



RADIO CORPORATION PTY. LTD.

DIVISION OF ELECTRONIC INDUSTRIES LTD.

126-130 GRANT STREET, SOUTH MELBOURNE, S.C.4.

TECHNICAL BULLETIN

BULLETIN AR-1.
File:--Receivers A
Date: 17/12/46.
Page 1.

SUBJECT:-

Model "AR"

Two Tube Tuned RF

Midget Mantel Receiver

For operation from:-

200-250 Volts 50 cycle AC. Mains.

This Bulletin Contains:-

1. Technical Specifications.
2. General Description.
3. Alignment Procedure.
4. Circuit Diagram.
5. Voltage Table.
6. Component Parts List.
7. Coil and Transformer Connections.

This Receiver is NOT in Production

Information is for Service Purposes ONLY

SUBJECT- Technical Specifications-Model "AR"

Tube Complement:

Type 12B8GT RF. Amplifier and Detector.
Type 32L7GT Power Output Amplifier and Half Wave Rectifier.

Tuning Range:

140 Kcs. (Filocolony) to 1640 Kcs.
550 M. (Motora) to 1900 M.

Power Consumption:-

50 Watts (Approximately).

General Description:-

The Hidget Model Model "AR" is a two tube tuned RF. receiver having a sensitivity of 500 microvolts for an output of 50 milliwatts with a 2,500 ohm load.

The circuit consists of tuned aerial and RF. stages with the pentode section of the 12B8GT tube as RF. amplifier. The triode section of the 12B8GT tube is used for detection which is resistance capacity coupled to the pentode section of the 32L7GT tube.

Bias for the RF. amplifier is obtained across the cathode resistor (circuit No. 16). Grid leak bias is provided for the detector tube and cathode bias for the output tube.

Volume is controlled by varying the bias on the variable Mu RF. amplifier section of the 12B8GT tube.

High tension which is filtered by two 16MFD. electrolytic condensers in conjunction with the speaker field coil is obtained from the half wave rectifier section of the 32L7GT tube.



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SUBJECT-

Alignment Procedure-Model "AR"

Equipment:-

Signal Generator.
Output Meter.
Alignment Tool-Part Number PM581.
Dummy Antenna-50MMFD. Mica Capacitor.

Conditions of Alignment:-

Load Impedance-2,500 ohms.
Output Level-50 Milliwatts.
Volume Control-Max. Volume (Minimum bias position).

Dial Pointer Setting:-

Remove chassis from cabinet.
Fully mesh two gang condenser plates and adjust the pointer to coincide with the mark on the side of the dial plate at the low frequency end of the dial then refit chassis to cabinet.

Alignment:-

Opera- tion	Generator Frequency	Generator Connection	Dummy Antenna	Instructions
1.	1600 Kc.	To antenna lead.	50MMFD. mica capacitor in series with generator.	Turn dial pointer to 1600 Kc. and adjust RF. and antenna transformer trimmers for maximum output.

Tuning range after alignment 540-1640 Kcs.



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SUBJECT--Voltage Table--Model "AR"

Equipment:--

DC. Volt Meter:--1,000 ohm per volt meter with 0-10 and 0-250 volt scales.

AC. Volt Meter:--0-50 and 0-250*volt scales.

Conditions of Test:--

Heater voltages measured across filaments.

All other voltages measured from tube socket contacts to chassis. Volume control at maximum volume (minimum bias) 230 volts 50 cycle AC. input to transformer primary.

Tube	Fil.	Plate	Screen	Cathode
12B8GT	12.6V.	Pentode 100V.	105V.	3V. Min.
		Triode 30V.	-	-
32L7GT	32.5V.	Pentode 90V.	105V.	7V.
		Rectifier 220V. RMS.	-	-

SUBJECT- Component Parts List - Model "AR"

<u>Circuit No.</u>	<u>Part Name</u>	<u>Tol.±</u>	<u>Rating</u>	<u>Part No.</u>
1.	.05MFD. Paper Condenser	20%	200V.DCW	PC102
2.	.00025MFD. Mica Condenser	10%	1000VT.	PC126
3.	.01MFD. Paper Condenser	20%	400V.DCW changed to	PC225
4.	.02MFD. Paper Condenser	20%		600V.DCW
5.	.005MFD. Paper Condenser	20%	400V.DCW	PC111
6.	16MFD. Electrolytic Condenser	20%	600V.DCW	PC252
7.	16MFD. Electrolytic Condenser	20%	350PV.	PC283
8.	Trimmer Condenser 3-55MMFD.	20%	350PV.	PC275
9.	Trimmer Condenser 3-55MMFD.			PC224
10.	2 Gang Variable Condenser			PC224
11.	100,000 Ohm Carbon Volume Control		PR328 or	PC253
12.	10 Megohm Carbon Resistor	10%	1 Watt	PR233
13.	500,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR236
14.	500,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR245
15.	150 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR245
16.	200 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR237
17.	200 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR176
18.	Antenna Transformer		3 Watt	PR206
19.	RF. Transformer			PT228
20.	Power Transformer			PT229
21.	Speaker 5" Dynamic, 2,600 Ohm Input			PT231
22.	Speaker 5" Dynamic, 900 Ohm Field			Changed to
23.	Tube Type 12B8GT			PT272
24.	Tube Type 32L7GT			PM375
25.	Socket-8 pin			PM277
26.	Single Contact Strip			changed to
27.	Double Contact Strip			PM532
28.	Dial Pan (Back Plate)			63/30A
29.	Dial Pulley			PM316
30.	Dial Pointer Assembly			changed to
31.	Mains Cord			A103/509
32.	Mains Adaptor			9/207-1
33.	Rubber Grommets			41/246
				A100/208
				PM281
				40/30C



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SUBJECT- Component Parts List-Model "AR"

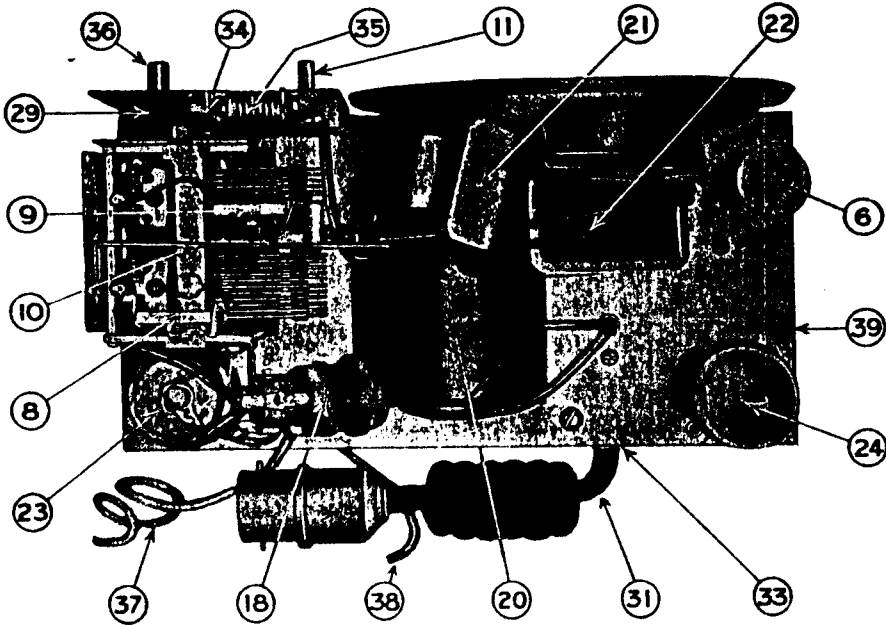
<u>Circuit No.</u>	<u>Part Name</u>	<u>Tol.±</u>	<u>Rating</u>	<u>Part No.</u>
34.	Dial Lamp 6.3V. .3A Min. Screw Base T3 $\frac{1}{4}$ Bulb			PM140
35.	Dial Lamp Socket Assembly			80/30A
36.	Tuning Control Drive Spindle			1/207
37.	Antenna Lead			
38.	Earth Lead			
39.	Chassis Base			
40.	Chassis Division Plate (part of 39)			
41.	Drive Spindle Guide Bracket			19/89
42.	Lower Mt. Brkt.-power transformer			17/205
43.	Condenser Drive Drum			A103/207
44.	Condenser Drive Drum Spring			14/207
45.	Dial Lamp Cover			28/205
46.	Dial Lamp Cover Plug			7/65-4
47.	{Dial Reading (Red and Black Printing)			24/205-2
	{Dial Reading (Green and Cream Printing)			24/205-1
48.	Knob Spring			86/71

CABINET FITTINGS

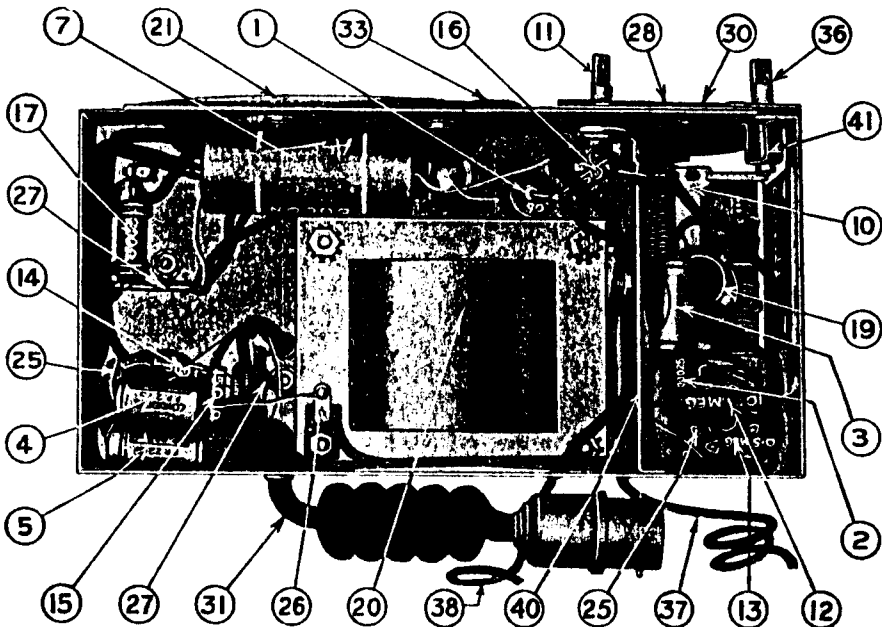
Cabinet	Cabinet Feet	Knobs	Cabinet Back
Colour Part No.	Colour Part No.	Colour Part No.	A107/205
Red A108/205-1	Black 21/81-2	Black 22/81-2	A107/205
Black A108/205-2	Red 21/81-1	Red 22/81-1	A107/205
Green A108/205-3	Champagne 21/81-6	Champagne 22/81-6	A107/205
Walnut A108/205-4	Walnut 21/81-4	Walnut 22/81-4	A107/205
White A108/205-5	Red 21/81-1	Red 22/81-1	A107/205
Champagne A108/205-6	Green 21/81-3	Green 22/81-3	A107/205

SUBJECT-

Top View of Chassis-Model "AR"



Bottom View of Chassis-Model "AR"





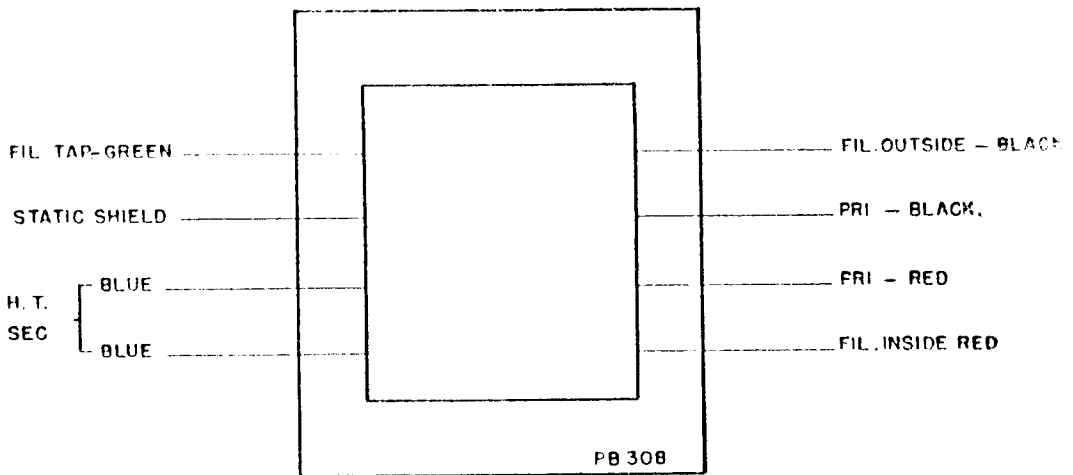
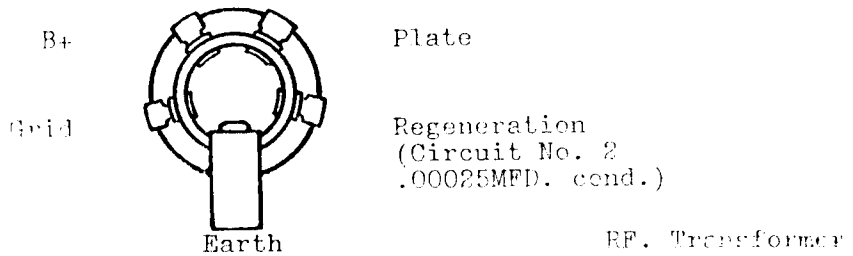
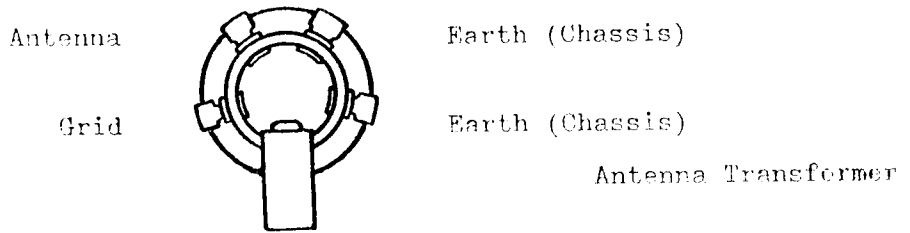
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SUBJECT— Coil and Transformer Lead Connections—Model "AR"



TRANSFORMER PT 231 LEADS AS ABOVE

TRANSFORMER P T 272 HT SEC OUTSIDE TURN AND FIL INSIDE
TURN JOINED INTERNALLY AND BROUGHT
OUT AS ONE LEAD

Power Transformer



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BULLETIN AR-2.

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SUBJECT-Substitute Rectifier/Output Tube - Model "AR"

The two tube midget receiver Model "AR" may use a type 117L7/M7GT tube in place of the 32L7GT tube providing the following alterations are made.

1. The power transformer part number PT231 or PT272 must be replaced with a different power transformer part number PT829 the physical dimensions being identical.
2. Socket connections for both tubes, circuit alterations and wiring of the new transformer are shown on the diagrams on page 2.

Socket Connections

32L7GT

117L7/M7GT

Pin 1.	Rectifier Cathode
" 2.	Heater
" 3.	Amplifier Plate
" 4.	Amplifier Screen
" 5.	Amplifier Grid
" 6.	Rectifier Plate
" 7.	Heater
" 8.	Amplifier Cathode

Pin 1.	Rectifier Cathode
" 2.	Heater
" 3.	Amplifier Plate
" 4.	Amplifier Grid
" 5.	Amplifier Screen
" 6.	Rectifier Plate
" 7.	Heater
" 8.	Amplifier Cathode

