RADIO CORPORATION PTY. LTD.
DIVISION OF ELECTRONIC INDUSTRIES LTD.
126-130 GRANT STREET, SOUTH MELBOURNE, S.C.4.
TECHNICAL BULLETIN

BULLETIN: QK-1.
FILE: Receivers AC.
DATE: 18/7/51.
PAGE: 1.

MANTEL MODEL "QK"

4 Tube Superheterodyne Broadcast Receiver.

For operation from:-

200-250 Volt 50 Cycle AC. Mains Supply.

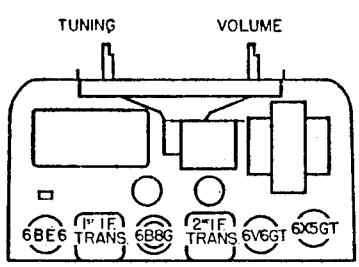
Power Consumption 40 Watts (approx.)

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.



SUBJECT— ALIGNMENT PROCEDURE – MODEL "QK"

Equipment

Signal Generator :
Output Meter :
Mica Capacitor : 0.01MF (for I.F. trans. alignment)
Dummy Antenna : 200MMF. 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.
Intermed. Freq.: 455 Kc/s.
Input Voltage : 230 Volts 50 Cycle AC. input to trans. 230-250 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.

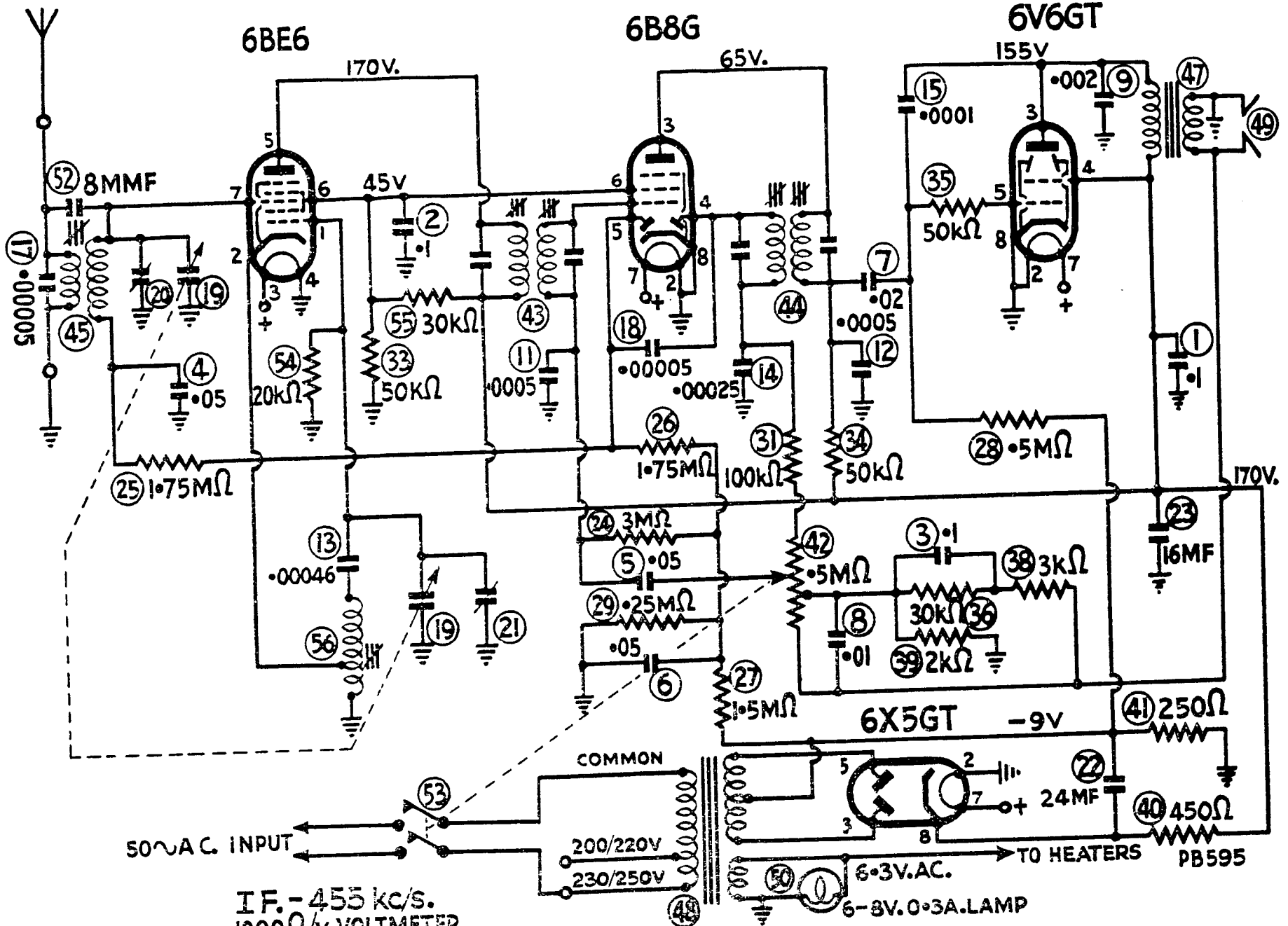
Operation No.	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
1.	To control grid of 6B8G tube	455 Kc/s.	0.01MF. Mica capacitor in series with generator	Remove chassis from cabinet. Leave grid cap on tube. Peak 2nd I.F. trans. pri. and sec. for max. output.
2.	To control grid of 6BE6 tube (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 tube 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 Autenna	Iustructions
6.	To antenna junction lug on chassis	1400Kc/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 reading. 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 as been peaked for max. output.
8.	To antenna junction lug on chassis	1400Kc/s.	200MMF. Mica capacitor in series with generator	Turn cond. gang and dial pointer until centre of dial pointer aligns with centre of 1400 Kc/s. spot on dial reading. 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


6BE6
6B8G
6V6GT
170V.
65V.
155V
45V
8MMF
•0005
•05
20kΩ
30kΩ
50kΩ
•0001
•002
•02
•0005
•00005
•00025
1•75MΩ
100kΩ
•5MΩ
3kΩ
30kΩ
2kΩ
•01
•1
16MF
•00046
3MΩ
•25MΩ
1•5MΩ
6X5GT
-9V
250Ω
450Ω
24MF
PB595
COMMON
50~A.C. INPUT
200/220V
230/250V
TO HEATERS
6•3V.AC.
6-8V. 0•3A. LAMP
IF.-455 kc/s.
1000Ω/v. VOLTMETER

Circuit No.	Description	Tol. ±	Rating	Part No.
1.	.1MF. Paper Condenser	20%	400V. DCW.	PC103
2.	.1MF " "	20%	400V. DCW.	PC103
3.	.1MF " "	20%	200V. DCW.	PC218
4.	.05MF " "	20%	200V. DCW.	PC102
5.	.05MF " "	20%	200V. DCW.	PC102
6.	.05MF " "	20%	200V. DCW.	PC102
7.	.02MF " "	20%	400V. DCW.	PC111
8.	.01MF " "	20%	600V. DCW.	PC140
9.	.002MF " "	20%	600V. DCW.	PC112
10.	" "			
11.	.0005MF Mica "	10%	1000VT.	PC144
12.	.0005MF " "	10%	1000VT.	PC144
13.	.00046MF " "	2½%	1000VT.	PC728
14.	.00025MF " "	10%	1000VT.	PC126
15.	.0001MF " "	10%	1000VT.	PC110
16.	" "			
17.	.00005MF " "	10%	1000VT.	PC141
18.	.00005MF " "	10%	1000VT.	PC141
19.	2 Gang Variable Condsener			PC715
20.	1.5 – 18MMF. Trimmer Condenser			PC250
21.	0 – 30MMF. Trimmer Cond. (wire wound)			PC663
22.	24 MF. Electrolytic Condenser	20%	350VP.	PC276
23.	16 MF. Electrolytic Condenser	20%	350VP.	PC283
24.	3 Megohm Carbon Resistor	10%	½ Watt	PR282
25.	1.75 Megohm Carbon Resistor	10%	½ Watt	PR248
26.	1.75 Megohm " "	10%	½ Watt	PR248
27.	1.5 Megohm " "	10%	½ Watt	PR388
28.	.5 Megohm " "	10%	½ Watt	PR245
29.	.25 Megohm " "	10%	½ Watt	PR249
30.				
31.	100,000 ohm " "	10%	½ Watt	PR103
32.	" "			
33.	50,000 ohm " "	10%	1 Watt	PR115
34.	50,000 ohm " "	5%	1 Watt	PR541
35.	50,000 ohm " "	10%	½ Watt	PR160
36.	30,000 ohm " "	10%	½ Watt	PR151
37.				
38.	3,000 ohm " "	10%	½ Watt	PR185
39.	2,000 ohm " "	10%	½ Watt	PR253
40.	450 ohm Wire Wound Resistor	10%	1 Watt	PR615
41.	250 ohm Wire Wound Resistor	10%	½ Watt	PR259
42.	.5 Megohm Carbon Potentiometer tapped at 40K. ohms and with DP. ST. switch attached	20%		PR662
43.	No. 1 I.F. Transformer			PT869
44.	No. 2 I.F. Transformer			PT869
45.	Antenna Transformer			PT905
46.				
47.	Speaker Input Transformer 5000-3.7 ohms. imped.			PT951
	(Power transformer 200-250 volts 50 cycle)			PT938
48.	(Power transformer 200-260 volts 40 cycle)			PT939
49.	Speaker 5" Permag. – with input trans.			K124
50.	Dial lamp 6-8 Volt 0.25 Amp. Min. Screw base T3¼ Size Bulb			PM678
51.	Tube Shield			PM217
52.	8MMF. Ceramicon condenser (Part of circuit No. 45)			PC830
53.	D.P. S.T. SWITCH (Part of circuit No. 42)			
	Socket, 8 pin			PM532
54.	20,000 ohm Carbon Resistor	10%	½ Watt	PR166
55.	30,000 ohm " "	10%	1 Watt	PR156
56.	Oscillator Coil			PT859

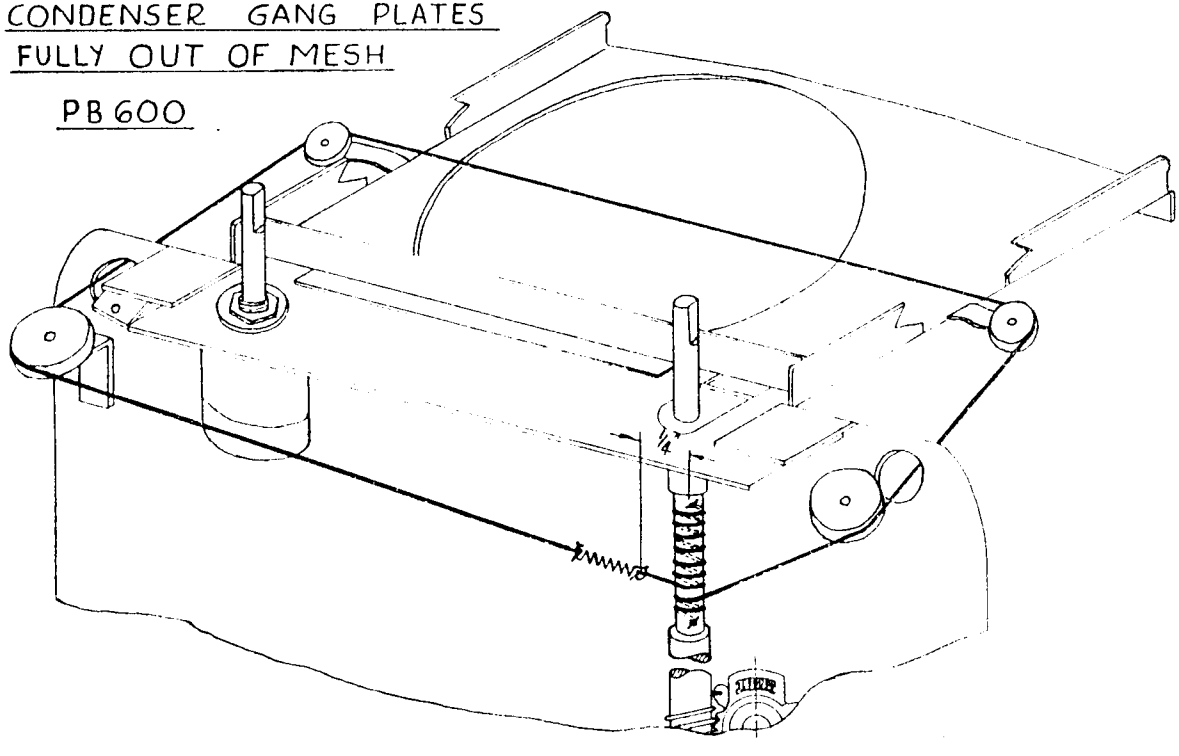
Description	Part No.
Terminal Strip – 3 lug	A103/509
Terminal Strip – 5 lug	A105/E243
Terminal Strip –	A150/30C
Earth Contact for valve shield	22/30C
Rubber Band for valve shield	1/564-8
Rubber Grommet on power cord	40/30C
Clip – IF trans. mount	7/670
Clip – coil mount	6/622
Dial Cord	7/282
Dial Reading	37/640
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 $\frac{1}{4}$" x $\frac{1}{8}$" 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

SUBJECT:— CORDING OF DIAL DRIVE – MODEL "QK"

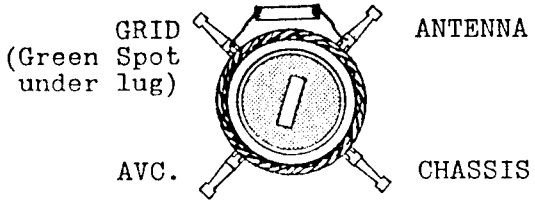
Length of cord required is 4 ft. which includes about 8" to spare for tying to tension spring.

Cord Part No. 7/282.

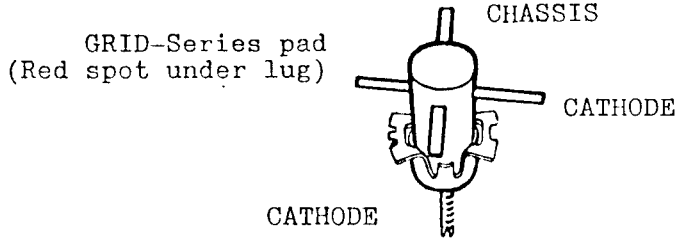
Tension Spring Part No. 73/239-1.



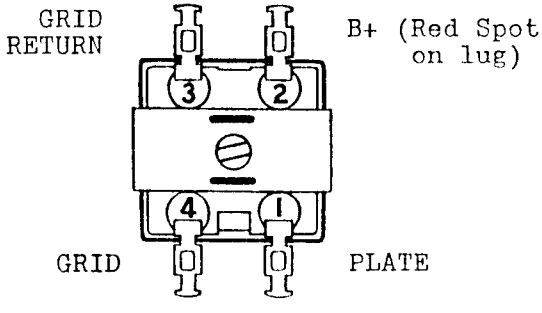
ANTENNA TRANS.



OSCL. COIL



1ST IF. TRANS.



2ND IF. TRANS.