



TECHNICAL BULLETIN

MANTEL MODEL "HPM"

5 Valve Superheterodyne Broadcast Receiver.

For operation from:-

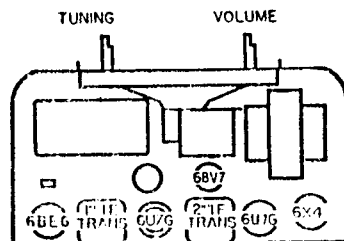
200-250 Volt 50 Cycle AC. Mains Supply.
Power Consumption 40 Watts (approx.)

Tuning Range:-

535-1640 Kc/s. : 560.7-182.9 Metres

This Bulletin contains:-

1. Alignment Instructions.
2. Circuit Diagram.
3. Component Parts List.
4. Connections for IF. and RF. Transformers.
5. Dial Drive Cording Diagram.



ALIGNMENT PROCEDURE**EQUIPMENT****ALIGNMENT CONDITIONS**

Signal Generator:		Load Impedence :	7,000 ohms
Output Meter:		Output Level :	50 Milliwatts
Mica Capacitor :	0.01MF (for I.F. trans. alignment)	Vol. Control :	Max. Vol. fully clockwise.
Dummy Antenna :	200MMF. Mica Capacitor	Intermed. Freq.:	455 Kc/s.
Alignment Tools :	Type M195 and PM581.	Input Voltage :	230 Volts 50 Cycle AC. input to trans. 221-250 volt pri. tap.

Dummy Antenna: The 200MMF. dummy antenna must not be connected to the free end of the 25 ft. antenna during alignment, but must be connected to the antenna junction lug on the chassis. It is not necessary to have the 25 ft. antenna connected to the receiver during alignment, if it is connected it should be rolled up into a small hank.

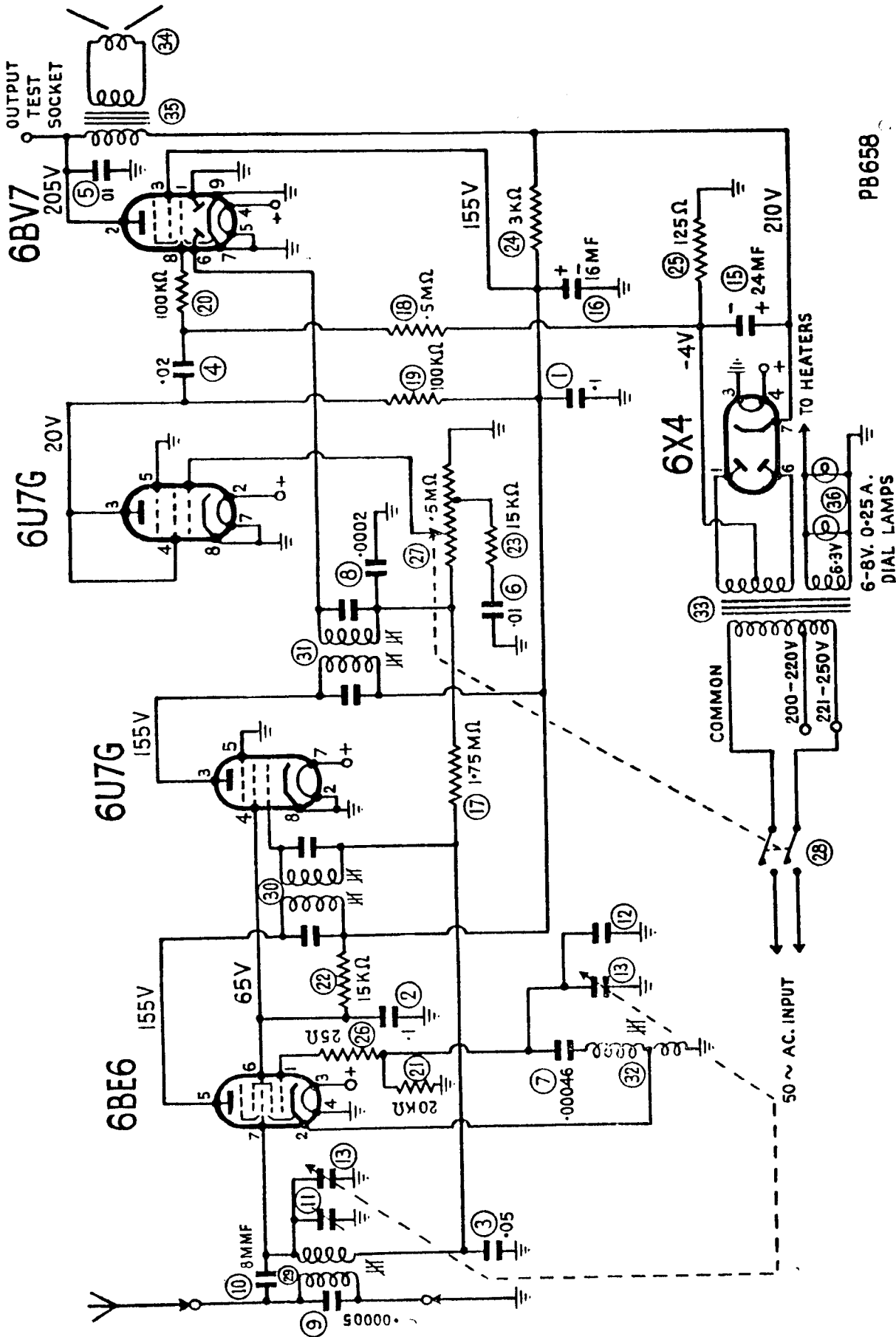
Opera- tion No.	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
1.	To control grid of 6U7G I.F. valve	455 Kc/s.	0.01MF. Mica capacitor in series with generator	Remove chassis from cabinet. Leave grid cap on valve. Peak 2nd I.F. trans pri. and sec. for max. output.
2.	To control grid of 6BE6 valve (pin No. 7)	455 Kc/s.	0.01MF. Mica capacitor in series with generator	Turn cond. gang plates fully out of mesh. Leave grid wire attached to valve socket. Peak 1st I.F. trans pri. and sec. for max. output.
3.				Repeat operations No. 1 and 2.
4.				Fully mesh the cond. gang plates. Set the centre of the dial pointer to align with the centre of the end of travel mark on the dial reading near 540 Kc/s.
5.	To antenna junction lug on chassis	600 Kc/s.	200MMF. Mica capacitor in series with generator	Turn cond. gang and dial pointer until centre of dial pointer aligns with centre of 600Kc/s. spot on dial reading. Leave the gang and pointer set in this position and peak the oscl. coil inductance trim (iron core) for max. output.

Opera- tion No.	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
6.	To antenna junction lug on chassis	1400 Kc/s.	200MMF. Mica capacitor in series with generator	Turn cond. gang and dial pointer until centre of dial pointer aligns with centre of 1400Kc/s. spot on dial read- ing. Adjust oscl. coil trim condenser for logging and peak antenna trans. trim. condenser for max. output.
7.	To antenna junction lug on chassis	600 Kc/s.	200MMF. Mica capacitor in series with generator	Turn cond. gang and dial pointer until centre of dial pointer aligns with centre of 600Kc/s. spot on dial reading. Leave the gang and pointer set in this position. Re-peak oscl. coil ind. trim. (iron core) and then peak the antenna trans. ind. trim. (iron core) for max. output. Do not rock the gang or dial pointer to and fro through the signal while adjusting or move them until after the inductance trimmer (iron core) of both of these transformers has been peaked for max. output.
8.	To antenna junction lug on chassis	1400 Kc/s.	200MMF. Mica capacitor in series with generator	Turn cond. gang and dial pointer until centre of dial pointer aligns with centre of 1400Kc/s. spot on dial read- ing. Adjust osc. coil trim. condenser for logging and re-peak antenna trans. trim. condenser for max. output.

Tuning range after alignment: 535-1640 Kc/s.

STYLING LIST

	WALNUT CABINET	IVORY CABINET	MARBLE IVORY CAB.
Cabinet	17/628-1 Walnut	17/628-5 Ivory	17/628-9 Marble Ivory
Knob	22/81-4 Walnut	22/81-6 Champagne	22/81-6 Champagne
	GREEN CABINET	CHINESE RED CABINET	AMBER CABINET
Cabinet	17/628-2 Green	17/628-6 Chinese Red	17/628-10 Amber
Knob	22/81-3 Green	22/81-4 Walnut	22/81-8 Amber
	BLUE CABINET	MAHOGANY CABINET	AUST. WHITE CAB.
Cabinet	17/628-3 Blue	17/628-7 Mahogany	17/628-11 Aust. White
Knob	22/81-7 Blue	22/81-4 Walnut	22/81-5 White
	CHAMPAGNE CABINET	MARBLE CHAMP. CAB.	WINE CABINET
Cabinet	17/628-4 Champagne	17/628-8 Marble Champ.	17/628-12 Wine
Knob	22/81-6 Champagne	22/81-6 Champagne	22/81-11 Wine



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MODEL - HPM

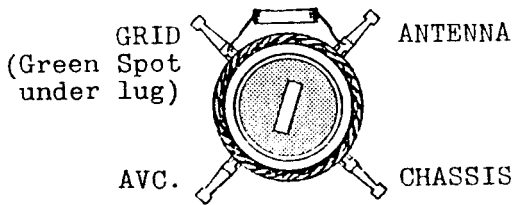
IF - 455 Kc/s 1000Ω/V. VOLTMETER

Circuit No.	Description	Tol.±	Rating	Part No.
1.	.1MF. Paper Condenser	20%	400V. DCW.	PC103
2.	.1MF. Paper Condenser	20%	400V. DCW.	PC103
3.	.05MFD. Paper Condenser	20%	200V. DCW.	PC102
4.	.02MF. Paper Condenser	20%	400V. DCW.	PC111
5.	.01MF. Paper Condenser	20%	600V. DCW.	PC140
6.	.01MF. Paper Condenser	20%	600V. DCW.	PC140
7.	.00046MF. Mica Condenser	2½%	1000VT.	PC728
8.	.0002MF. Mica Condenser	10%	1000VT.	PC124
9.	.00005MF. Mica Condenser	10%	1000VT.	PC141
10.	8MMF. Mica Cond. part of Antenna Trans. circuit No. 29			PC832
11.	1.5-18MMF. Trimmer Condenser			PC737
12.	0-30MMF. Trimmer Condenser (wire wound)			PC663
13.	2 Gang Varb. Condenser with gears attached			PC715
14.				
15.	24MF. Electrolytic Condenser	20%	350PV.	PC276
16.	16MF. Electrolytic Condenser	20%	350PV.	PC283
17.	1.75 Megohm Carbon Resistor	10%	½ Watt	PR248
18.	.5 Megohm Carbon Resistor	10%	½ Watt	PR245
19.	100,000 Ohm Carbon Resistor	10%	1 Watt	PR165
20.	100,000 Ohm Carbon Resistor	10%	½ Watt	PR103
21.	20,000 Ohm Carbon Resistor	10%	½ Watt	PR166
22.	15,000 Ohm Carbon Resistor	10%	1 Watt	PR225
23.	15,000 Ohm Carbon Resistor	10%	½ Watt	PR500
24.	3,000 Ohm Carbon Resistor	10%	1 Watt	PR295
25.	125 Ohm Wire Wound Resistor	10%	½ Watt	PR739
26.	25 Ohm Wire Wound Resistor	10%	½ Watt	PR281
27.	.5 Megohm Carbon Potentiometer tapped at 40,000 Ohms DP.ST. switch attached on rear of housing			PR738
28.	DP. ST. Switch (part of volume control circuit No. 27.)			
29.	Antenna Transformer			PT905
30.	IF. Transformer 455 Kc/s.			PT869
31.	IF. Transformer 455 Kc/s.			PT869
32.	Oscl. Coil			PT859
33.	{ Power Transformer 200-250 Volt 50 cycle mains Power Transformer 200-260 Volt 40 cycle mains			PT938 PT939
34.	5" Permag. speaker type 5B			K185
35.	Speaker Input transformer 7,000-3.7 Ohms imp. code No. EBG96			PT964
36.	6-8V. 0.25 Amp. dial lamp Min. screw base T 3 1/4 size bulb			PM678
37.				

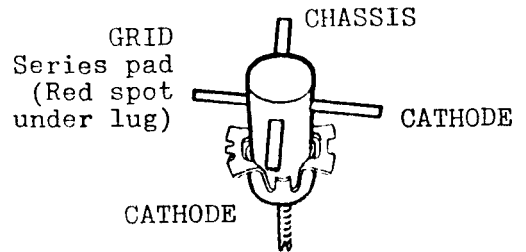
Description	Part No.
Valve Socket-8 pin	PM532
Valve Socket-7 pin	A104/58
Valve Socket-9 pin	279/250
Valve Shield for 6U7G valve	PM217
Valve Shield Earth Contact	22/30C
Terminal Strip-3 lug	A103/509
Terminal Strip-5 lug	A567/30C
Terminal Strip-2 lug	A107/30A
Rubber Grommet on power cord	40/30C
Clip IF trans mount	7/670
Clip-coil mount	6/622

<u>Description</u>	<u>Part No.</u>
Dial Cord	34/754
Dial Reading	37/640-2
Dial Lamp Socket Assy.	A140/30C
Valve Grid Clip	873/495
Antenna Wire	WM195
Tuning and Volume Knob Spring	86/71
Dial Pointer Assy.	A105/640
Dial Cord Tension Spring	73/239-1
Cabinet Back	32/640-1
Screws-Chassis to cabinet 1/4" x 1/8" R.H. Whit.	10/560-4
Washers-on chassis mount screws	249/239-1
Washers-between chassis and cabinet back	70/30C
Felt Washers-on control shafts-brown	66/30C
Felt Washers-on control shafts-white	66/30C-1
Dial Pulley - Wood 5/8" dia.	13/613
Dial Pulley - Wood 3/4" dia.	17/87
Dial Pulley - Brass	23/71

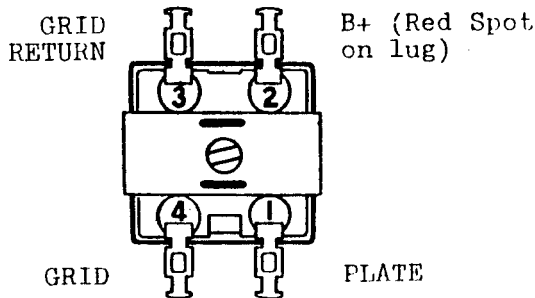
ANTENNA TRANS.



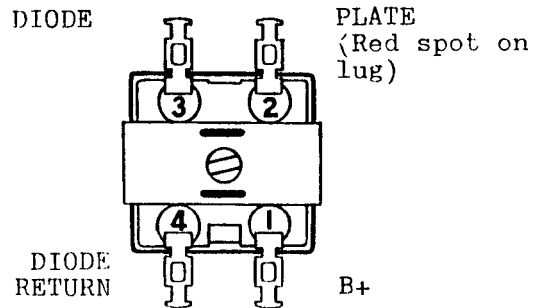
OSCL. COIL



1st IF. TRANS.



2nd IF. TRANS.



CORDING OF DIAL DRIVE

Length of cord required is 4 ft. which includes about 8" to spare for tying to tension spring.

Cord Part No. 34/754.

Tension Spring Part No. 73/239-1.

CONDENSER GANG PLATES
FULLY OUT OF MESH

PB 600

