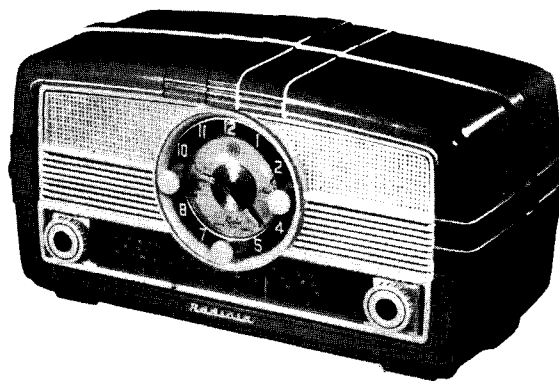


TECHNICAL INFORMATION AND SERVICE DATA

A.W.A. CLOCK - CONTROLLED - RADIO Model 469-MA

FOUR 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 Rating 200-260 volts
50 C.P.S. only

Power Consumption:

Clock 2.5 watts
Clock and Radio 37.5 watts

Loudspeaker:

4 inch permanent magnet
Part No. 26846
Transformer 31772D
V.C. Impedance 3 ohms at 400 C.P.S.

Undistorted Power Output: 1.5 watts.

Valve Complement:

- (1) 6BE6 — Converter
- (2) 6AU6 — I.F. Amplifier
- (3) 6BV7 — Detector, A.V.C., High Gain Output
- (4) 6X4 — Rectifier.

Chassis Removal:

(1) Remove the Clock Alarm Knob by unscrewing it clockwise and the remainder of the Clock and Radio knobs by pulling them straight off their spindles. Also remove the "Hand-set" knob and spindle by pulling it from the back of the cabinet.

(2) Remove two recessed nuts from the top of the cabinet back, two screws from underneath the cabinet back and withdraw it.

(3) The chassis is held to the cabinet by two screws situated under it. Removal of these enables the chassis to be withdrawn.

Clock Removal:

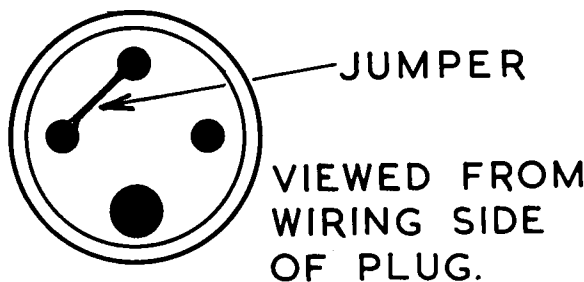
- (1) Remove the complete chassis from the cabinet.
- (2) Remove two screws holding the plastic shield to the metal spacers and withdraw the shield.
- (3) Unscrew the two metal spacers holding the top of the clock to the front panel.
- (4) Remove the clock plug from the socket on the receiver chassis. The clock may now be lifted from the chassis.

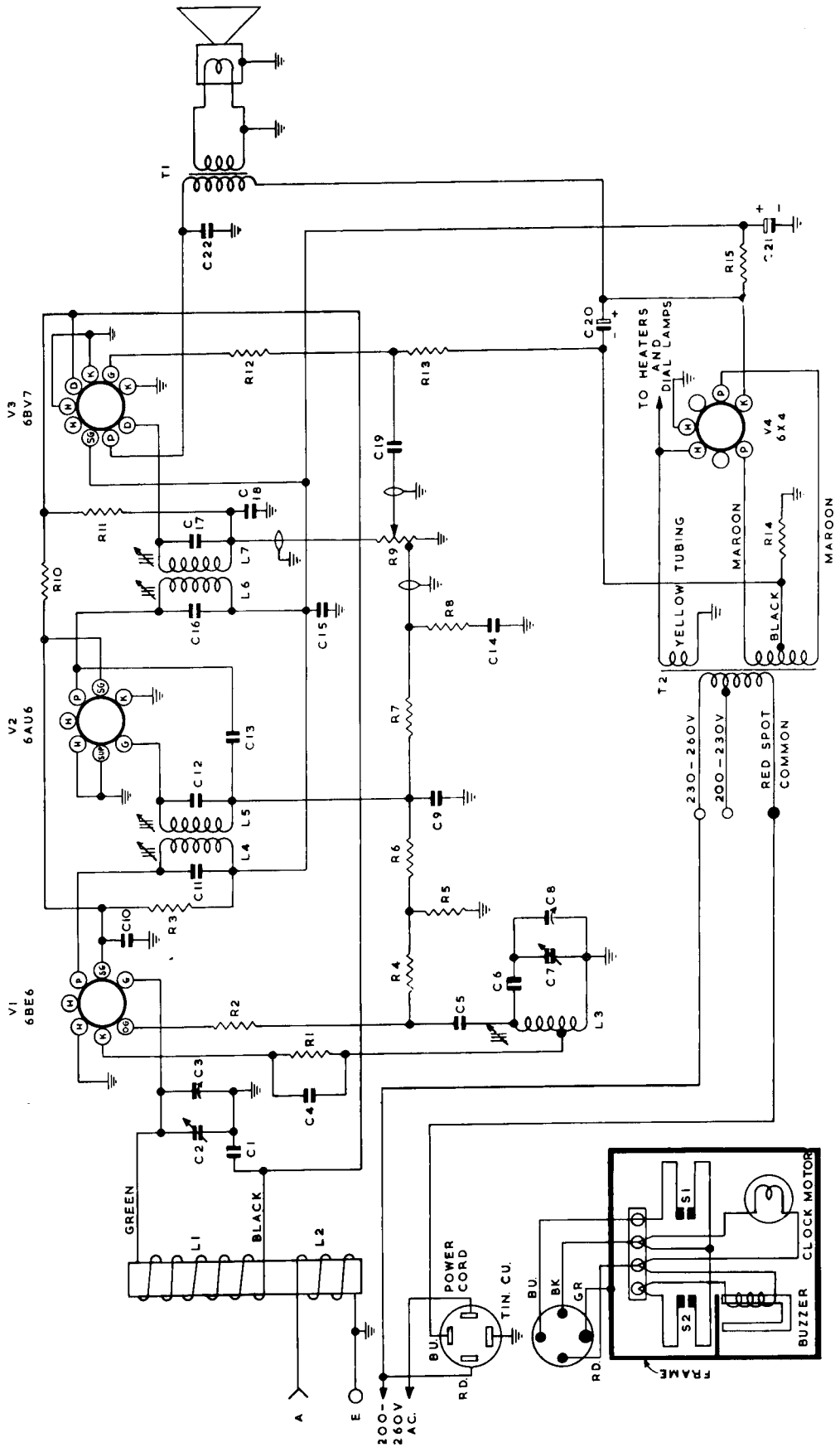
When replacing the clock, make sure that the bottom of the clock face engages in the clips on the receiver front panel. Then replace the metal spacers.

Important: As repairs to the clock will require the use of special equipment, it is recommended that a spare be kept in stock and the faulty unit be returned to the A.W.A. Service Department, 152 Parramatta Road, Stanmore, for repair.

Operation of Receiver Without Clock:

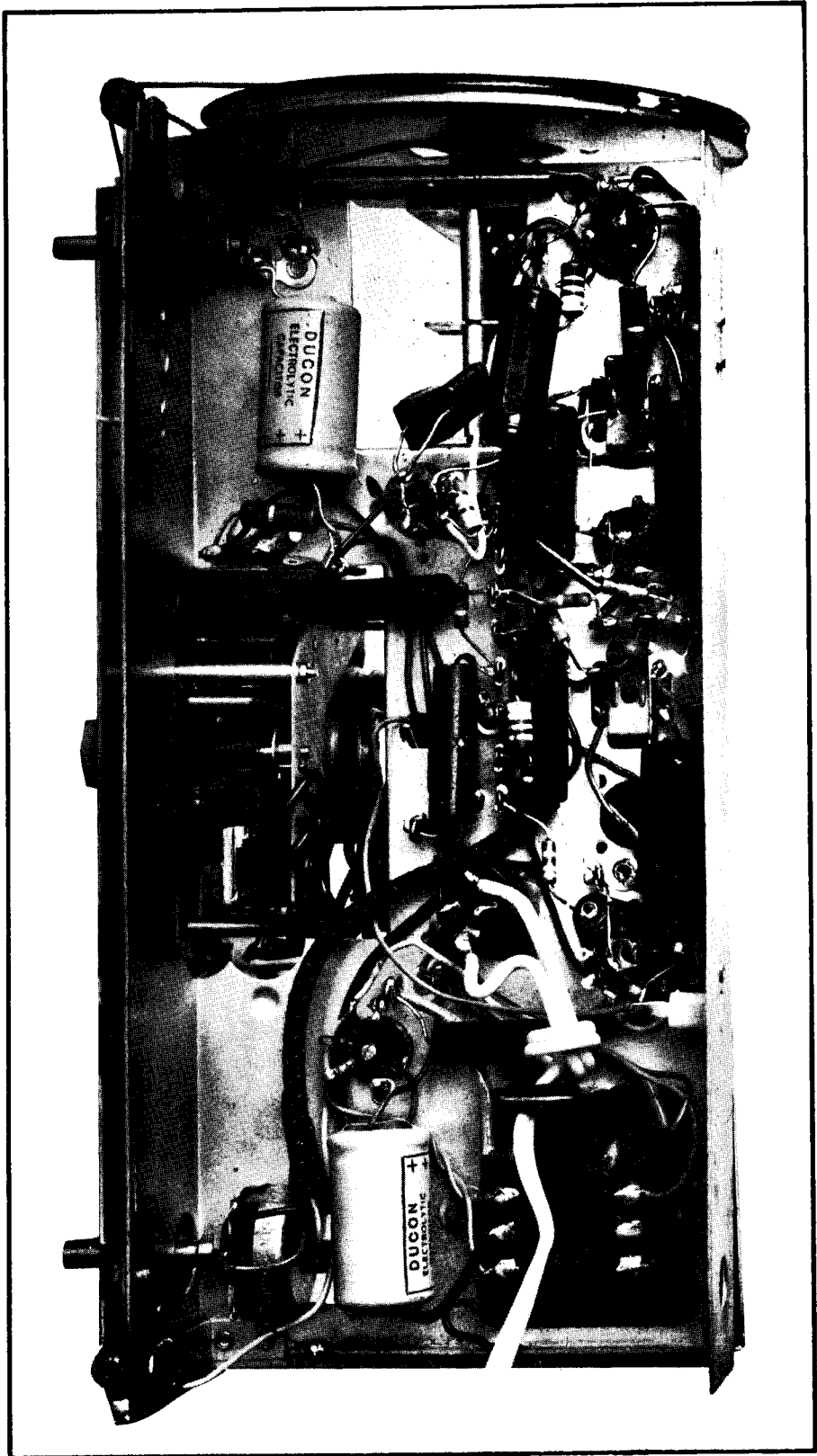
If it is desired to operate the receiver for either the servicemen or client's use whilst a faulty clock is being repaired Plug A.W.A. No. 29696 may be obtained from the A.W.A. Service Department and wired with a jumper as shown in the accompanying diagram. The plug is inserted in the socket on the receiver chassis.





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 J



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

FIG.2

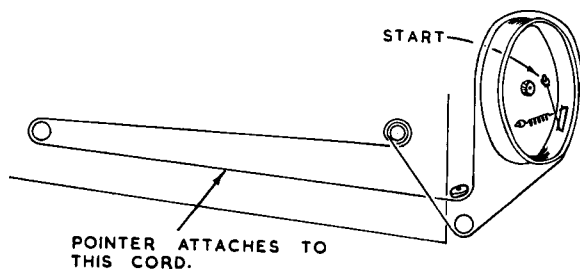
Connection to Power Supply:

The receiver should not be connected to any circuit supplying other than alternating current from 200-260 volts and at a frequency of 50 c.p.s. only.

The power supply connections are shown in the accompanying diagram.

Drive Cord Replacement:

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



RED DOT INDICATES COMMON CONNECTION FOR ALL VOLTAGES

□
230-260
VOLTS

□
200-230
VOLTS



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 special equipment.

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.

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 Dial to:	Adjust for Maximum Peak Output:
1	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L7 Core
2	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L6 Core
3	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L5 Core
4	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L4 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Inductively Coupled to Rod Aerial *	600 Kc/s.	600 Kc/s.	L.F. Osc. Core Adj. (L3) †
6	Inductively Coupled to Rod Aerial *	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C7)
7	Inductively Coupled to Rod Aerial *	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj. (C2)

* A coil comprising 3 turns of 16 gauge D.C.C. wire and about 12 inches in diameter should be connected between the output terminals of the test instrument, placed concentric with the rod aerial and distant not less than 1 foot from it.

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

D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in ohms
Ferrite Aerial Assembly	
Primary (L1)	*
Secondary (L2)	1
Oscillator Coil (L3)	5
I.F. Transformer Windings	15
Power Transformer (T2)	
Primary	50
Secondary	300
Loudspeaker Input Transformer (T1)	
Primary	525 or 430
Secondary	*

* Less than 1 ohm.

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.

SOCKET VOLTAGES

VALVES	Cathode to Chassis Volts:	Screen Grid to Chassis Volts:	Anode to Chassis Volts:	Heater Volts:
6BE6 Converter	1.8	90	170	6.3
6AU6 I.F. Amp.	—	90	170	6.3
6BV7 Det., A.V.C., Output	—	170	210	6.3
6X4 Rectifier	210	—	190/190 A.C. R.M.S.	6.3

Volts across Back-bias resistor R14 = 4V.

Total H.T. Current = 42 mA.

Measured at 240 volts A.C. supply. No signal input. Volume Control maximum clockwise. Voltmeter 20,000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

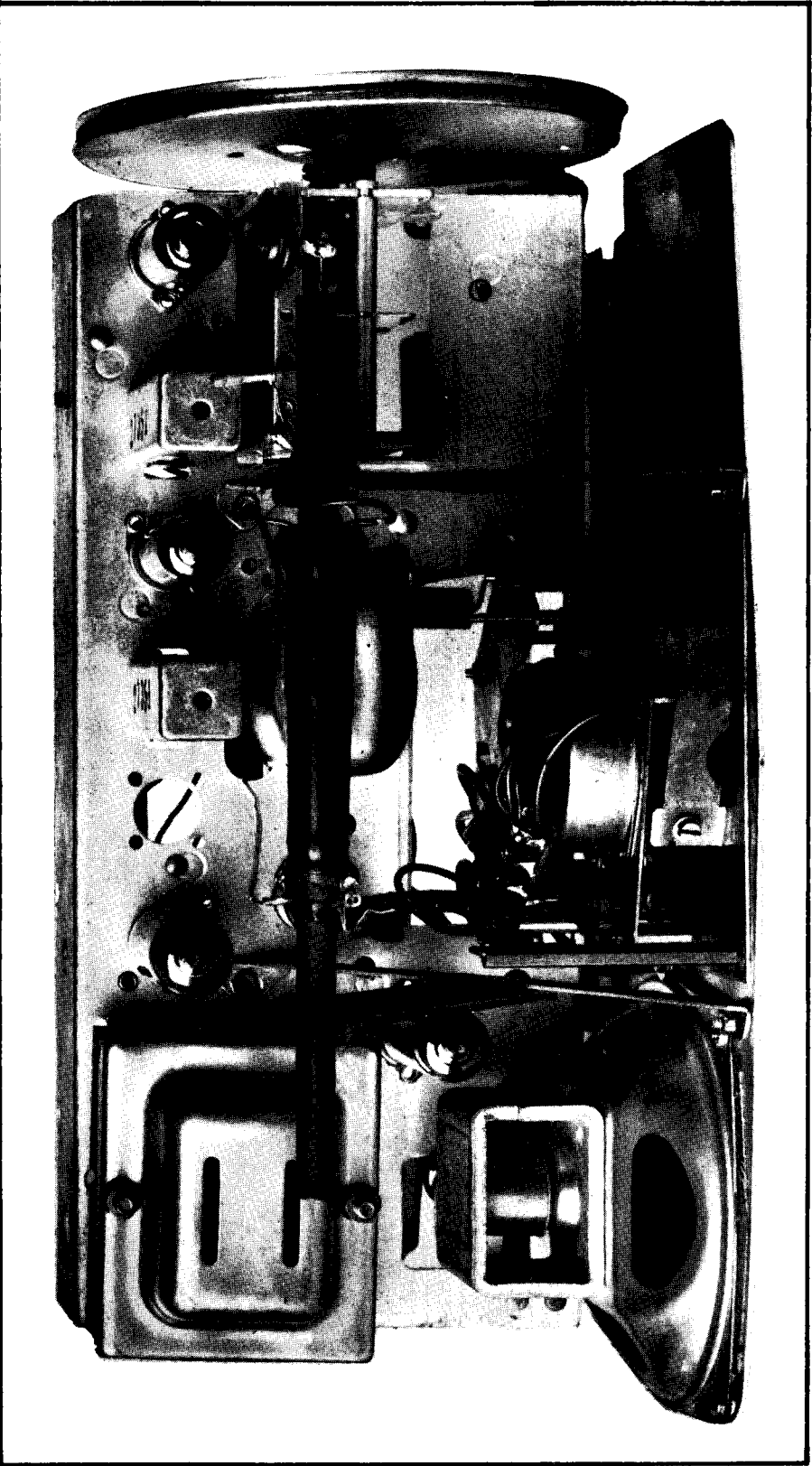


FIG 1

MECHANICAL REPLACEMENT PARTS

ITEM	PART No.	ITEM	PART No.
Bracket (2) (Chassis Mounting)	31360	Knob (Radio)	31984
Bracket (Dial Lamp)	31974	Lamp Holder	4194
Bracket (Retaining Cabinet)	31982	Light Mask	31998
Bracket (2) (Rod Aerial Support)	33196	Mounting Screw (Oscillator Coil)	31373
Cabinet Back	32466	Nameplate	27748
Cabinet Body and Fret	32464	Nut (Retaining Cabinet Back)	26523
Clamp, Spring (Retaining Clock Dust Cover)	33019	Nut (Retaining Volume Control)	5926
Clip (Retaining I.F.)	27780	Plate (Large. Underneath Cabinet)	31985
Clip (Retaining Spindle)	2524	Plate (Small. Underneath Cabinet)	31986
Clip (Retaining 4 pin socket)	21915	Pointer Assembly	31976
Clock Assembly	31736	Pulley Bracket Assembly	31975
Cover (Power Transformer)	20150	Pulley, Drive Cord	31365
Dial Scale—		Pulley Post (Pulley No. 31365)	31366
Northern	32231	Socket, 4 pin (Clock)	28313
Southern	32232	Socket, valve 7 pin	Code No. 794576
Drive Bearing	27529	Socket, valve 9 pin	Code No. 793037
Drive Cord	9576/21	Spacer (Dust Cover Mounting)	33141
Drive Drum Assembly	31381	Terminal Panel Assembly. 2 way	32822
Drive Spindle	31981	Terminal Panel Assembly. 3 way	32824
Drive Spring	1741	Terminal Panel Assembly. 4 way	32823
Dust Cover (Clock)	33018	Terminal Panel Assembly. 5 way	32836
Fret Cloth	Code No. 212043	Test Outlet	27685
Gasket (Front Panel to Cabinet)	31972	Volume Control Cable	34363
Grommet (Power Cable)	Code No. 389005	Washer (Oscillator Coil Mounting)	7910
Knobs, Clock—			
Alarm	33134		
Slumber	33135		
Hands-Set	33136		
Radio, Alarm, OFF-ON	33137		

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

CIRCUIT CODE—RADIOLA 469-MA

Code No.	Description	Part No.	Fig. No.	Location	Code No.	Description	Part No.	Fig. No.	Location
INDUCTORS									
L1, L2	Ferrite Aerial Assembly	34327A	1	F10	C5	47 $\mu\mu\text{F}$ silvered mica		2	E13
L3	Oscillator Coil 540-1600 Kc/s	32406	2	E11	C6	440 $\mu\mu\text{F}$ padder $\pm 2\frac{1}{2}\%$		2	E13
L4, L5	1st I.F. Transformer	27351	1	G5	C7	8-40 $\mu\mu\text{F}$ spiral Trimmer (on gang)		2	G4
L6, L7	2nd I.F. Transformer	27351	1	G8	C8	12-445 $\mu\mu\text{F}$ Tuning	18624	2	F4
RESISTORS									
R1	180 ohms		2	E12	C9	0.035 μF paper 600V working		2	H12
R2	100 ohms		2	G14	C10	0.05 μF paper 400V working		2	G5
R3	10,000 ohms		2	H14	C11	100 $\mu\mu\text{F}$ silvered mica (In 1st I.F.)		1	G5
R4	15,000 ohms		2	F13	C12	100 $\mu\mu\text{F}$ silvered mica (In 1st I.F.)		1	G5
R5	4,700 ohms		2	F11	C13	10 $\mu\mu\text{F}$ ceramic		2	H10
R6	1.0 megohm		2	F12	C14	0.025 μF paper 400V working		2	E9
R7	1.0 megohm		2	G11	C15	0.1 μF paper 400V working		2	H8
R8	10,000 ohms		2	E10	C16	100 $\mu\mu\text{F}$ silvered mica (In 2nd I.F.)		1	G8
R9	0.5 megohm	26890	2	C2	C17	100 $\mu\mu\text{F}$ silvered mica (In 2nd I.F.)		1	G8
	(Tapped at 0.1 megohm)				C18	220 $\mu\mu\text{F}$ ceramic		2	H10
R10	10 megohms		2	G10	C19	0.05 μF paper 200V working		2	G9
R11	1.0 megohm		2	G10	C20	24 μF 350 P.V. Electrolytic		2	E3
R12	4,700 ohms		2	G7	C21	24 μF 350 P.V. Electrolytic		2	D13
R13	1.0 megohm		2	F8	C22	0.01 μF paper 600V working		2	F5
R14	100 ohms		2	F9	TRANSFORMERS				
R15	1,000 ohms		2	C11	T1	Loudspeaker Transformer	31772D	1	E8
CAPACITORS									
C1	0.05 μF paper 200V working		2	D10	T2	Power Transformer 50 C.P.S.	25831	1	G15
C2	4-27 $\mu\mu\text{F}$ Trimmer (on gang)	33304	1	F3	LOUDSPEAKER				
C3	12-445 $\mu\mu\text{F}$ Tuning	18624	1	F3	4" Permanent Magnet				
C4	0.005 μF paper 600V working		2	F13	26846				
SWITCHES									
Radio Contacts									
Buzzer-Alarm Contacts									