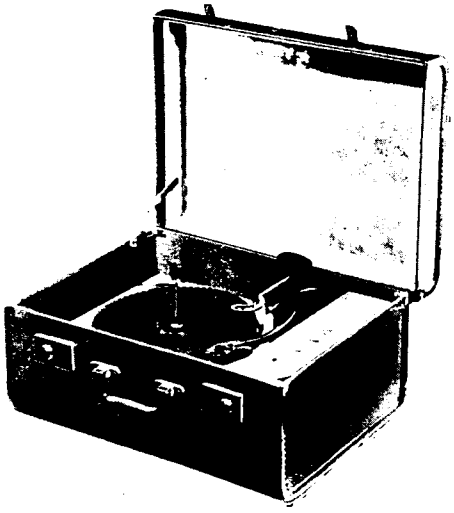
TECHNICAL INFORMATION AND SERVICE DATA

AWA RADIOLA

Model 589-GA

FIVE VALVE, BROADCAST. A.C. OPERATED SUPERHETERODYNE

ISSUED BY:
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

Frequency Range	540-1600 Kc/s. (555-187.5 Metres)
Intermediate Frequency	455 Kc/s.
Power Supply Voltage	200-260 volts A.C. 50 c.p.s.

Power Consumption:

Receiver	32 watts
Record Changer	18 watts

Loudspeaker:

5 inch permanent magnet	21175
Transformer	21204B

V.C. Impedance, 15 ohms at 400 c.p.s.

Undistorted Power Output ..... 3 watts

Valve Complement:

(V1) 6BE6 Converter

(V2) 6BA6 I.F. Amplifier

(V3) 6AV6 A.F. Amplifier, Detector, A.V.C.

(V4) 6AQ5 Output

(V5) 6X4 Rectifier

Dial Lamp ..... 6.3 volt 0.25 amp M.E.S.

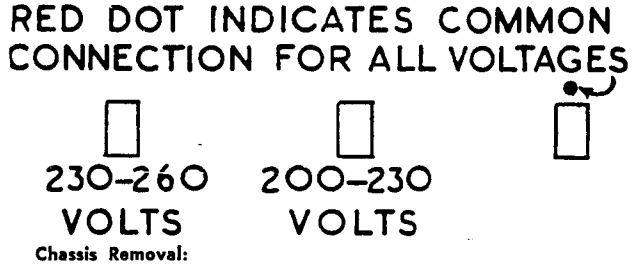
Controls:

Tuning, Volume, Phono/Radio, Power and Tone.

Connection to Power Supply:

The receiver should not be connected to any circuit supplying other than 200-260 volts A.C. at a frequency of 50 c.p.s.

Connections to the power supply are shown in the following diagram.



Chassis Removal:

Remove the power cord and secure the changer to the motor board with its two transport screws.

Remove the screw from rear of case near the power socket.

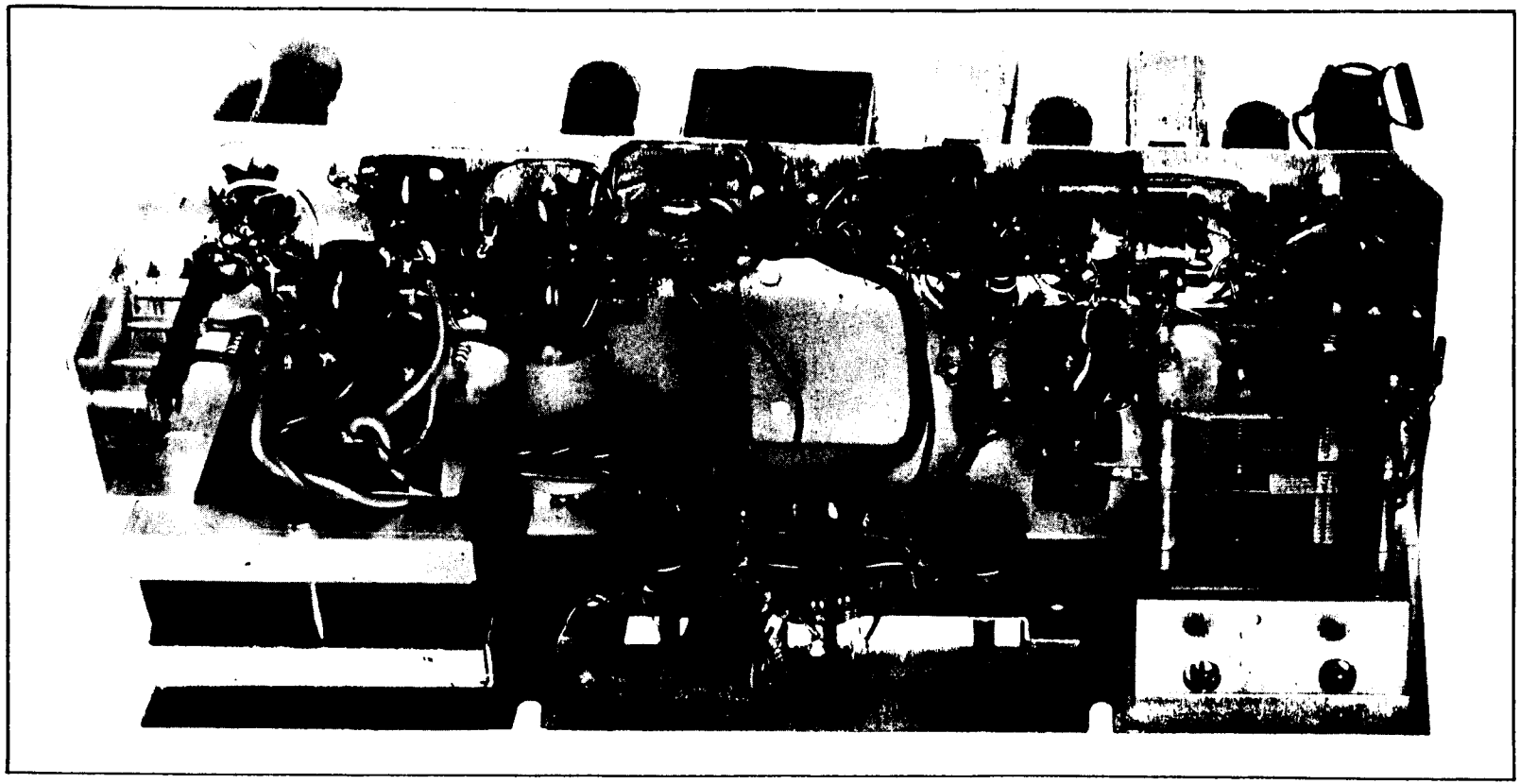
Remove all the screws and cup washers around the edge of the base board. Standing the case on its end with the radio section uppermost, gently tilt this top end of the base board forward until it clears the case. Lift the board free of the case.

Remove all control knobs on the radio. These are all push-on fits; however in the case of the tuning control forcing the knob past its normal travel with a twisting action is necessary to overcome friction between the knob and the gang spindle.

Unplug the phono power and pick up leads. Remove the four screws holding the chassis to the base board, i.e. two 3/16" Whitworth screws near the potentiometers and the two wood screws through the brackets on the side facing the record changer.

Chassis Replacement:

This is the reversal of the above operation. After replacing the tuning knob, the pointer should be lined up on the State Monograms on either side of the dial scale Check the calibration on some known stations and correct for any tracking error by forcing the knob past its free travel in the appropriate direction.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H

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 specially 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 can only be re-adjusted by skilled operators using special equipment.

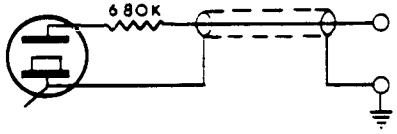
For all alignment operations, keep the generator output as low as possible to avoid A.V.C. action and set the volume control in the maximum clockwise position

Testing Instruments:

(1) A.W.A. Junior Signal Generator, type 2R7003, or

(2) A.W.A. Modulated Oscillator, series 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.



RECORD CHANGER

NOTE: A 680,000 ohms resistor has been added in series with the crystal pick-up. Should ever the record changer be replaced, be sure to add this comoonent.

ALIGNMENT TABLE

Alignment Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for Maximum Peak Output:
1	Grid of 6BE6 Front section of gang	455 Kc/s.	Gang in full mesh	L8 core
2	Grid of 6BE6 Front section of gang	455 Kc/s.	Gang in full mesh	L7 core
3	Grid of 6BE6 Front section of gang	455 Kc/s.	Gang in full mesh	L6 core
4	Grid of 6BE6 Front section of gang	455 Kc/s.	Gang in full mesh	L5 core
Repeat the above adjustments until maximum output is obtained.				
5	Aerial lead	600 Kc/s.	600 Kc s.	L.F. Osc. Core Adj. (L4)*
6	Aerial lead	1650 Kc/s.	Gang fully open	H.F. Osc. Adj. (C9)
7	Aerial lead	1500 Kc/s.	1500 Kc s.	H.F. Aer. Adj. (C5)
Repeat adjustments 5, 6 and 7.				

* Rock the tuning control back and forth through the signal.

D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in ohms
I.F. Filter Coil (L1)	18†
Aerial Coil:	
Primary (L2)	18
Secondary (L3)	4
Oscillator Coil (L4)	4
I.F. Transformer windings	18
Audio Transformer:	
Primary	350
Secondary	1
Power Transformer:	
Primary	50
H.T. Secondary	350
L.T. Secondary	*

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.

†In some receivers this reading may be as high as 60 ohms.

SOCKET VOLTAGES

VALVES	Cathode to Chassis Volts:	Screen Grid to Chassis Volts:	Anode to Chassis Volts:	Anode Current mA:	Heater Volts:
6BE6 Converter	—	90	180	2.5	6.3
6BA6 I.F. Amp.	2	90	180	3.5	6.3
6AV6 Det. A.F. Amp. A.V.C.	0	—	85	1	6.3
6AQ5 Output	0	180	250	30	6.3
6X4 Rectifier	255	—	235/235 A.C.		6.3

Total H.T. Current = 50 mA. Back Bias across R16 = 9.5 volts.

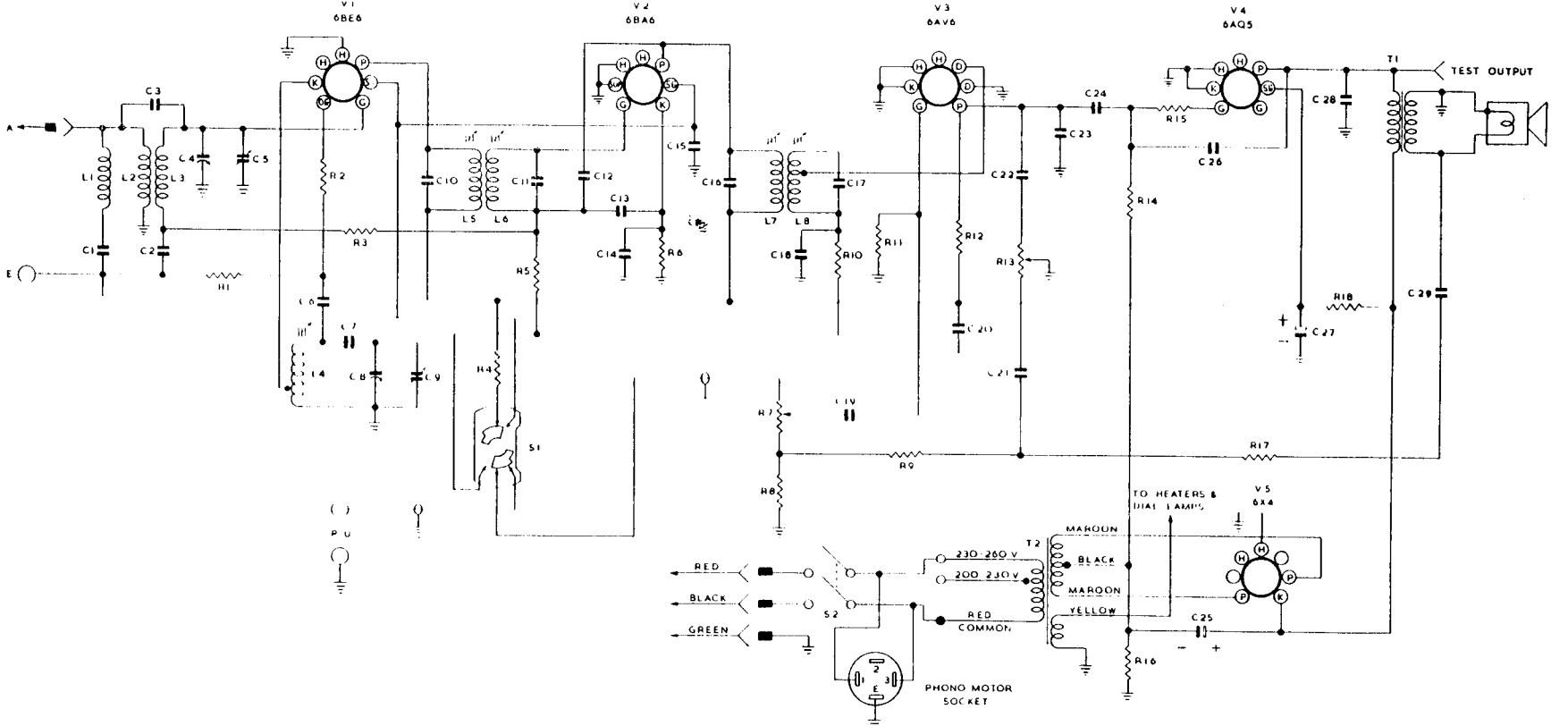
Measured at 240 volts A.C. supply. No signal input.

Volume Control maximum clockwise. Phono/Radio switch on Radio position.

Voltmeter 20,000 ohms per volt.

CIRCUIT CODE — RADIOLA 589GA

Code No.	Description	Part No	Location
	INDUCTORS		
L1	I.F. Filter (including C1)	35499	C16
L2, L3	Aerial Coil 540-1600 Kc/s.	15454 A	A16
L4	Oscillator Coil 540-1600 Kc/s.	32406	D13
L5, L6	1st I.F. Transformer	35483	A14
L7, L8	2nd I.F. Transformer	35485	A12
	RESISTORS		
	All Resistors ± 20% unless otherwise stated.		
R1	22,000 ohms ½ watt		C14
R2	100 ohms ½ watt		D15
R3	0.1 megohm ½ watt		C13
R4	15,000 ohms ± 10% 1 watt		D6
R5	1.5 megohms ½ watt		B10
R6	390 ohms ± 10% 1 watt		C12
R7	1 megohm Volume Control	32886	G11
R8	100 ohms ½ watt		F10
R9	680 ohms ± 10% ½ watt		G10
R10	47,000 ohms ½ watt		C10
R11	10 megohms ½ watt		D12
R12	0.22 megohm 1 watt		C6
R13	0.1 megohm Tone Control (Incl. S2)	32887	G8
R14	0.47 megohm ½ watt		D6
R15	47,000 ohms ½ watt		C7
R16	220 ohms ± 10% 1 watt		B5
R17	680 ohms ± 10% ½ watt		G9
R18	5,000 ohms ± 10% 2 watt		C4
	CAPACITORS		
C1	47 pF Silvered Mica (on I.F. Filter)		C16
C2	0.047 μF 200V working		D13
C3	4 pF Silvered Mica		A17
C4	12-445 pF Tuning	18677	F15
C5	4-27 pF Trimmer	33304	F13
C6	47 pF Silvered Mica		D13
C7	470 pF ± 2½% Padder		E13
C8	12-445 pF Tuning	18677	E15
C9	8-40 pF Trimmer	231185	D17
C10	100 pF Silvered Mica (in 1st I.F.)		A14
C11	100 pF Silvered Mica (in 1st I.F.)		A14
C12	10 pF Silvered Mica		B11
C13	0.047 μF 200 V working		B13
C14	0.1 μF 200V working		B11
C15	0.047 μF 400V working		G9
C16	100 pF Silvered Mica (in 2nd I.F.)		A12
C17	100 pF Silvered Mica (in 2nd I.F.)		A12
C18	220 pF Silvered Mica		C10
C19	0.01 μF 400V working		E12
C20	0.1 μF 400V working		C15
C21	0.22 μF 200V working		H8
C22	0.01 μF 400V working		D12
C23	100 pF Silvered Mica		C9
C24	0.047 μF 400V working		C7
C25	24 μF 350 P.V. Electrolytic		C2
C26	25 pF Mica		C6
C27	24 μF 350 P.V. Electrolytic		E6
C28	0.0022 μF 600 V working		B8
C29	0.22 μF 200V working		E8
	TRANSFORMERS		
T1	Loudspeaker Transformer	21204B	A9
T2	Power Transformer	25807	F4
	LOUDSPEAKER		
	5" Permanent Magnet	21175	
	SWITCHES		
S1	Radio-Phono	36305	G10
S2	Power Switch (on R13)		F8


V1
6BE6
V2
6BA6
V3
6AV6
V4
6AQ5
V5
6X4
T1
T2
TEST OUTPUT
A
E
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
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R1
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R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
S1
S2
TO HEATERS & DIAL LAMPS
MAROON
BLACK
MAROON
YELLOW
230-260 V
200-230 V
RED
COMMON
RED
BLACK
GREEN
PHONO MOTOR SOCKET

MECHANICAL REPLACEMENT PARTS

Item	Part No.
Chassis Assembly:	
Clip, I.F. Mounting	27780
Clip, socket retainer	21915
Cone Assembly, Speaker	35839
Insulator, Power Transformer	36326
Panel Assembly, Power Input	36323
Screw, Coil Mounting	31373
Socket, 4 pin	28313
Socket, 7 pin miniature valve	794579
Socket, 2 pin wafer	793038
Cabinet Fitting:	
A.W.A. Badge Assembly	36331
Bracket, Motor Board Clamping	36330
Cable, Pick-up	36901
Cable, Power Input	36903
Cable, Record Changer Power	36902
Control Card	36320
Dial Scale N.S.W.	32262 A
,, ,, VIC.	32263 A
,, ,, QLD.	32264 A
,, ,, S.A.	32265 A
,, ,, W.A.	32266 A
,, ,, TAS.	32267 A
Knob Assembly, Tuning	35290
Knob Assembly, Volume, Tone, Phono/Rad.	36361
Screw, Motor Board Clamping	36317
Spring Retainer, Clamping Screw	25760
Trim, Dial Scale	36312
Washer, Felt	36801
Washer, Fibre	36800