



RADIO CORPORATION PTY. LTD.

DIVISION OF ELECTRONIC INDUSTRIES LTD.

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

TECHNICAL BULLETIN

BULLETIN DKR-1.

File:--Receivers AC.

Date: 14/3/47.

Page 1.

SUBJECT--

Model "DKR"

6 Tube Dual Wave Superheterodyne Receiver

Phone/Radio Combination.

For operation from:--

200-250 Volt 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 IF. Transformer Connections.
8. Summary of Circuit Changes Made During the Production of This Receiver.

This Receiver is NOT in Production

Information is for Service Purposes ONLY

SUBJECT-Technical Specifications-Model "DKR"

Tube Complement:-

6U7G RF. Amplifier.
6J8G Converter.
6U7G IF. Amplifier.
6B6G Diode Detector, AVC. and 1st Audio.
6V6G Beam Power Output Amplifier.
5Y3G Full Wave Rectifier.

Intermediate Frequency:-

455 Kc.

Tuning Range:-

Broadcast: 540-1640 Kc.
555-182.9 M.

Shortwave: 7-22 Mc.
43-13.6 M.

Calibration:-

Straight Line Frequency.

Power Consumption:-

Radio Operation 64 Watts (approx.).
Phono Operation 85 Watts (approx.).

General Description:-

The Model "DKR" is a 6 tube dual wave superheterodyne phono-radio combination receiver employing the same circuit as the Model "DK" receiver except for minor modifications to suit phono-pickup operation.
Phono-Pickup Operation:-

The output voltage from the pickup is applied via the volume control to the grid of the 6B6G tube and then passed to the 6V6G output tube.

The pickup used is a magnetic type and due to the higher output voltage at high frequencies than at low frequencies which is a characteristic of this type of pickup, additional bass boost is provided on pickup operation by switching out of circuit the 5,000 ohm resistor circuit No. 52.



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SUBJECT-Alignment Procedure-Model "DKR"

Equipment:- Signal Generator.
 Output Meter.
 Alignment Tool.

Dummy Antenna: .01MFD. Mica Capacitor.
 200MMFD. Mica Capacitor.

Alignment Conditions:- 400 Ohm Non-Inductive Resistor.

Load Impedance-5,000 Ohms.
 Output Level-50 Milliwatts.
 Volume Control-Maximum Volume (Fully Clockwise).
 Tone Control-1st Position (Fully Anti-clockwise).

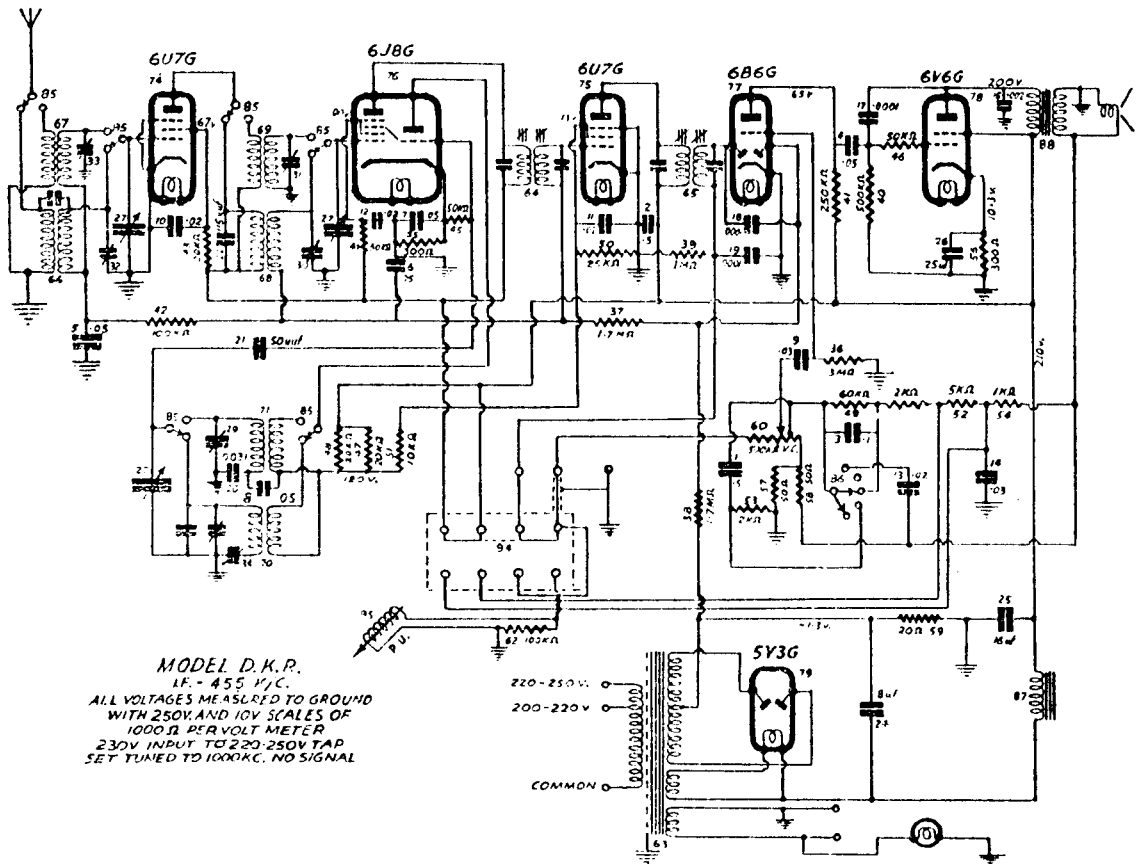
Dial Pointer Setting:-

Fully mesh the gang plates and set the dial pointer on the end of travel mark at the low frequency end of the dial calibration.

Alignment:-

Opera- tion	Generator Connection	Frequency	Dummy Antenna	Instructions
<u>TURN WAVE CHANGE SWITCH TO B/CAST. POSITION</u>				
1.	To control grid of 6U7G IF. tube.	455 Kc.	.01MFD. mica capacitor in series with generator.	Leave grid cap on tube. Gang plates full out. Peak 2nd IF. trans. primary and secondary.
2.	To control grid of 6J8G tube.	455 Kc.	.01MFD. mica capacitor in series with generator.	Leave grid cap on tube. Gang plates full out. Peak 1st IF. trans. primary and secondary.
3.	To antenna terminal.	1400 Kc.	200MMFD. mica capacitor in series with generator.	Turn dial pointer and gang to 1400 Kc. Adjust B/cast. osc. trimmer for logging and peak B/cast. aerial coil and RF. coil trimmers.
4.	To antenna terminal.	600 Kc.	200MMFD. mica capacitor in series with generator.	Turn dial pointer and gang to 600 Kc. Peak B/cast. series padder for maximum output rocking the gang to and fro through the signal while adjusting.
5.				Repeat operations No. 3 and 4.
<u>TURN WAVE CHANGE SWITCH TO SHORTWAVE POSITION</u>				
6.	To antenna terminal.	18 Mc.	400 Ohm non-inductive resistor in series with generator.	Turn dial pointer and gang to 18 Mc. Adjust S/wave. osc. trimmer for logging and peak S/wave. aerial and RF. coil trimmers.
7.	To antenna terminal.	10 Mc.	" " " " "	Turn gang and dial pointer to 10 Mc. and check tracking.

SUBJECT-Schematic Circuit Diagram-Model "DKR"



MODEL D.K.R.
 I.F. = 455 K/C.
 ALL VOLTAGES MEASURED TO GROUND
 WITH 250V AND 10V SCALES OF
 1000Ω PER VOLT METER
 230V INPUT TO 220-250V TAP
 SET TUNED TO 1000KC. NO SIGNAL



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SUBJECT--Voltage Table--Model "DKR"

Equipment:-

DC. Voltmeter: 1,000 ohm per volt meter with 0-10, 0-250 and 0-500 volt scales.

AC. Voltmeter: 0-10, 0-250 and 0-500 volt scales.

Conditions of Test:-

230 volts 50 cycle AC. input to 220-250 volt primary tap. Set tuned to 1,000 Kc., volume control full on, no signal. Filament voltages measured across heaters. All other voltages measured from tube socket contacts to chassis.

	Tube	Fil.	Plate	Cathode	Grid	Osc. Plate
(RF.)	6U7G	6.3V.	210V.	—	-1.3V.	—
	6J8G	6.3V.	210V.	2.4V.	-1.3V.	120V.
(IF.)	6U7G	6.3V.	210V.	—	-1.3V.	—
	6B6G	6.3V.	67V.	—	—	—
	6V6G	6.3V.	200V.	10.3V.	—	—
	5Y3G	5V.	330/330V.	RMS.	The initial surge voltage across the first electrolytic circuit No. 24 is 440V. dropping to normal operating value of 330V.	

DC. voltage drop across field coil is 120V.

SUBJECT-Component Parts List-Model "DKR"

<u>Circuit</u> <u>No.</u>	<u>Part Name</u>	<u>Tol.</u>	<u>Rating</u>	<u>Part No.</u>
1.	.5MFD. Paper Condenser	20%	200V. DCW	PC121
2.	.5MFD. Paper Condenser	20%	400V. DCW	PC115
3.	.1MFD. Paper Condenser	20%	200V. DCW	PC218
4.	.05MFD. Paper Condenser	20%	400V. DCW	PC109
5.	.05MFD. Paper Condenser	20%	200V. DCW	PC102
6.	.05MFD. Paper Condenser	20%	200V. DCW	PC102
7.	.05MFD. Paper Condenser	20%	200V. DCW	PC102
8.	.05MFD. Paper Condenser	20%	200V. DCW	PC102
9.	.03MFD. Paper Condenser	20%	200V. DCW	PC303
10.	.02MFD. Paper Condenser	20%	400V. DCW	PC111
11.	.02MFD. Paper Condenser	20%	400V. DCW	PC111
12.	.02MFD. Paper Condenser	20%	400V. DCW	PC111
13.	.02MFD. Paper Condenser	20%	400V. DCW	PC111
14.	.03MFD. Paper Condenser	20%	200V. DCW	PC303
15.	.002MFD. Paper Condenser	20%	600V. DCW	PC112
16.				
17.	.0001MFD. Mica Condenser	10%	1000VT.	PC110
18.	.0001MFD. Mica Condenser	10%	1000VT.	PC110
19.	.0001MFD. Mica Condenser	10%	1000VT.	PC110
20.	.0031MFD. Mica Condenser	5%	1000VT.	PC278
21.	.00005MFD. Mica Condenser	10%	1000VT.	PC141
22.	115MMFD. Silvered Mica Condenser	2½%	1000VT.	PC357
23.	20MMFD. Wire Wound Condenser	+0-2%	1000VT.	PC166
24.	8MFD. Electrolytic Condenser	20%	525PV.	PC262
25.	16MFD. Electrolytic Condenser	20%	525PV.	PC300
26.	25MFD. Electrolytic Condenser	20%	40PV.	PC269 changed to PC318
27.	3 Gang Varb. Condenser			PC302
28.	Osc. Trimmer B/cast. (Wire Wound)			PC356
29.	Osc. Trimmer S/wave. (Wire Wound)			PC356
30.	RF. Trimmer B/cast. 1.5-18MMFD.			PC250
31.	RF. Trimmer S/wave. 1.5-18MMFD.			PC250
32.	Antenna Trimmer B/cast. 1.5-18MMFD.			PC250
33.	Antenna Trimmer S/wave. 3-55MMFD.			PC224
34.	Series Padder B/cast. 150-500MMFD.			PC164
35.				
36.	3 Megohm Carbon Resistor	10%	½ Watt	PR282
37.	1.75 Megohm Carbon Resistor	10%	½ Watt	PR248
38.	1.75 Megohm Carbon Resistor	10%	½ Watt	PR248
39.	1 Megohm Carbon Resistor	10%	½ Watt	PR246
40.	.5 Megohm Carbon Resistor	10%	½ Watt	PR245
41.	.25 Megohm Carbon Resistor	10%	½ Watt	PR249 changed to 1 watt PR496
42.	100,000 Ohm Carbon Resistor	10%	½ Watt	PR103



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SUBJECT-Component Parts List-Model "DKR"

<u>Circuit No.</u>	<u>Part Name</u>	<u>Tol.±</u>	<u>Rating</u>	<u>Part No.</u>
43.	100,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR103
44.	60,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR125
45.	50,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR160
46.	50,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR160
47.	20,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR171
48.	20,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR171
49.	60,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR125
50.	25,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR155
51.	10,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR164
52.	5,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR250
53.	2,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR253
54.	1,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR252
55.	300 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR258
56.	300 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR122
57.	50 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR280
58.	50 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR280
59.	20 Ohm Wire Wound Resistor	10%	$\frac{1}{2}$ Watt	PR231
60.	500,000 Ohm Carbon Pot. Tapped at 40K. ohms.	20%		{ PR356 changed to PR377
61.	2,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR253
62.	100,000 Ohm Carbon Resistor	10%	$\frac{1}{2}$ Watt	PR103
63.	Transformer-Power			PT177
64.	Transformer-1st IF.			PT386
65.	Transformer-2nd IF.			PT387
66.	Transformer-Antenna B/cast.			PT381
67.	Transformer-Antenna S/wave.			PT384
68.	Transformer-RF. B/cast.			PT382
69.	Transformer-RF. S/wave.			PT271
70.	Oscillator Coil B/cast.			PT383
71.	Oscillator Coil S/wave.			PT246
72.				
73.				
74.	6U7-G tube			
75.	6U7-G tube			
76.	6J8-G tube			
77.	6B6-G tube			
78.	6V6-G tube			
79.	5Y3-G tube			
80.				
81.	Valve Shield			PM217
82.	Terminal			PM306

SUBJECT-Component Parts List-Model "DKR"

<u>Circuit</u> <u>No.</u>	<u>Part Name</u>	<u>Rating</u>	<u>Part No.</u>
83.	Socket-8 pin		PM532
84.	Socket-6 pin		PM145
85.	Switch-wave change		PM442
86.	Switch-tone control		PM580
87.	1,500 Ohm Field Coil		Part of 90
88.	5,000 Ohm Input		Part of 90
89.			
90.	12" Dynamic Speaker		PM447
91.	Dial Lamps	6-8V. 3CP	(DK) PM450
92.			
93.			
94.	Phono/radio Switch		PM546
95.	Pick-up Motor Unit. "Collaro" AC37 Motor 200-250V. 50-60 cycle. Magnetic Pick-up		{ 57/244 changed to M124
96.			
97.	1st IF. Pri. Adj. Screw		
98.	1st IF. Sec. Adj. Screw		
99.	2nd IF. Pri. Adj. Screw		
100.	2nd IF. Sec. Adj. Screw		
101.	Pick-up Shorting Bar		A101/513
102.	Metal Chassis		
103.	Dial Drum		A106/87
104.	Mains Tap. Board		A101/30A
105.	Mains Tap. Board Cover		39/244
106.	Dial Drive Ass'y.		{ A9/91-2 changed to 32/244



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SUBJECT: Component Parts List-Model "DKR"

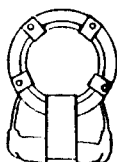
<u>Part Name</u>	<u>Part No.</u>
Dial Frame Ass'y.	A105/281
Dial Reading	27/280
Dial Light Diffuser	37/280
Pilot Light Brkt. Assembly (2)	A105/280
Chassis Mount Foot Ass'y. Left	A103/215-1
Chassis Mount Foot Ass'y. Right	A103/215-2
Feet Mount Grommet (8)	64/30A
Washer, Grommet Clamp (4)	45/60-2
Spacer Foot Mounting (4)	14/218A-3
Terminal Strip Assembly	A110/205
Control Knob Adapters (3)	6/281
Dial Pointer Assembly	A116/280
Combination Cabinet	A.A.C. 41
Needle Cups (3)	42/245
Astor Badge	314/30C
Valve Heat Shield	67/244
Valve Heat Shield Asbestos	68/244
Wave Change Extension Shaft	62/244
Shaft Coupling, wave change	11/244
Shaft Extension Plates	16/244
Control Knob (3)	53/81
Control Knob Spring (3)	17/81
Felt Washers (6)	66/30C

CABINET LID LIFT PARTS

Anchor Plate Ass'y.-Right	A102/277
Anchor Plate Ass'y.-Left	A103/277
Arm Lift Assembly (2)	A101/277
Tension Spring (2)	14/277
Adjusting Stud (2)	5/277
Pad Stop	10/277
Stop Assembly	A104/277
Escutcheon (2)	16/277
Ext. Shaft	45/280

SUBJECT-Coil and IF. Transformer Connections-Model "DKR"

AVC.



EARTH

(Outside secondary) GRID

ANTENNA (Inside primary)

ANT. TRANS. B/CAST.

B+

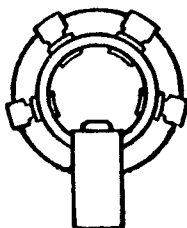


PLATE (Inside primary)

(Outside secondary) GRID

AVC.

RF. TRANS. B/CAST.

(Junction of circuit Nos.
 47, 48 and 51) RED



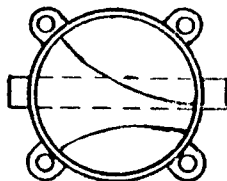
BLACK (Series pad)

(6J8G Osci. Plate) BLUE

GREEN (Osci. gang)

OSCL. COIL B/CAST.

GRID



ANTENNA

AVC.

EARTH

ANT. TRANS. S/WAVE.



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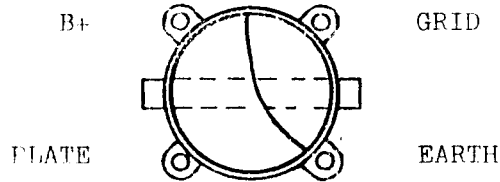
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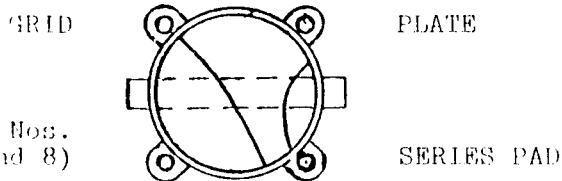
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RF. TRANS. S/WAVE.

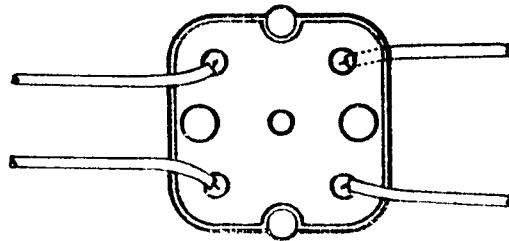
(Junction of circuit Nos.
47, 48, 51 and 8)



OSCL. COIL S/WAVE.

(AVC.) BLACK

GREEN (Grid)



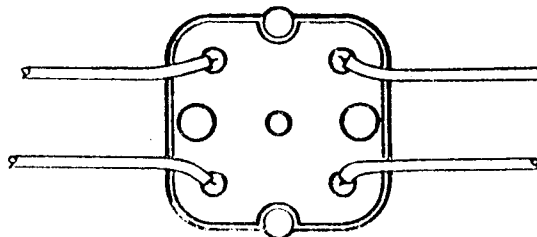
(Plate) BLUE

RED (B+)

1ST. LF. TRANS.

(Diode Return) BLACK

GREEN (Diode)



(Plate) BLUE

RED (B+)

2ND. LF. TRANS.

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SUBJECT-Summary of Changes Made During the Production
of This Receiver.

1. Circuit Nos. 28 and 29: Wire wound trimmer PC663 is to be used as a replacement for PC356 or PC367.
2. Circuit Nos. 37 and 38: 1.5 megohm resistors were used in place of 1.75 megohm when 1.75 were not obtainable.
3. Circuit No. 63: Power transformer (part No. PT770) 200-250V. primary 50 cycle
or
power transformer (part No. PT771) 200-260V. primary 40 cycle (Western Aust. Sets) are to be used for replacing power transformer PT177.