

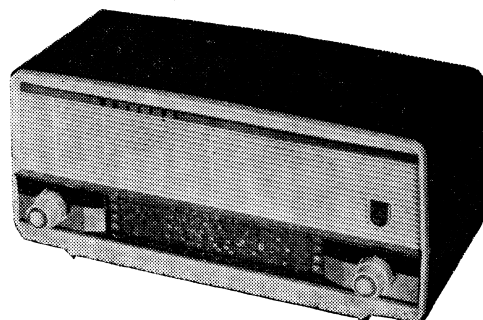
PHILIPS RADIOPLAYER

MODEL 224

SPECIFICATIONS

(Subject to alteration without notice)

Power Supply	.....	.....	200-250, 40-50 c/s
Tuning Range	.....	.....	530-1620 Kc/s
Intermediate Frequency	.....	.....	455 Kc/s
Cabinet	.....	.....	Plastic mantel
Power Consumption	.....	.....	30W (approx.)



VALVE EQUIPMENT AND VOLTAGE ANALYSIS

Valve Function	Valve No.	Valve Type	Plate Volts	Screen Volts	Osc. Plate Volts	Cath. Volts
Frequency Converter	V1	6AN7	227	46	90	—
I.F. Amplifier	V2	6BH5	227	46	—	—
Audio Amplifier, A.V.C. and Demodulator	V3	6BD7	80	—	—	—
Power Amplifier	V4	6M5	223	227	—	6.5
Rectifier	V5	6V4	229/229	—	—	—
Dial Lamp	V11, V12	8008D	6.3V 0.15A tubular screw			
Unfiltered B+ 245V		Across R14-2V.				
Filtered B+ 227V		Filaments 6.4V				

NOTE: These voltages are measured with a "20,000 ohms per volt" meter and may vary $\pm 10\%$ from the figures quoted. They are measured from the socket points indicated to chassis, or across the resistor listed. The receiver should be in a "no signal" condition.

TO REMOVE CHASSIS FROM CABINET.

Remove two screws from rear of cabinet and a further four screws from the base. Withdraw the chassis complete with grille and knobs from the cabinet body.

When replacing chassis in cabinet secure the two rear mounting screws first.

TO REMOVE GRILLE.

Remove control knobs (push fitted). Unsolder speaker leads from lug strip. Detach cursor from dial cord. Unscrew four screws securing speaker plate to chassis and remove plate complete with grille assembly. Remove four spring loaded screws and separate plate from grille.

NOTE: Removal of speaker plate from chassis simplifies re-assembly of plate to grille.

Some chassis have speaker leads sufficiently long enough to enable removal of speaker plate without the necessity to unsolder leads.

TO REMOVE DIAL SCALE.

Remove chassis from cabinet, see "To Remove Chassis from Cabinet".

Remove grille from chassis, see "To Remove Grille".

Unscrew four screws securing dial scale to escutcheon.

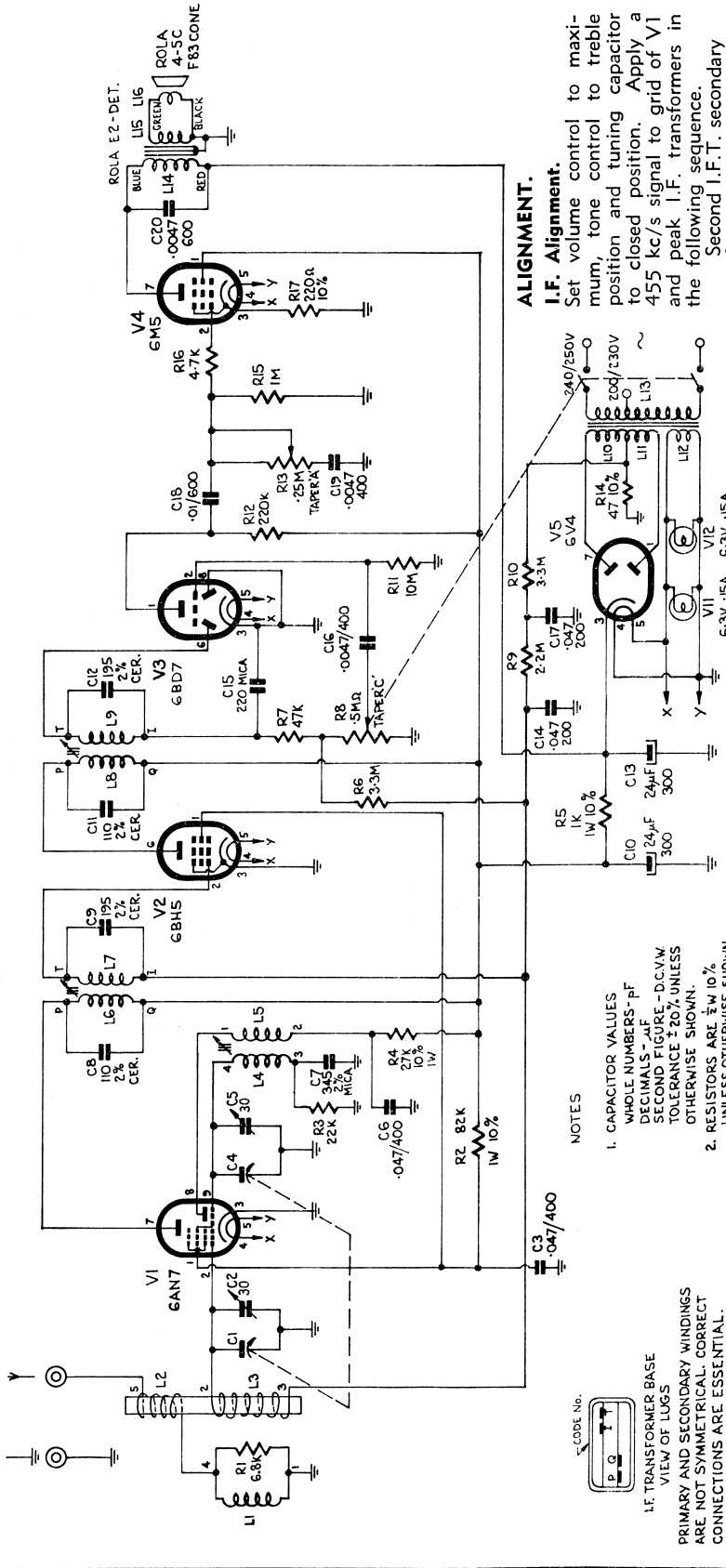
MAINS VOLTAGE ADJUSTMENT.

The power transformer is provided with two primary winding tappings — 200/230 volts and 240/250 volts — for adjustment of the receiver to the supply voltage at the point of installation. The receiver is adjusted at the factory to the 240/250 volts tapping.

DIAL CALIBRATION ADJUSTMENT.

If dial calibrations are incorrect over the dial scale by an equal amount, the error can be corrected by moving the cursor on the dial cord.

L	1	2.3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	L	
C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	C
R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R
V	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	V



ALIGNMENT.

I.F. Alignment.
Set volume control to maximum, tone control to treble position and tuning capacitor to closed position. Apply a 455 kc/s signal to grid of V1 and peak I.F. transformers in the following sequence.
Second I.F.T. secondary
First I.F.T. primary
First I.F.T. secondary
First I.F.T. primary

R.F. Alignment.

With gang in closed position, set the cursor to the stop mark situated on the bottom line of the dial scale (530 Kc/s). Connect a shunt consisting of a 25,000Ω 10% 1W carbon resistor in series, across secondary of 1st I.F. transformer. Connect generator through standard dummy to aerial and earth leads.
Alignment frequencies are:
1500 Kc/s (3AK) Oscillator and Aerial trimmer
600 Kc/s (7ZL) Oscillator slug.

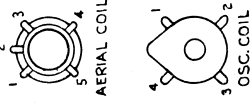
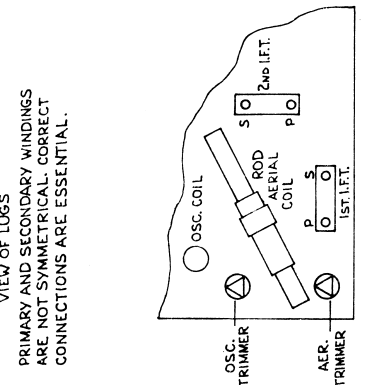
VOLTAGE ANALYSIS

VALVE PLATE	SCREEN	OSC. PL.	CATH.	UNFIL.	B+
V1	227	46	90		245V
V2	227	46			227V
V3	80				227V
V4	223	227			227V
V5	229Mc				229Mc

NOTES

- CAPACITOR VALUES
WHOLE NUMBERS - PF
DECIMALS - μF
SECOND FIGURE - D.C.V/W
TOLERANCE ± 20% UNLESS
OTHERWISE SHOWN.
- RESISTORS ARE $\frac{1}{2}$ W 10%
UNLESS OTHERWISE SHOWN.

TRIMMER LAYOUT



PARTS LIST

CAPACITORS

No.	Description	Type or Code No.
C1, 4	Tuning Capacitor	CZ.107.771
C2, 5	30pF air trimmer	CZ.113.700
C3, 6	0.047 μ F 400V paper	Hi-Seal '85'
C7	345pF \pm 2 $\frac{1}{2}$ % mica	Type SS
C8, 9, 11, 12	Part of I.F. transformer	
C10, 13	24 μ F 300V electrolytic	Ducon type EE5C
C14, 17	0.047 μ F 200V paper	Hi-Seal '85'
C15	220pF mica	Type MS
C16, 19	0.0047 μ F 400V paper	Hi-Seal '85'
C18	0.01 μ F 600V paper	Hi-Seal '85'
C20	0.0047 μ F 600V paper	Hi-Seal '85'

All tolerances are \pm 20% unless otherwise specified.

RESISTORS

No.	Description	Type or Code No.
R1	6.8k Ω $\frac{1}{2}$ W carbon	
R2	82k Ω \pm 10% 1W carbon	
R3	22k Ω $\frac{1}{2}$ W carbon	
R4	27k Ω \pm 10% 1W carbon	
R5	1k Ω \pm 10% 1W carbon	
R6, 10	3.3M Ω $\frac{1}{2}$ W carbon	
R7	47k Ω $\frac{1}{2}$ W carbon	
R8	0.5M Ω taper "C" volume	}
R13	0.25M Ω taper "A" tone	
	Dual potentiometer with D.P.S.T. switch	CZ.032.604
R9	2.2M Ω $\frac{1}{2}$ W carbon	
R11	10M Ω $\frac{1}{2}$ W carbon	
R12	220k Ω $\frac{1}{2}$ W carbon	
R14	47 Ω \pm 10% $\frac{1}{2}$ W W/W	
R15	1M Ω $\frac{1}{2}$ W carbon	
R16	4.7k Ω $\frac{1}{2}$ W carbon	
R17	220 Ω \pm 10% $\frac{1}{2}$ W carbon	

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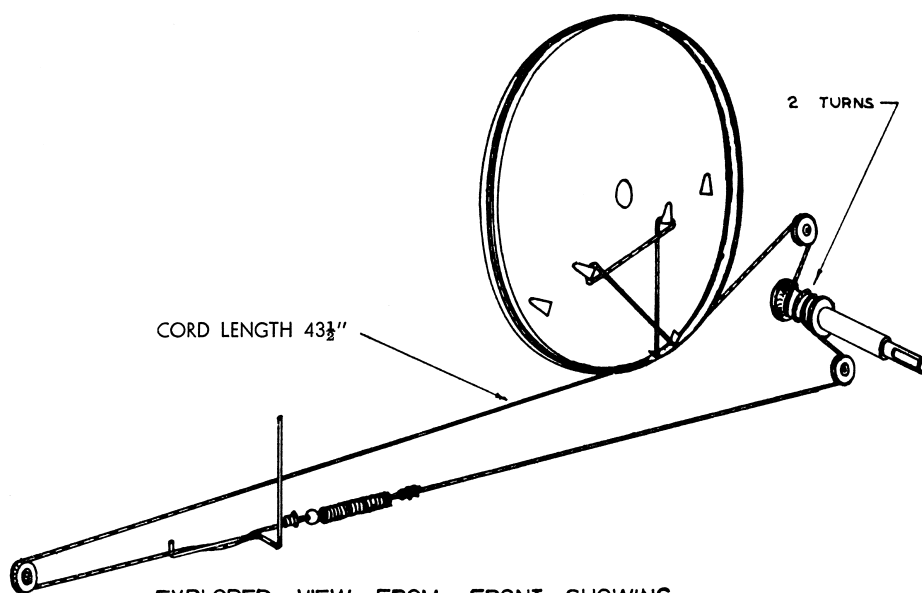
COILS

No.	D.C. Resistance (ohms)	Description	Type or Code No.
L1	18-20	Loading Coil	CZ.321.292
L2	1.0	} Rod Aerial Assembly	CZ.323.047
L3	<0.5		
L4	2.5	} Oscillator Coil	CZ.330.628
L5	<0.5		
L6	8.0-9.0	} 1st I.F. transformer	A3.126.84
L7	4.7-5.2		
L8	8.0-9.0	} 2nd I.F. transformer	A3.126.84
L9	4.7-5.2		
L10	650-800	} Power transformer	CZ.344.133
L11	<0.5		
L12	59-72		
L13			
L14		} Output Transformer Rola type E2-Det	CZ.345.035
L15			
L16		Loudspeaker Rola 4-5C F83 cone	

IMPORTANT! When ordering spare parts, quote **CODE NUMBER** of part and **MODEL NUMBER** of Receiver. In claiming free replacement under **GUARANTEE**, return defective part **PROMPTLY** and quote **MODEL** and **SERIAL NUMBER** of Receiver and **DATE OF PURCHASE**.

MISCELLANEOUS COMPONENTS

Description	Type or Code No.	Description	Type or Code No.
Cabinet, body (consisting of cabinet body packed in carton)—		Grille assy. (less escutcheon and decorative strip)	CR.520.857
Ember Red	CR.570.697	Knob, tone (rear)	CR.523.784
Flamingo	CR.570.698	Knob, volume (front)	CR.523.785
Charcoal	CR.570.699	Knob, tuning	CR.523.786
Turquoise	CR.570.700	Lampholder x2	CZ.367.920
Grey	CR.570.701	Nut, speed fix x4 (chassis mtg. to cab.)	SNU/0522/17
Primrose	CR.570.702		CH.629.059
Clip, speed fix x2 (escutcheon to grille)		Scale, dial	CS.412.444
	Spire Type SFR1041	Screw, special x4 (front plate to grille)	CS.258.869
	CH.629.213	Spindle, tuning	CR.371.339
Cord, dial (43½" required)	Bulk 06.606.28	Spring, x4 (special screw to front plate)	CS.200.000
Cursor	CR.480.677	Spring, I.F.T. mtg. x2	A3.652.58
Drum, dial	CS.360.802	Strip, decorative (attach to grille)	CS.430.703
Escutcheon, front	CS.430.085		



EXPLODED VIEW FROM FRONT SHOWING
GANG CONDENSER IN OPEN POSITION



Published by

Philips Electrical Industries Pty. Limited

Sydney — Newcastle — Melbourne — Brisbane — Adelaide — Perth — Hobart