

TECHNICAL INFORMATION AND SERVICE DATA

RADIOLA

Model 582-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)

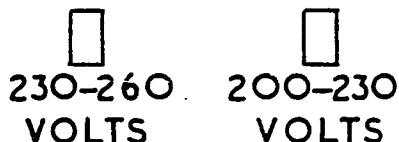
Connections to the power supply are shown in the following diagram.

Intermediate Frequency 455 Kc/s.

Power Supply Voltage 200-260 volts A.C.
50 c.p.s.

**RED DOT INDICATES COMMON
CONNECTION FOR ALL VOLTAGES**

Power Consumption:
Receiver 45 watts
Record Changer 18 watts



Loudspeakers:
12 inch permanent magnet 21180
4 inch permanent magnet 21020
Transformer 21458
V.C. Impedance of each 15 ohms at 400 c.p.s.

Undistorted Power Output 4.5 watts

Chassis Removal:

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

Valve Complement:

- (V1) 6BE6 Converter
- (V2) 6N8 I.F. Amplifier, Detector, A.V.C.
- (V3) 6AU6 A.F. Amplifier
- (V4) 6AQ5 Output
- (V5) 6X4 Rectifier

On removing the cabinet back, disconnect the internal aerial and unplug the cables for the phono-motor power, pick up and speakers. The chassis is held in position by two screws on the side near the record changer and by two wing nuts. Firstly remove the screws, then holding the chassis in one hand loosen the wing nuts off completely. The chassis may then be lifted free from the cabinet.

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

Controls:

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

Chassis Replacement:

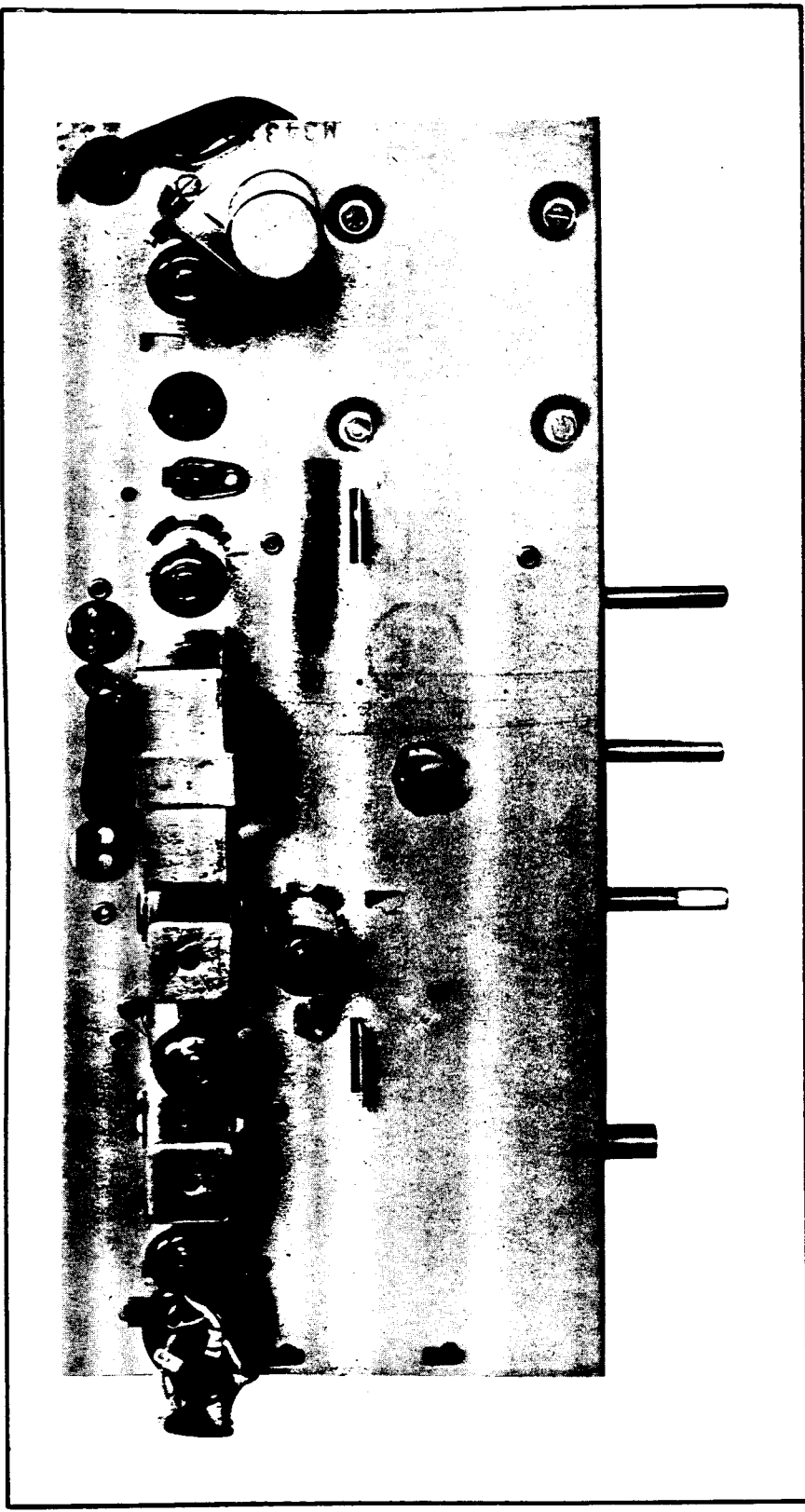
This is the reversal of the above procedure. After replacing the tuning knob, the pointer should be lined up on the State Monograms on either side of the dial scale. Check the calibration on some known stations and correct for any tracking error by forcing the knob past its free travel in the appropriate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

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.

A B C D E F G H J

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



A B C D E F G H J

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG. 2

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.

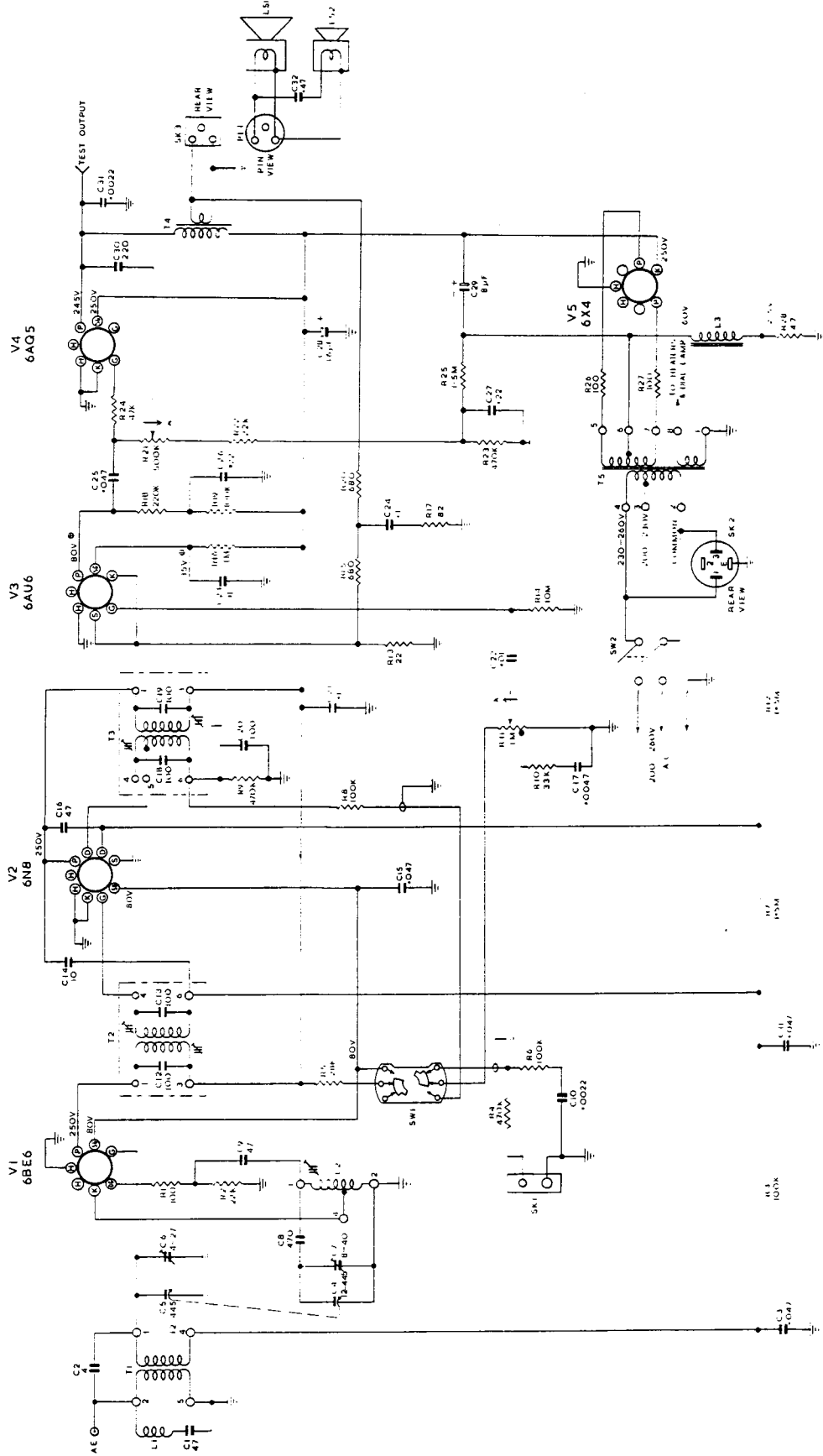
Testing Instruments:

- (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.

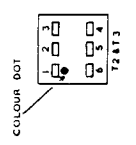
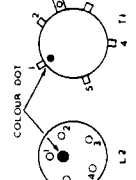
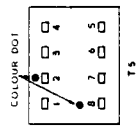
ALIGNMENT TABLE

| Alignment Order | Connect "high" side of Generator to: | Tune Generator to: | Tune Receiver to: | Adjust for Maximum Peak Output: |
|--|--|--------------------|-------------------|---------------------------------|
| 1 | Grid of 6BE6 | 455 K/cs. | Gang in full mesh | T3 Primary and Secondary |
| 2 | Front section of gang Grid of 6BE6 Front section of gang | 455 K/cs. | Gang in full mesh | T2 Primary and Secondary |
| Repeat the above adjustments until maximum output is obtained. | | | | |
| 3 | Aerial lead | 600 Kc/s. | 600 Kc/s. | L.F. Osc. Core Adj. (L2)* |
| 4 | Aerial lead | 1650 Kc/s. | Gang fully open | H.F. Osc. Adj. (C7) |
| 5 | Aerial lead | 1500 Kc/s. | 1500 Kc/s. | H.F. Aer. Adj. (C6) |
| Repeat adjustments 3, 4 and 5. | | | | |

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



NOTE: * ARROW INDICATES CLOCKWISE DIRECTION
 ⊕ VOLTAGE VARIES WITH VOLTMETER SENSITIVITY



BASE CONNECTIONS
 VIEWED FROM EXTERNAL WIRING SIDE

D. C. RESISTANCE OF WINDINGS

| Winding | D.C. Resistance in ohms |
|--------------------------------------|----------------------------|
| I.F. Filter Coil (L1) | 18 † |
| Oscillator Coil (L2) | 4 |
| H.T. Filter Choke (L3) | 1000 |
| Aerial Transformer (T1): | |
| Primary | 18 |
| Secondary | 4 |
| I.F. Transformer Windings (T3) | 18 |
| Audio Output Transformer (T4): | |
| Primary | 380 |
| Secondary | 1.4 |
| Power Transformer (T5): | |
| Primary | 55 |
| H.T. Secondary | 440 |
| 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 | — | 80 | 250 | 1.5 | 6.3 |
| 6N8 I.F. Amp., Det., A.V.C.: | — | 80 | 250 | 3 | 6.3 |
| 6AU6 A.F. Amp. | — | 35* | 80* | 1 | 6.3 |
| 6AQ5 Output | — | 250 | 245 | 38 | 6.3 |
| 6X4 Rectifier | 250 | — | 280/280 A.C. R.M.S. | — | 6.3 |

*Varies with voltmeter sensitivity.

Total H.T. Current = 58 mA.

Volts across choke (L3) = 58V D.C.

Volts across back-bias resistor (R28) = 2.5 volts.

Voltages measured at 240 volts A.C. supply with no signal input

Volume Control maximum clockwise and "Phono-Radio" switch in Radio position.

Measurements taken on highest scale giving accurate readable deflection on 20,000Ω per volt voltmeter

CIRCUIT CODE — RADIOLA 582GA

| Code No. | Description | Part No. | Fig. | Location | Code No. | Description | Part No. | Fig. | Location |
|------------------|---|----------|------|----------|----------|---|----------|------|----------|
| RESISTORS | | | | | C15 | 0.047 μ F \pm 20% 400 V working paper | | | H11 |
| R1 | 100 ohms \pm 20% | | 1 | C15 | C16 | 47 μ F \pm 10% N750 tubular | | 1 | B12 |
| R2 | 22K ohms \pm 10% | | 1 | D14 | C17 | 0.0047 μ F \pm 20% 600 V working paper | | 1 | F12 |
| R3 | 100K ohms \pm 20% | | 1 | C14 | C18 | 100 μ F \pm 5% Silvered Mica (In 2nd I.F.) | | 1 | C11 |
| R4 | 470K ohms \pm 10% | | 1 | A12 | C19 | 100 μ F \pm 5% Silvered Mica (In 2nd I.F.) | | 1 | C11 |
| R5 | 28K ohms \pm 10% | | 2 | G10 | C20 | 100 μ F \pm 10% Silvered Mica | | 1 | B10 |
| R6 | 100K ohms \pm 20% | | 1 | B13 | C21 | 0.1 μ F \pm 20% 400 V working paper | | 1 | D16 |
| R7 | 1.5 Megohm \pm 10% | | 1 | B12 | C22 | 0.01 μ F \pm 20% 400 V working paper | | 1 | F11 |
| R8 | 100K ohms \pm 20% | | 1 | B10 | C23 | 0.1 μ F \pm 20% 400 V working paper | | 1 | D11 |
| R9 | 470K ohms \pm 10% | | 1 | B10 | C24 | 0.1 μ F \pm 20% 200 V working paper | | 1 | E8 |
| R10 | 33K ohms \pm 20% | | 1 | G13 | C25 | 0.047 μ F \pm 20% 400 V working paper | | 1 | C8 |
| R11 | 1 Megohm, 100K ohm tap Volume Control | 36805 | | H12 | C26 | .22 μ F \pm 20% 400 V working paper | | 1 | B6 |
| R12 | 1.5 megohms \pm 10% | | 1 | B13 | C27 | 0.22 μ F \pm 20% 200 V working paper | | 1 | D4 |
| R13 | 22 ohms \pm 10% | | 1 | D12 | C28 | 16 μ F 525 P.V. Electrolytic | | 1 | D2 |
| R14 | 10 Megohms \pm 20% | | 1 | E12 | C29 | 8 μ F 525 P.V. Electrolytic | | 1 | F7 |
| R15 | 680 ohms \pm 10% | | 1 | G9 | C30 | 220 μ F \pm 10% 1000 V working Silvered Mica | | 1 | B6 |
| R16 | 1 Megohm \pm 20% | | 1 | C12 | C31 | 0.0022 μ F \pm 20% 600 V working paper | | 1 | C4 |
| R17 | 82 ohms \pm 10% | | 1 | D8 | C32 | 0.47 μ F \pm 20% 200 V working paper (On LSI) | | 1 | |
| R18 | 220K ohms \pm 20% | | 1 | B9 | | TRANSFORMERS | | | |
| R19 | 100K ohms \pm 20% | | 1 | C8 | 11 | Aerial Transformer 540-1650 K/cs. | 15454 | 2 | B2 |
| R20 | 680 ohms \pm 10% | | 1 | H9 | 12 | 1st I.F. Transformer | 27351 | 1 | C14 |
| R21 | 500K ohms, 100K Control (In L. SW2) | 36806 | | I8 | 13 | 2nd I.F. Transformer | 27353 | 1 | C11 |
| R22 | 22K ohms \pm 10% | | 1 | I6 | 14 | Auxilio Output Transformer | 21458 | 2 | B9 |
| R23 | 47K ohms \pm 10% | | 1 | C6 | 15 | Power Transformer | 17859 | 1 | G3 |
| R24 | 47K ohms \pm 20% | | 1 | C7 | | INDUCTORS | | | |
| R25 | 1.5 Megohms \pm 10% | | 1 | D6 | L1 | I.F. Filter Choke (Incl. C1) | 35499 | 1 | C17 |
| R26 | 100 ohms \pm 20% | | 1 | C2 | L2 | Oscillator Coil 540-1650 Kc/s. | 32406 | 1 | D13 |
| R27 | 100 ohms \pm 20% | | 1 | C4 | L3 | H.T. Filter Choke | 36612 | 1 | F10 |
| R28 | 47 ohms \pm 10% | | 1 | B8 | | VALVES | | | |
| C1 | 47 μ F \pm 10% Silvered Mica | | 1 | C17 | V1 | Radioiron 6BE6 | | 2 | B3 |
| C2 | 4 μ F \pm 10% Silvered Mica | | 2 | B1 | V2 | Radioiron 6N8 | | 2 | B6 |
| C3 | 0.047 μ F \pm 20% 200 V working paper | | 1 | E13 | V3 | Radioiron 6AU6 | | 2 | D7 |
| C4 | 12-445 μ F tuning (Osc.) | 18689 | 1 | E16 | V4 | Radioiron 6AG5 | | 2 | B12 |
| C5 | 1.2-445 μ F tuning (Aerial) | 18689 | 1 | G16 | V5 | Radioiron 6X4 | | 2 | B16 |
| C6 | 4-27 μ F trimmer (Aerial) | 33304 | 1 | F13 | | MISCELLANEOUS | | | |
| C7 | 8-40 μ F trimmer (Osc.) | 231185 | 1 | E17 | SW1 | Phono-Radio Switch | 36601 | 1 | H10 |
| C8 | .470 μ F \pm 2% padlder | | 1 | E13 | SW2 | Power Switch (On R21) | | 1 | G8 |
| C9 | 47 μ F \pm 10% Silvered Mica | | 1 | D14 | PL1 | 6.3 V .3 Amp. M.E.S. | | 1 | H16 |
| C10 | 0.0022 μ F \pm 20% 600 V working paper | | 1 | A14 | LS1 | 12" Permanent Magnet | 21180 | | |
| C11 | 0.047 μ F \pm 20% 200 V working paper | | 1 | B15 | LS2 | 4" Permanent Magnet | 21020 | | |
| C12 | 100 μ F \pm 5% Silvered Mica (In 1st. I.F.) | | 1 | C14 | SK1 | P.U. Socket | 793038 | 1 | A11 |
| C13 | 100 μ F \pm 5% Silvered Mica (In 1st. I.F.) | | 1 | C14 | SK2 | Phono Motor Power Socket | 28913 | 1 | C5 |
| C14 | 10 μ F \pm 10% N750 tubular | | 1 | B12 | SK3 | Speaker Socket | 31825 | 1 | A8 |

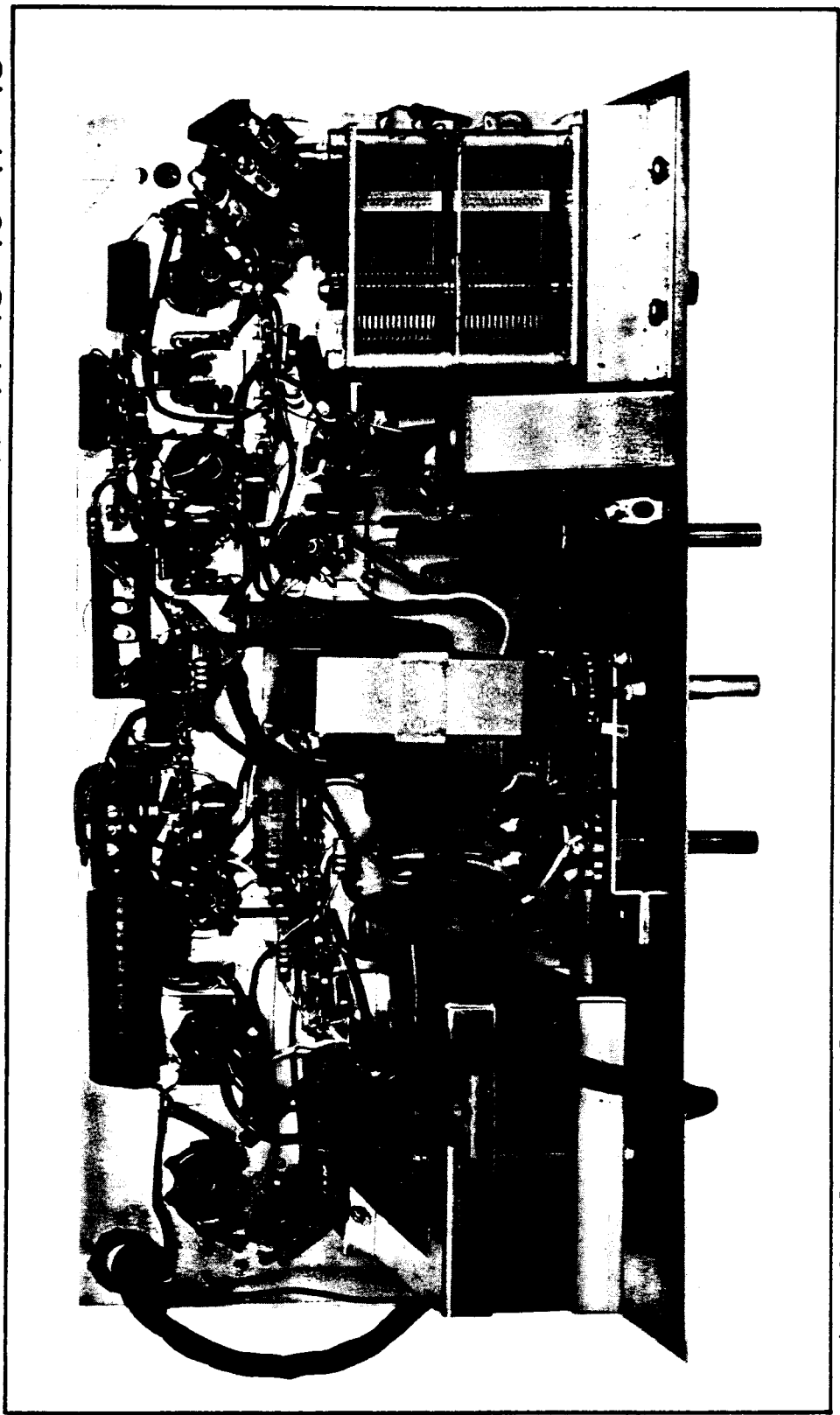
MECHANICAL REPLACEMENT PARTS

| Item | Part No. | Code No. |
|--|----------|----------|
| Cabinet Fittings: | | |
| Cabinet (582-GA) | 37750 | |
| Control Card | 36320 | |
| Dial Scales: | | |
| 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 A | |
| Knob Assembly, Volume, Tone, Phono/Radio | 40936 B | |
| Label, Valve Replacement | 37651 | |
| Leg, Cabinet (582-GA) | 41025 | |
| Nameplate Assembly | 40949 | |
| Chassis: | | |
| Bracket Assembly, Power Transformer Mounting | 36606 | |
| Bracket, Gang Mounting | 36609 | |
| Bracket, Output Transformer Mounting | 19846 | |
| Bracket, Power Transformer Mounting | 36306 | |
| Clip, I.F. Mounting | 27780 | |
| Clip, 4 Pin Socket Retainer | 21915 | |
| Insulator, Power Transformer | 36326 | |
| Screw, Oscillator Coil Mounting | 31373 | |
| Shield, Electrolytic | 36316 | |
| Socket, 9 Pin | | 794591 |
| Socket, 7 Pin | | 794579 |
| Socket, 4 Pin | 28313 | |
| Socket, 3 Pin | 31825 | |
| Socket, 2 Pin | | 793038 |
| Socket, Test Outlet | 27685 | |

When ordering, always quote the above part numbers or code numbers and in the case of coloured parts, such as cabinets, knobs, etc. the part number plus the colour.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K

FIG. 1