



RADIO CORPORATION PTY. LTD.

DIVISION OF ELECTRONIC INDUSTRIES LTD.

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

TECHNICAL BULLETIN

BULLETIN: NJ-1.

Page: 1.

File: Receivers A.C.

DATE: 10/10/50.

SUBJECT: —

MANTEL MODEL "NJ"

4 Tube Superheterodyne Broadcast Receiver.

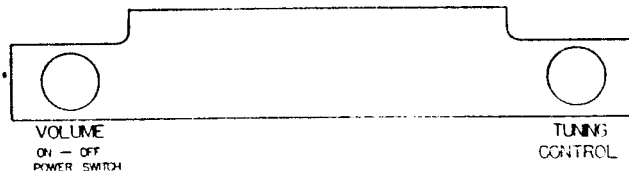
For operation from:—

200-250 Volt 50 Cycle A.C. Mains Supply.

Power Consumption:—50 watts (Approx.)

This Bulletin contains:—

1. Alignment Instructions.
2. Circuit Diagram.
3. Component Parts List.
4. Connections for I.F. and R.F. Trans.



SUBJECT-

ALIGNMENT INSTRUCTIONS - MODEL "NJ".EQUIPMENT:

Signal generator
Output meter
Mica capacitor.. 0.01MFD.
Dummy antenna .. 200MMFD. Mica
capacitor
Alignment tools Type M195 and
PM581.

ALIGNMENT CONDITIONS:

Load impedance... 5,000 ohms
Output level ... 50 milliwatts
Vol. control ... Max. vol. fully
clockwise..
Intermediate freq. 455 Kc/s.
Input voltage .. 230 volts 50 cycle
A.C. input to trans.
220-250V primary tap

Opera- tion No.	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
--------------------	-------------------------	------------------------	---------------	--------------

- | | | | | |
|----|------------------------------------|-----------|--|---|
| 1. | To control
grid of
6B8G tube | 455 Kc/s. | 0.01MFD. Mica
capacitor in
series with
generator. | Leave grid cap on tube. Peak
2nd I.F. trans. pri. and sec.
for max. output. |
| 2. | To control
grid of
6A8G tube | 455 Kc/s. | 0.01MFD. Mica
capacitor in
series with
generator | Cond. gang plates fully out of
mesh. Leave grid cap on tube.
Peak 1st I.F. trans. pri. and
sec. for max. output. |
| 3. | | | | Set centre of dial pointer on
centre of end of travel mark
near 540 Kc/s. |

RECEIVERS FITTED WITH IRON CORED ANTENNA TRANSFORMERS.

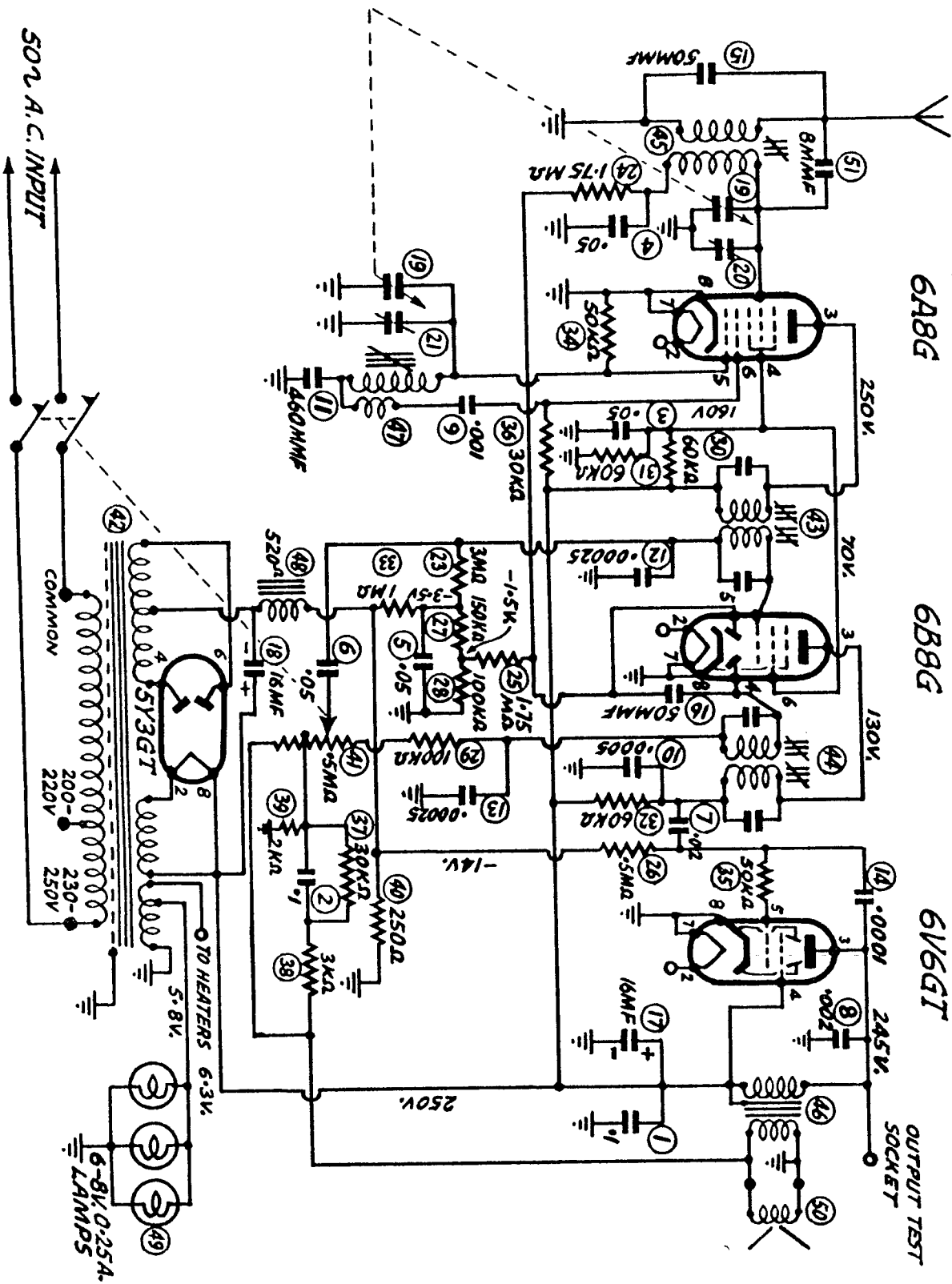
- | | | | | |
|----|------------------------|-----------|---|---|
| 4. | To antenna
terminal | 600 Kc/s. | 200 MMFD Mica
capacitor in
series with
generator | Turn gang and dial pointer until
dial pointer is on 600 Kc/s.
dial mark. Leave the gang and
dial pointer set in this posi-
tion and peak the oscl. coil.
inductance trimmer (iron core)
for max. output. |
| 5. | To antenna
terminal | 1400Kc/s | 200MMFD Mica.
capacitor in
series with
generator | Turn gang and dial pointer to
1400 Kc/s dial mark. Adjust
oscl. coil trimmer condenser for
logging and peak antenna trans-
former trimmer condenser for
max. output. |
| 6. | To antenna
terminal | 600Kc/s. | 200MMFD. Mica
capacitor in
series with
generator | Turn gang and dial pointer to
600 Kc/s. dial mark. Leave the
gang and dial pointer set in
this position. Re-peak the oscl
coil ind. trimmer (iron core)
and then peak the ant. trans.
ind. trim. (iron core) for max.
output. Do not rock the gang to
and fro through the signal while
adjusting or move the dial
pointer off 600 Kc/s. dial mark
until after the inductance trim-
mers of both of these transfor-
mers have been peaked for max.
output. |
| 7. | To antenna
terminal | 1400Kc/s | 200MMFD. Mica
capacitor in
series with
generator | Turn gang and dial pointer to
1400 Kc/s. dial mark. Adjust
oscl. coil trim. cond. for
logging and peak antenna trans.
trimmer condenser for max.
output. |

Tuning range after alignment 535 - 1640 Kc/s.

IR = 455KC/S. VOLTAGES MEASURED WITH 1000Ω/VOLT METER

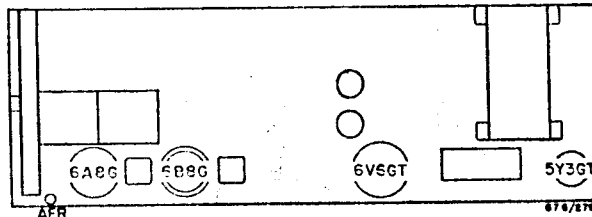
P8541

6A8G 6B8G 6V6GT



Circuit No.	Description	Tol ±	Rating	Part No.
1.	.1 MFD. Paper Condenser	20%	400V. DCW.	PC103
2.	.1 MFD. " "	20%	200V. DCW.	PC218
3.	.05MFD. " "	20%	400V. DCW.	PC109
4.	.05MFD. " "	20%	200V. DCW.	PC102
5.	.05MFD. " "	20%	200V. DCW.	PC102
6.	.05MFD. " "	20%	200V. DCW.	PC102
7.	.02MFD. " "	20%	400V. DCW.	PC111
8.	.002MFD. " "	20%	600V. DCW.	PC112
9.	.001MFD. Mica Condenser	10%	1000VT.	PC108
10.	.0005MFD. " "	10%	1000VT.	PC144
11.	.0046MFD. " "	2 1/2%	1000VT.	PC728
12.	.00025MFD. " "	10%	1000VT.	PC126
13.	.00025MFD. " "	10%	1000VT.	PC126
14.	.0001MFD. " "	10%	1000VT.	PC110
15.	.00005MFD. " "	10%	1000VT.	PC141
16.	.00005MFD. " "	10%	1000VT.	PC141
17.	16MFD. E'lytic Condenser	20%	525PV.	PC300
18.	16MFD. " "	20%	255PV.	PC659
19.	2 Gang Varb. Condenser			PC636
20.	1-5-18MMFD. Trimmer Condenser			PC250
21.	0-30MMFD. Trin. Cond. - wire wound			PC663
22.				
23.	3 Megohm Carbon Resistor	10%	1/2 Watt	PR282
24.	1.75 " " "	10%	1/2 Watt	PR248
25.	1.75 " " "	10%	1/2 Watt	PR248
26.	500,000 ohm " "	10%	1/2 Watt	PR245
27.	150,000ohm " "	10%	1/2 Watt	PR273
28.	100,000ohm " "	10%	1/2 Watt	PR103
29.	100,000ohm " "	10%	1/2 Watt	PR103
30.	60,000ohm " "	10%	1 Watt	PR415
31.	60,000ohm " "	10%	1 Watt	PR415
32.	60,000ohm " "	5%	1 Watt	PR535
33.	1 Megohm Carbon Resistor	10%	1/2 Watt	PR246
34.	50,000 ohm Carbon Resistor	10%	1/2 Watt	PR160
35.	50,000 ohm " "	10%	1/2 Watt	PR160
36.	30,000 ohm " "	10%	1 Watt	PR156
37.	30,000 ohm " "	10%	1 Watt	PR151
38.	3,000 ohm " "	10%	1 Watt	PR185
39.	2,000 ohm " "	10%	1 Watt	PR253
40.	250 ohm Wire wound resistor	10%	1 Watt	PR269
41.	.5 Megohm Carbon Resistor tapped at 40K. ohms and with DP.ST. switch attached			PR662
42.		Power Transformer 200-250V. 50 cycle operation		PT807
	Power Transformer 200-260V. 40 cycle operation			PT809
43.	I.F. Transformer No. 1. 455 Kc/s.			PT869
44.	I.F. " No. 2			PT869
45.	Antenna Transformer - iron cored			PT905
46.	Speaker Input Transformer			PT848
47.	Oscillator Coil			PT860
48.	Choke 14H. 60Ma. 520 ohms.			PT806
49.	Dial Lamp 6-8V. 0.25A. Min. Screw Base T3 1/2 size bulb			PM678
50.	Speaker, 6" Permag. - less input trans.			K166

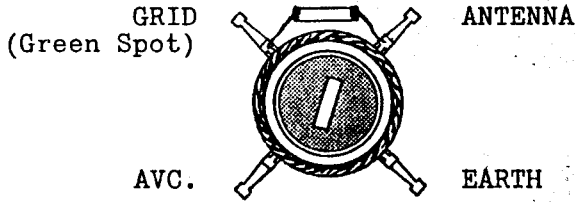
Circuit No.	Description	Tol ±	Rating	Part No.
51.	8MMFD. Ceramicon Condenser +1MMFD-0.		1000VT.	PC832
	Antenna terminal			PM306
	Socket, 8 pin			PM532
	Valve shield ST 12 bulb			PM217
	Valve shield Earth Contact			22/30C
	Valve shield Rubber Band			1/564-8
	Power Cord Rubber Grommet			40/30C
	Rubber Grommet - varb. cond. mounting			64/30A
	Clip - I.F. Trans. mounting			7/670
	Pulley 5/8" dia. - wood			13/613
	Pulley 3/4" dia. - wood			17/87
	Stude - pulley			18/87
	Dial Drum Assy.			A104/698
	Speaker Lead Clip Terminal Strip			A105/698
	Speaker Input Mount Strip - bakelite			347/64
	" " " " - fibre			348/64
	Spring - dial cord			21/698
	Tuning Spindle			6/698
	" " "C" Washer			19/57-1
	Coil Mount Clip - Aer. and Oscl.			6/622
	Pointer Ass'y.			A101/698
	Knob (2)			157/81
	Knob Spring			161/81
	Dial Reading N.S.W.			195/81-2
	" " QLD.			195/81-4
	" " VICT., TAS.			195/81-3
	" " W.A., S.A.			195/81-5
	Dial Retaining Cup			3/683-1
	Cabinet			155/81-1
	Dial Background Ass'y.			A112/698
	Speaker Clip			20/698
	Cabinet Back			19/698-1
	Clips - back retaining			17/620
	Cabinet Mount Foot Ass'y.			A138/30C



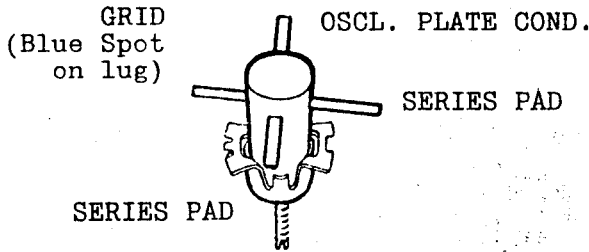
VALVE PLACEMENT DIAGRAM

SUBJECT-

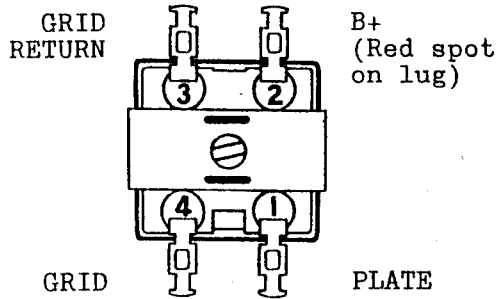
CONNECTIONS FOR I.F. and R.F. TRANSFORMERS - Model "NJ".



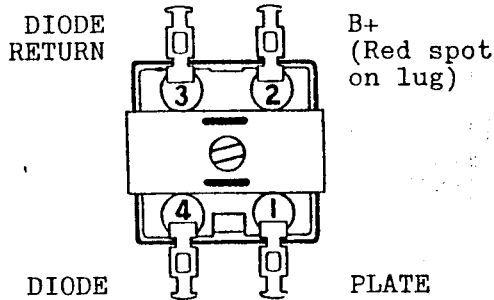
ANTENNA TRANSFORMER



OSCILLATOR COIL



1st I.F. TRANSFORMER



2nd I.F. TRANSFORMER