CIRCUIT CODE RADIOLA MODEL 437-P

Code No.	Description	Part No.
	INDUCTORS	
L1	Loop Aerial Coil	27534
L2, L3	Oscillator Coil	25145
L4, L5	1st I.F. Transformer	27324
L6, L7	2nd I.F. Transformer	27324
	RESISTORS	
R1	0.1 megohm ½ watt	
R2	800 ohms ½ „	
R3	2.5 megohms ½ „	
R4	2.5 megohms ½ „	
R5	20,000 ohms ½ „	
R6	0.25 megohm ½ „	
R7	10 megohms ½ „	
R8	1.0 megohm Volume Control (Incl. S1)	27530
R9	3.2 megohms ½ watt	
R10	0.63 megohm ½ „	
R11	Not used*	
R12	1.0 megohm ½ „	
R13	800 ohms ½ „	
	CAPACITORS	
C1	12-445 $\mu\mu$F Tuning	18621
C2	3-25 $\mu\mu$F trimmer	27526
C3	70 $\mu\mu$F mica	
C4	0.05 μF paper 200V working	
C5	0.05 μF paper 200V working	
C6	470 $\mu\mu$F padder $\pm$ 2½%	
C7	12-445 $\mu\mu$F Tuning	18621
C8	3-25 $\mu\mu$F trimmer	27526
C9	14 $\mu\mu$F mica	
C10	0.4 μF paper 200V working	
C11	47 $\mu\mu$F silvered mica	
C12	47 $\mu\mu$F silvered mica	
C13	0.05 μF paper 200V working	
C14	0.05 μF paper 200V working	
C15	47 $\mu\mu$F silvered mica	
C16	47 $\mu\mu$F silvered mica	
C17	200 $\mu\mu$F mica	
C18	0.025 μF paper 400V working	
C19	0.05 μF paper 200V working	
C20	0.025 μF paper 400V working	
C21	25 μF 40 P.V. Electrolytic	
C22	0.0025 μF paper 600V working.	
C23	20 μF 200 P.V. Electrolytic	
	TRANSFORMER	
T1	Loudspeaker Transformer	XA220
	LOUDSPEAKER	
	4 inch permanent magnet	BH1
	SWITCH	
S1	ON/OFF Switch (on R8)	

* Junction of R12 and battery negative to earth.

TECHNICAL INFORMATION AND SERVICE DATA

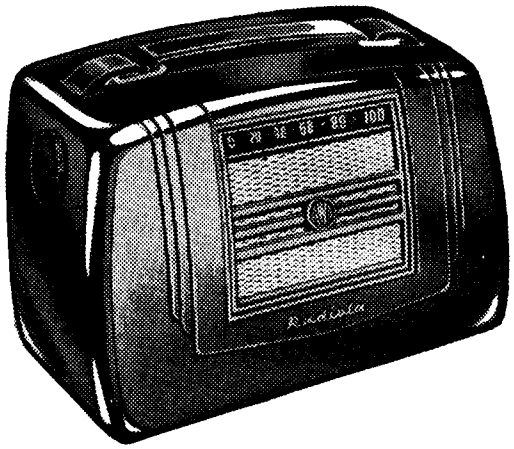
AWA RADIOLA

Portable Model 437-P

FOUR VALVE, BROADCAST, DRY-CELL BATTERY OPERATED SUPERHETERODYNE

ISSUED BY

AMALGAMATED WIRELESS (A/SIA) LTD.



ELECTRICAL SPECIFICATIONS.

Frequency Range ..... 540-1600 Kc/s (555-187.5 metres)
Intermediate Frequency ..... 455 Kc/s
Battery Complement .... One 7½V, 9V-90V Battery Pack No. 753
Battery Consumption ..... L.T. 50 mA H.T. 12 mA
Loudspeaker (Permanent Magnet) ..... 4 inch — code No. BH1
Transformer XA220
V.C. Impedance ..... 3 ohms at 400 C.P.S.
Undistorted Power Output ..... 200 milliwatts

Power Unit Operation:

The receiver may be operated on the following voltage ranges by altering the transformer tappings:

200-215 volts
216-230 volts
231-245 volts
246-260 volts

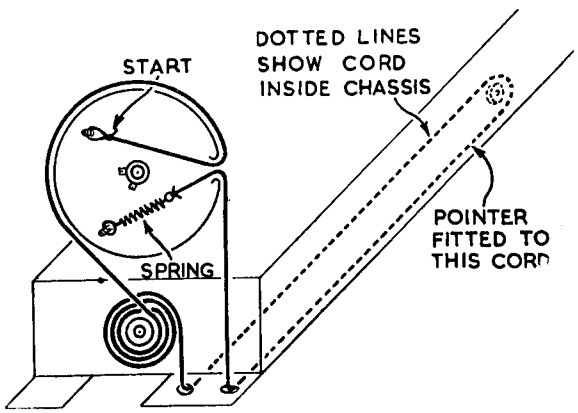
Power Unit Frequency Range ..... 50-60 C.P.S. and 40 C.P.S.

Valve Complement:

(1) 1R5 Converter
(2) 1T4 I.F. Amplifier
(3) 1S5 Detector, A.F. Amplifier, A.V.C.
(4) 3V4 Output

Controls:

ON/OFF-Volume Control — left hand end of cabinet.
Tuning Control — right hand end of cabinet.



Drive Cord Replacement:

The accompanying diagram shows the route of the cord and the method of attachment.

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 are 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 special equipment.

For all alignment operations, keep the generator output as low as possible to avoid A.V.C. action, and set the volume control in the maximum clockwise position.

Testing Instruments.

(1) A.W.A. Junior Signal Generator, type 2R3911, or,
(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) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE.

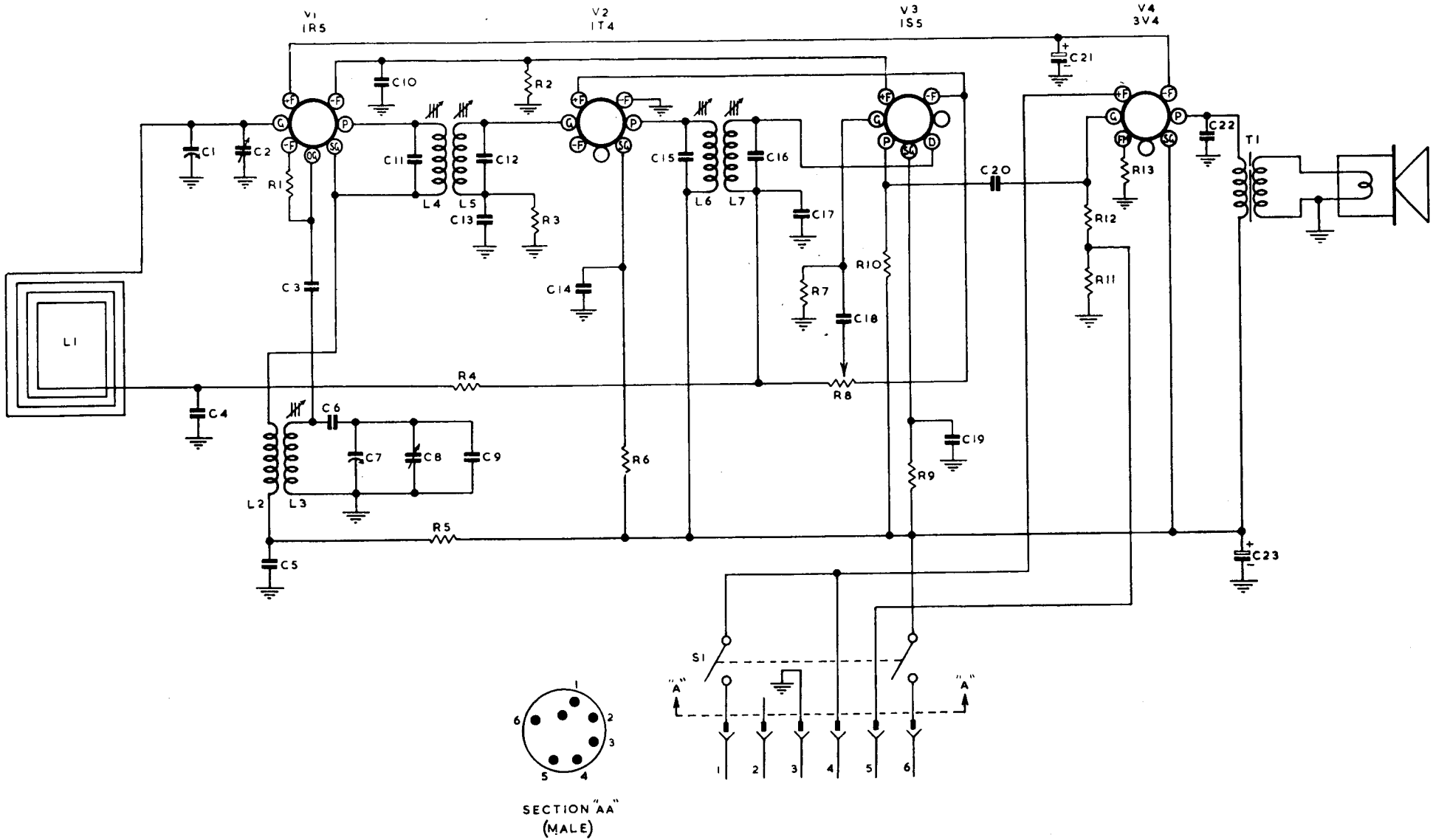
Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for maximum peak output.
NOTE: If loop leads protruding from the chassis are disconnected, connect a 1 megohm resistor across them.				
1	Grid of 1T4 * (I.F. Amp.)	455 Kc/s	Gang in full mesh	L7 and L6 Cores
2	Aerial Section of Gang * (Drive End)	455 Kc/s	Gang in full mesh	L5 and L4 Cores
With weak valves greater sensitivity may be obtained by aligning all I.F. cores from the 1R5 grid. If any instability occurs, however, the alignment procedure as above should be adhered to.				
The chassis should now be fitted in the cabinet, the resistor removed from the loop leads and the leads then connected to the aerial in the hinged back lid. The battery must be in place in the cabinet or a dummy battery fitted.				
3	Inductively coupled to loop †	600 Kc/s	600 Kc/s (approx. 10 on dial)	L.F. Osc. Core Adj. (L3) § ‡
4	Inductively coupled to loop †	1650 Kc/s	Gang fully open	H.F. Osc. Adj. (C8) ‡
5	Inductively coupled to loop †	1500 Kc/s	1500 Kc/s (approx. 90 on dial)	H.F. Aer. Adj. (C2) ‡
Repeat adjustments 3 and 5 until the maximum output is obtained.				

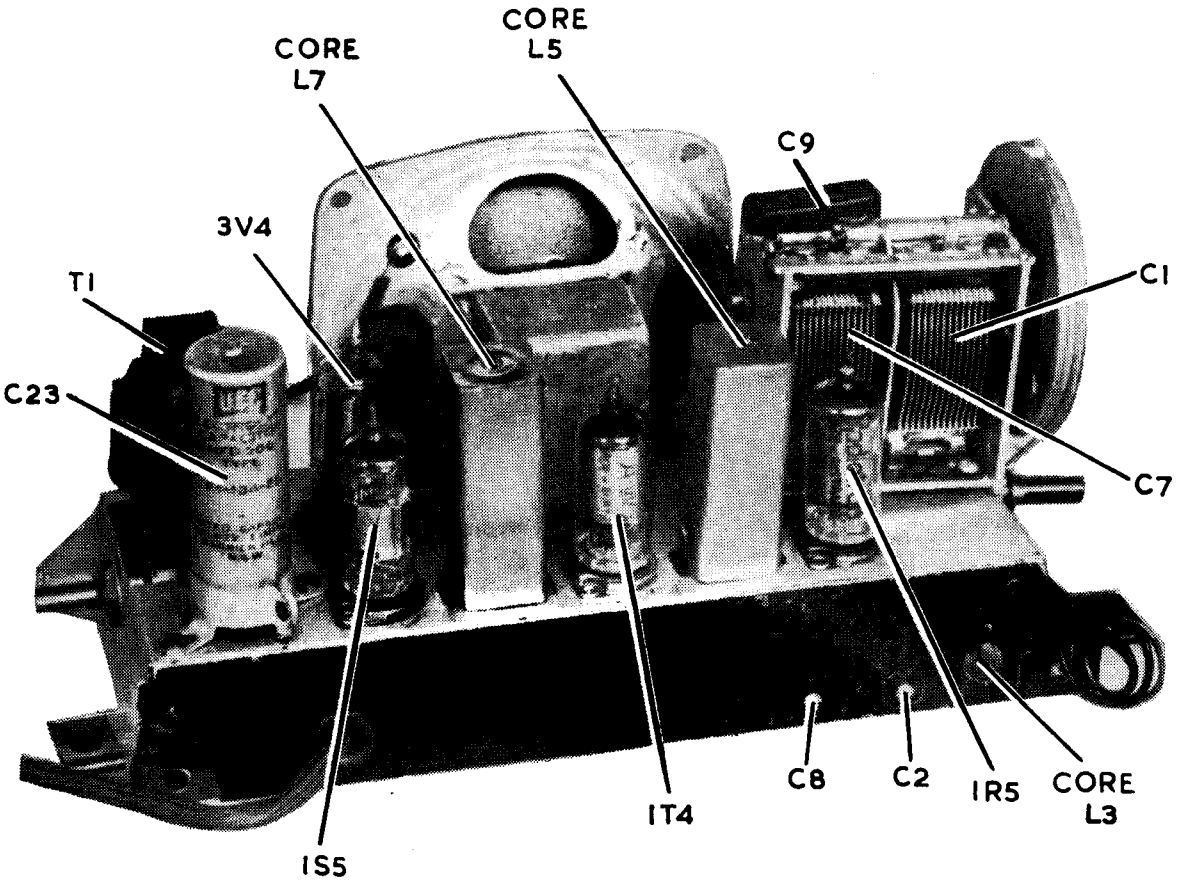
* A 0.001 μF capacitor should be connected in series with the high side of the test instrument.
† A coil comprising 3 turns of 16 gauge D.C.C. wire and about 6 inches in diameter should be connected between the output terminals of the test instrument, placed co-axial with the loop and distant not less than 1 foot from it.
§ Rock the tuning control back and forth through the signal.
‡ These adjustments are accessible through 3 holes in the cabinet back.

SOCKET VOLTAGES.

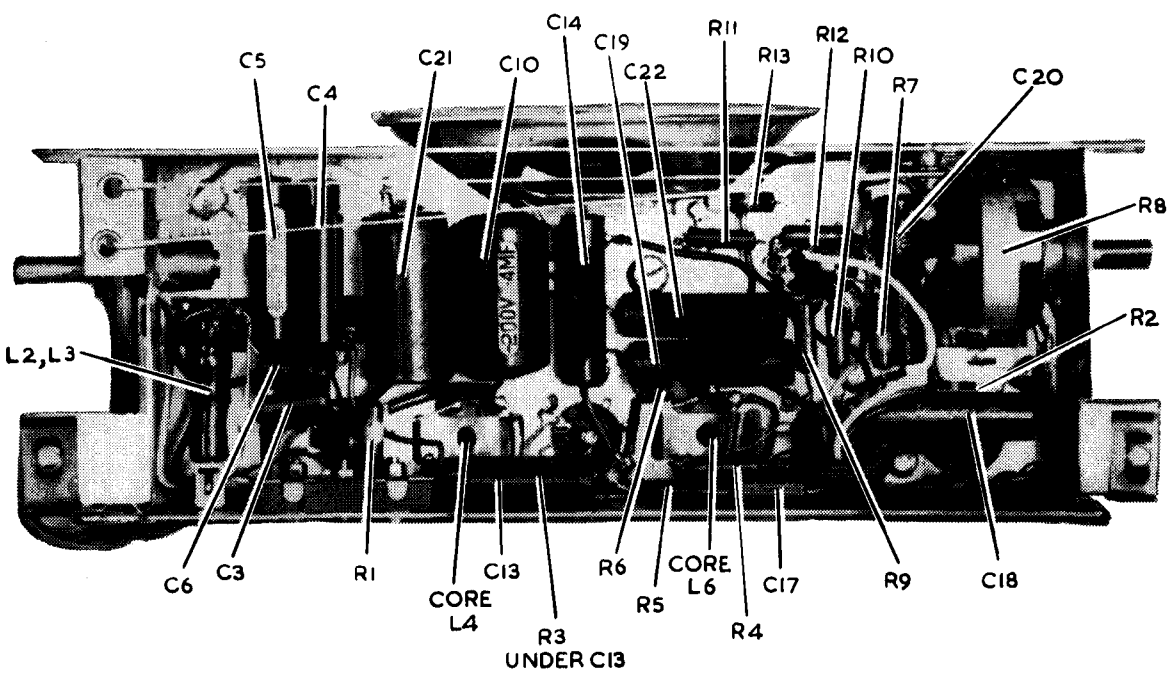
Valve		Bias Volts	Screen to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Filament Volts *
1R5	Converter	0	45	45	0.4	1.3 – 1.4
1T4	I.F. Amp.	0	35	90	1.0	1.3 – 1.4
1S5	Det., A.F. Amp., A.V.C.	0	20†	30†	0.1	1.3 – 1.4
3V4	Output	–5	90	88	6.0	2.6 – 2.8

* These will rise to 1.5V and 3.0V with a new battery.
† Calculated from measured current. An ordinary voltmeter will register a lower value.
Measured with no signal input. Volume Control maximum clockwise.


V1
1R5
V2
1T4
V3
1S5
V4
3V4
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
L1
L2
L3
L4
L5
L6
L7
T1
S1
"A"
"A"
1
2
3
4
5
6
SECTION "AA"
(MALE)



CHASSIS TOP VIEW MODEL 437-P



CHASSIS UNDERNEATH VIEW MODEL 437-P

NOTE: Owing to substitution, the position of some capacitors may be altered from the layout shown in these chassis views.