Core)‡
6	Aerial Terminal	1500 Kc.	1.5 Mc. Mark	HF Osc. Adj. (C8)
7	Aerial Terminal	1500 Kc.	1.5 Mc. Mark	HF Aer. Adj. (C3)
Repeat adjustments 5, 6 and 7.				

\* With grid clip connected. A .001 uF capacitor should be connected in series with the "high" side of the test instrument.

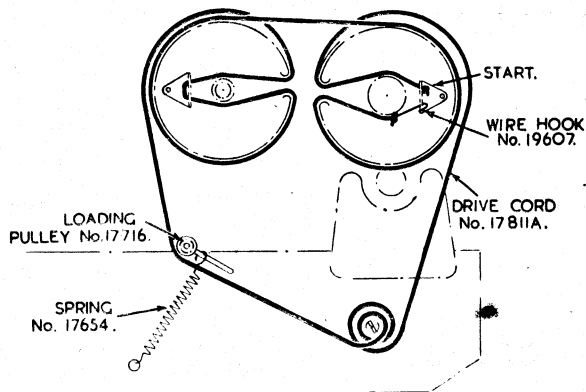
† Ganged tuning capacitor fully closed.

‡ Rock the Tuning Control back and forth through the signal and reset the dial pointer to the .6 Mc mark, if necessary, by turning it in the required direction whilst holding the tuning control knob.

#### Tuning Drive Cord Replacement.

To replace the drive cord it is first necessary to remove the front panel assembly by removing the dial pointer (it pulls straight off) and then the four mounting screws.

Disconnect the spring from the loading pulley. The diagram shows the route of the cord and the method of attachment. The cord is made from a 27½ inch cut length which allows for the knot at each end. When fitting, apply tension to the cord during the operation and use a pair of round nose pliers to bend the hook round the anchor plate to take up any slack. Place the loading pulley on the drive cord and replace the spring.



#### Chassis Removal.

First remove the control knobs and felt washers. Each knob is held by a set screw. Then, remove two screws from underneath the cabinet and withdraw the chassis.

#### Resetting the Dial Pointer.

Should the pointer become displaced it can be reset as follows:

- (1) First turn the tuning control knob clockwise until the pointer stops turning.
- (2) Then, whilst holding the tuning control firmly, turn the pointer with the other hand to bring it to a horizontal position.
- (3) Next tune a known local station and note any inaccuracy of the pointer in relation to the station.
- (4) Finally, again holding the tuning control firmly, turn the pointer sufficiently to correct the error.

#### Loudspeaker Service.

To remove the loudspeaker, first unsolder the connecting leads. Peel back the fret material backing to reveal the four mounting screws and unscrew these to remove the unit.

It is inadvisable to attempt loudspeaker repairs other than adjustment of the voice coil and replacement of the transformer. The fitting of a new cone should be done only by Service Departments suitably equipped to do the work.

To centre the voice coil, first remove the front dust cover by carefully cutting around the inside of the voice coil with a sharp knife. Loosen the suspension screws, insert three narrow paper "feelers" in the gap and retighten the suspension screws. The "feelers" should be approximately 3/16 inch wide and 0.006 inch thick.

Test the loudspeaker, and, if satisfactory, fasten a replacement dust cover, part number 7848, in place with latex rubber cement.

## SOCKET VOLTAGES AND CURRENTS

Valve.	Bias Volts.	Screen Grid to Chassis Volts.	Anode to Chassis Volts.	Anode Current mA.	Filament Volts.
1A7GT Converter .....	0	40	90	0.4	1.3—1.4
Oscillator .....	—	—	55	0.8	—
1P5GT I.F. Amplifier .....	0	90	90	1.5	1.3—1.4
1H5GT Detector .....	0	—	35*	0.06	1.3—1.4
1Q5GT Output .....	—4.5	90	85** 100†	8.0** 9.0†	1.3—1.4
Total Battery Current —0.8 Amp.					

Measured with no signal input. Volume Control-Battery Switch maximum clockwise.

\* This reading may vary, depending on the resistance of the voltmeter used.

\*\* 507-M and 508-M only.

† 507-MY only.

## D.C. RESISTANCE OF WINDINGS.

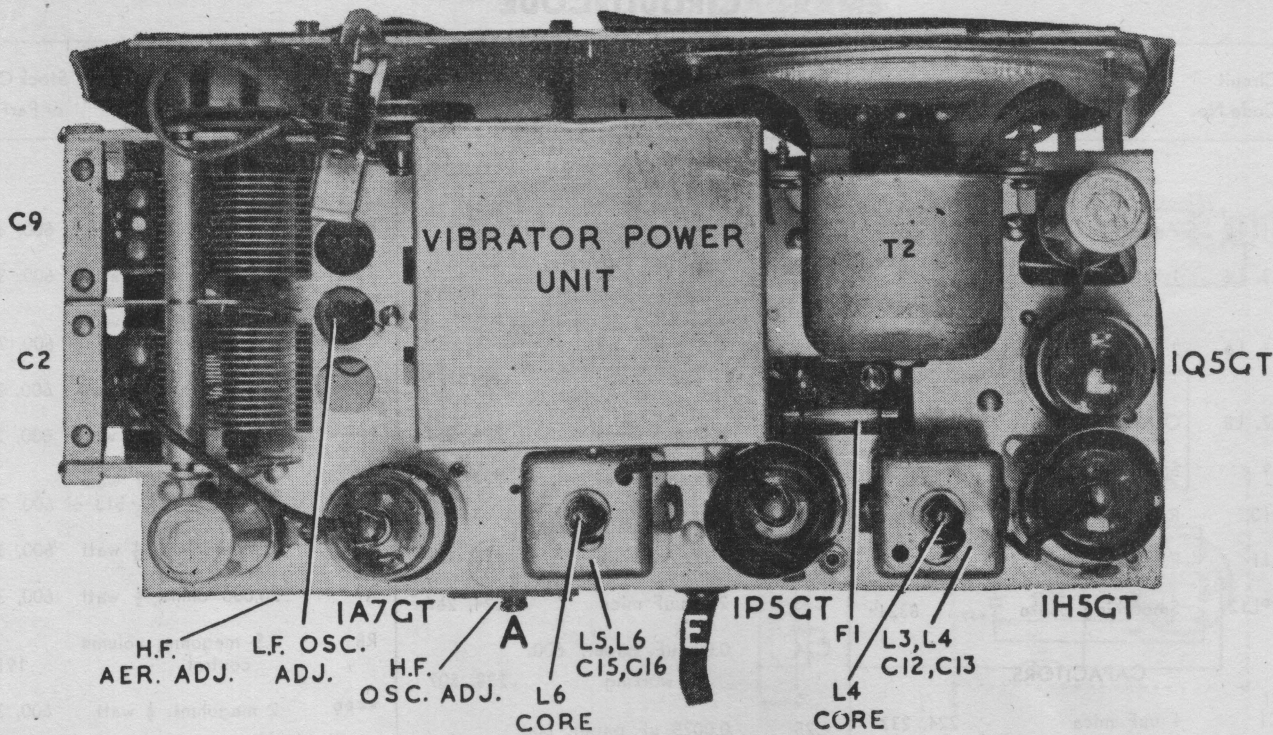
Winding	D.C. Resistance in ohms
Aerial Coil	
Primary (L1)	9.5
Secondary (L2)	3.5
Oscillator Coil	
Primary (L7)	2
Secondary (L8)	6.5
I.F. Transformer Windings	7.5
Loudspeaker Input Trans- former (T2)	
Primary	650
Secondary	*
Vibrator Transformer	
Primary	*
Secondary	500
Smoothing Choke (L9)	*
R.F. Filer Choke (L10)	*
R.F. Filter Choke (L11)	9
Smoothing Choke (L12)	200

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

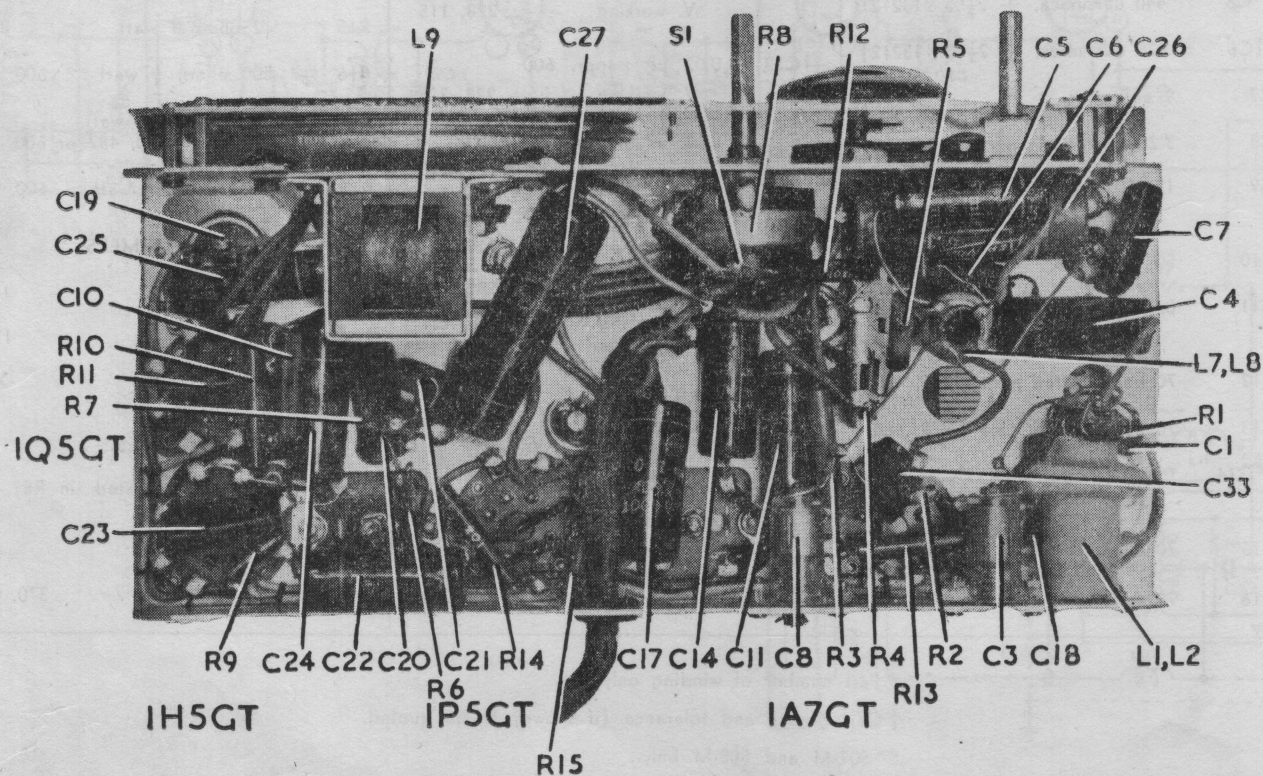
\* Less than 1 ohm.

## MECHANICAL REPLACEMENT PARTS.

Item.	Part No.	Item.	Part No.
Arm, pulley .....	17719	Drive Cord .....	17811A
Aerial Terminal Assembly .....	17717	Drum, drive .....	17627
Bracket, ganged capacitor mtg.		Drum, pointer .....	17626
Front .....	17619	Dust cover, loudspeaker .....	7848
Rear .....	17620	Hook, drive cord .....	19607
Bracket, tuning drive spindle .....	17648	Knob .....	17603
Cabinet .....	C62	Plate, tuning drive mounting .....	17621
Clamp, dial scale .....	17720	Panel, fuse .....	19158
Clip, grid .....	7459	Pointer, dial .....	17602
Clip, horseshoe .....	2524	Pulley, loading .....	17716
Cloth, loudspeaker fret .....	17608	Socket, valve .....	4704
Cone Assembly, loudspeaker .....	8330	Spindle, pointer .....	17625
Dial Scale —		Spindle, tuning drive .....	17647
507-M, 508-M .....	17656	Spring, iron core locking .....	3091
507-MY .....	20287	Spring, loading, drive cord .....	17654
		Strap, chassis mounting .....	17634

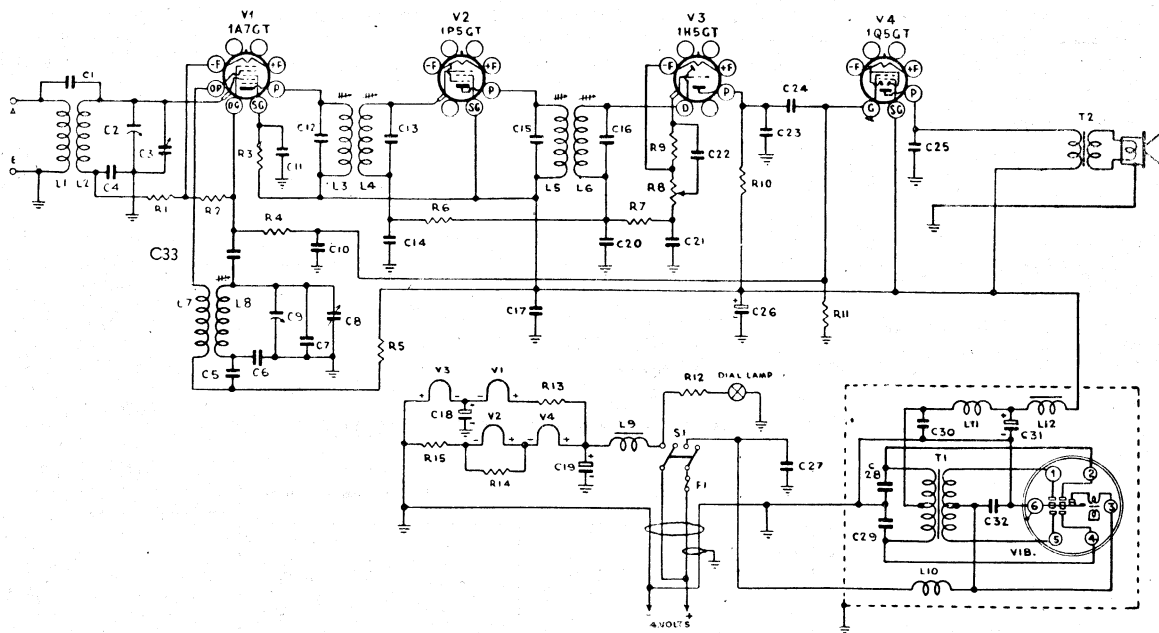


CHASSIS (TOP VIEW) MODELS 507-M and 508-M.



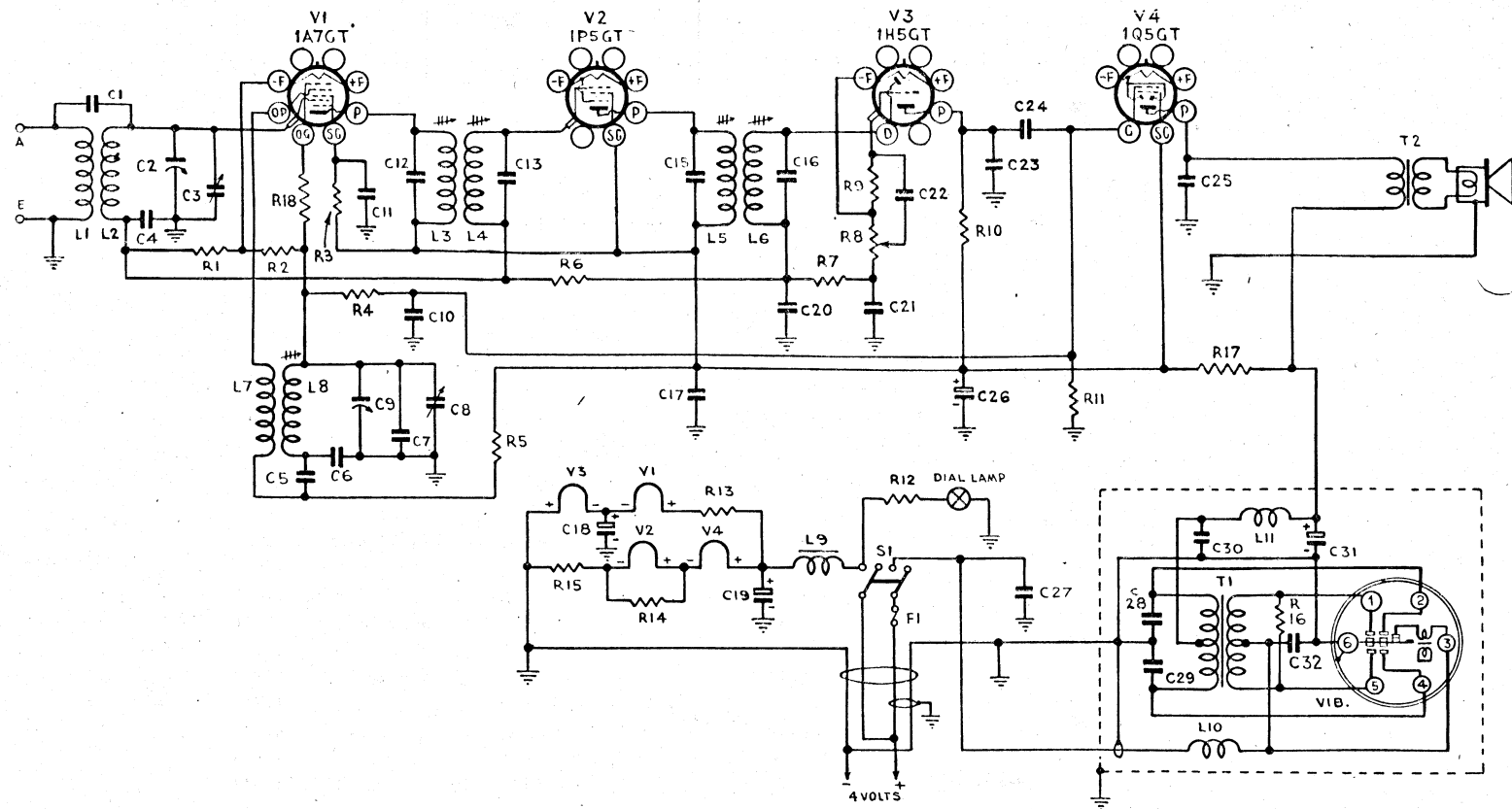
CHASSIS (UNDERNEATH VIEW) MODELS 507-M and 508-M.

# CIRCUIT DIAGRAMS



NOTE: R16, which is not shown, is connected between pins 1 and 5 of the vibrator.

MODELS 507-M and 508-M:



MODEL 507-MY.