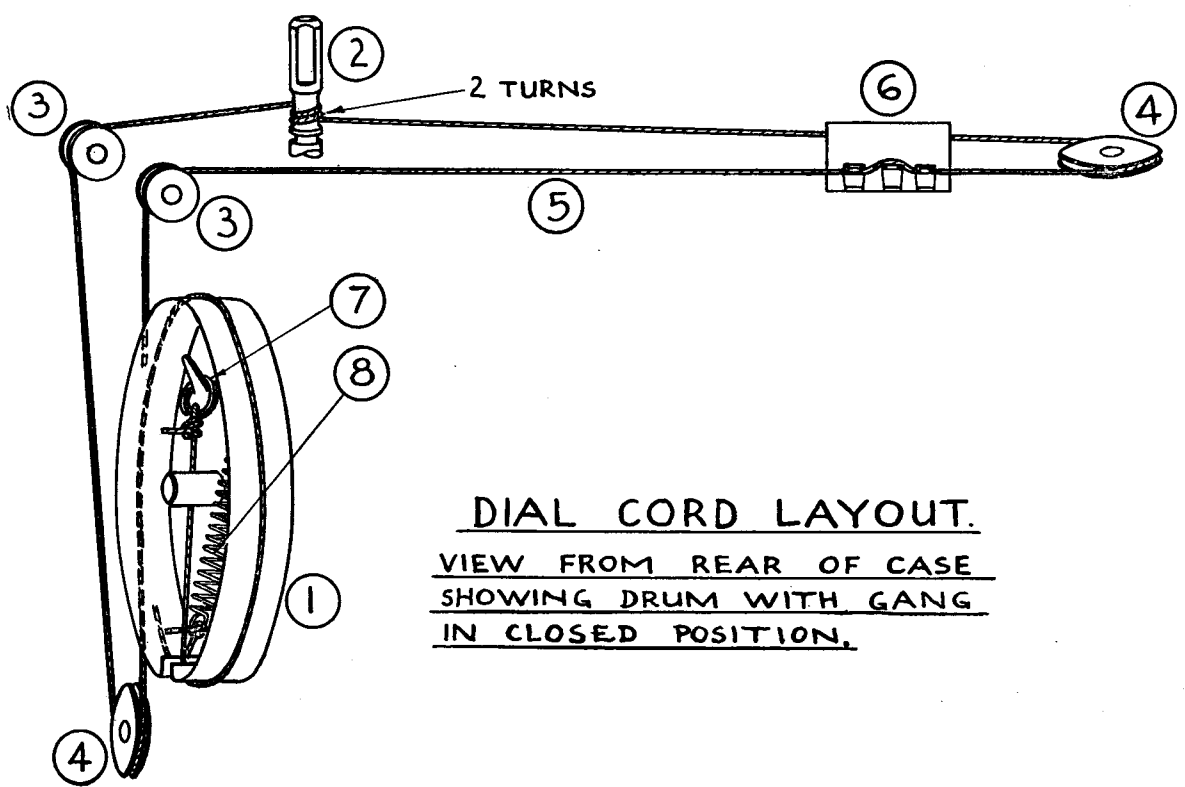


MISCELLANEOUS COMPONENTS

No. on Dial Cord Layout Drawing	Description	Code No.	No. on Dial Cord Layout Drawing	Description	Code No.
—	Assembly, carrying handle (Ivory)	CR.523.406	6	Assembly cursor	CR.480.656
—	Assembly case (front and back)—		—	Assembly, power plug (Ivory)	CZ.365.114
	Dark Blue	CR.570.615	—	Badge, Philips	CS.436.419
	Light Blue	CR.570.614	—	Bank, A.C /Batt. switch	CZ.200.056
	Burgundy	CR.570.611	—	Clip, Spring (I.F.T. mtg.), 2x	A3.652.58
	Green	CR.570.612	5	Cord, dial drive	CS.361.840
	Grey	CR.570.613	1	Drum, dial drive	CS.359.806
	Ivory	CR.570.610	—	Knob, control, 2x	CR.523.711
	Red	CR.570.616	3	Pulley, brass, 2x	CS.360.205
	Yellow	CR.570.617	4	Pulley, plastic, 2x	CS.359.602
—	Assembly case (front only)—		—	Rectifier, selenium	CZ.038.305
	Dark Blue	CR.570.623	7	Ring, dial cord	CS.281.807
	Light Blue	CR.570.622	—	Scale, dial	CS.412.374
	Burgundy	CR.570.619	—	Screw, case fastening	CS.258.850
	Green	CR.570.620	—	Screw, dial window mounting, 2x	CS.258.610
	Grey	CR.570.621	—	Shutter, dial	CS.460.805
	Ivory	CR.570.618	2	Spindle, tuning	CS.351.241
	Red	CR.570.624	—	Spring, case fastening	CS.211.836
	Yellow	CR.570.625	8	Spring, dial cord	CS.210.029
—	Assembly case (back only)—		—	Spring, dial shutter	CS.211.024
	Dark Blue	CR.570.631	—	Spring, knob, 2x	CS.281.832
	Light Blue	CR.570.630	—	Spring, mains plug shutter	CS.212.202
	Burgundy	CR.570.627	—	Switch, A.C.	CZ.210.108
	Green	CR.570.628	—	Switch, battery	CZ.210.107
	Grey	CR.570.629	—	Window, dial	CS.030.011
	Ivory	CR.570.626			
	Red	CR.570.608			
	Yellow	CR.570.609			



DIAL CORD LAYOUT.
VIEW FROM REAR OF CASE
SHOWING DRUM WITH GANG
IN CLOSED POSITION.

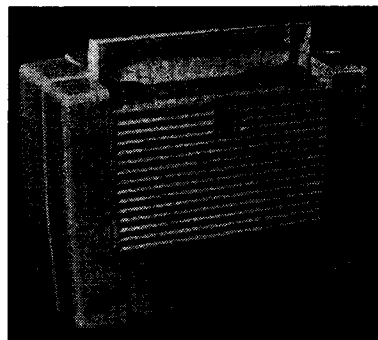
PHILIPS RADIOPLAYER

MODEL 144

SPECIFICATIONS

(Subject to alteration without notice)

Tuning Range	.....	.....	.....	530—1620 kc/s
Intermediate Frequency	.....	.....	.....	455 kc/s
Power Supply—				
Batteries	.....	.....	.....	One type 719, 3719, or 5719 or one type 753, 3753 or 7½V and one type 490-P, 3490-P or 5490-P, 90V.
Mains	.....	.....	.....	200—250V, 40—60 c/s.
Battery Consumption	.....	.....	.....	"A"—53 mA "B"—13.5 mA



VALVE EQUIPMENT AND VOLTAGE ANALYSIS.

Valve Function	Valve No.	Valve Type	Plate Volts		Screen Volts	
			Batt.	Mains	Batt.	Mains
Frequency Converter	V1	1R5	90	89	60	60
I.F. Amplifier	V2	1T4	90	89	30	31
Demodulator, A.V.C. and 1st Audio	V3	1S5	36*	36*	26*	27*
Power Amplifier	V4	3V4	87	123	90	127
Unfiltered H.T., 140V.						
Voltage across C25 to be within 10.0-10.8 volts — adjustable by selecting R19 from 22,000, 10,000 or 5,600 ohms, one watt, or deleting it altogether.						

NOTE: These voltages are measured with an 1,000 ohms per volt meter, except those marked with an asterisk, which are measured with a V.T.V.M. They may vary $\pm 10\%$ from the figures quoted, except filament volts, which has its own tolerance. Measurements are made between the socket points indicated and chassis. The receiver should be in a "no signal" condition, and when making measurements on mains operation, the batteries should be connected.

MAINS VOLTAGE ADJUSTMENT.

The power transformer is provided with three primary winding tappings—200/210, 230/240 and 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 230/240 volts tapping.

REMOVAL OF CHASSIS FROM CASE.

Remove plug from power outlet socket and plug from receiver if connected for mains operation. Unscrew back fastening screw, open back of case, unplug aerial loop leads, unhinge case back and unplug and remove batteries.

Unsolder speaker voice coil leads from lug strip.

The chassis is held to the case by six screws—two under the handle pivots, two at the bottom of the chassis, one under the mains plug contact pin assembly, and one alongside the dial shutter operated switches. Remove these screws, but before lifting the chassis from the case, open the shutter.

Refitting of the chassis is a reversal of the above procedure, but points to watch are: the right-hand mounting bracket from the case front passes between the dial cord and chassis; do not tighten up the mounting screws immediately but make sure that the dial scale and mains plug shutter are correctly lined up in the case first.

REMOVAL OF SHUTTER.

Remove the chassis from the case (see Removal of Chassis from Case). From the left-hand pivot of the shutter remove the speed clip and switch actuating arm. Removal of the left-hand bearing will allow the shutter to be lifted out.

ALIGNMENT.

Alignment should be carried out on battery operation, not on mains operation. All operations may be done with the chassis in position in the case.

Before commencing alignment remove the case back with the loop (hinges at the bottom lift apart and the loop connecting wires plug in). Connect a 50,000 ohms carbon resistor in place of the loop. Close the tuning gang and set the dial cursor to the stop mark at the left-hand end of the dial scale. For I.F. and oscillator adjustments, use the normal I.F. dummy and inject between the loop trimmer and chassis. For loop adjustment, use a 500 ohms carbon resistor in series with the I.F. dummy and inject between the external aerial and earth wires brought out the top of the case.

Trimmer location drawing is given as an inset to the circuit diagram drawing.

I.F. transformer adjustments are:

2nd I.F.T.—		
Secondary	.....	nearer V3
Primary	.....	nearer V2
1st I.F.T.—		
Secondary	.....	nearer V2
Primary	.....	nearer V1

Because of variation in loop inductance between case open and closed conditions, it is not possible to rock the tuning gang while making the low frequency oscillator adjustment. This adjustment on the oscillator coil core should be done at 600 kc/s (7ZL) before the high frequency adjustment on the capacitive trimmer at 1,420 kc/s. (3XY).

Loop adjustment is made at 1,420 kc/s. (2WL) with the case closed. Access to the loop trimmer (C5) is obtained through the top grille.

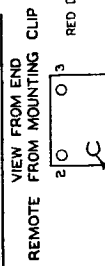
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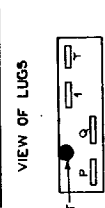
Sydney - Melbourne - Brisbane - Adelaide - Perth

L	1, 2	3	4	5	6	7	8	9	10	11
C	12, 13	14, 15	16	17, 18, 19	20, 21, 22	23, 24, 25	26, 27, 28	29, 30	31, 32	
R	1	2, 3, 4, 5	6, 7, 8, 9	10, 11, 12, 13	14, 15, 16, 17, 18, 19	20, 21, 22, 23, 24, 25	26, 27, 28, 29, 30	31, 32		
V	1	2, 3, 4, 5	6, 7, 8, 9	10, 11, 12, 13	14, 15, 16, 17, 18, 19	20, 21, 22, 23, 24, 25	26, 27, 28, 29, 30	31, 32		

OSCILLATOR COIL LUG PANEL

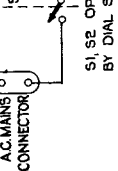
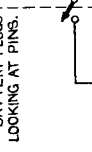
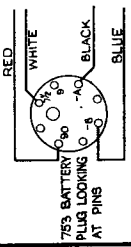
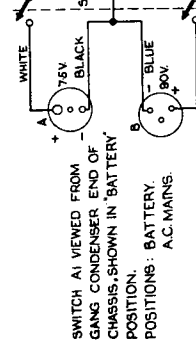
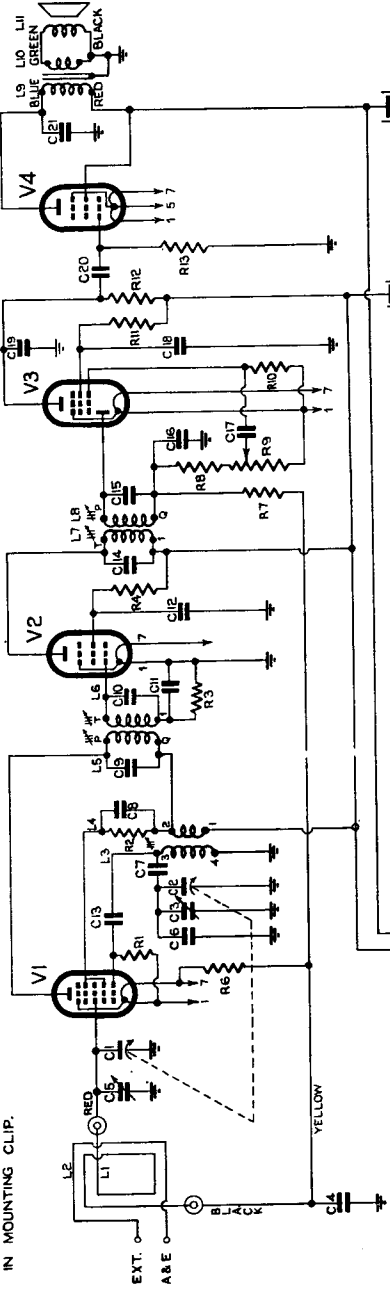
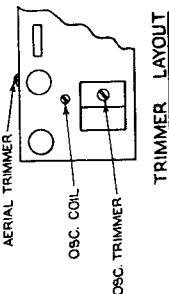


I.F. TRANSFORMER BASE



NOTE: CAPACITIVE SHUNTS SHOWN ACROSS I.F. WINDINGS ARE CONTAINED WITHIN THE CAN.

POSITION OF LOCATING LUG IN MOUNTING CLIP.



NOTE: RB 15 INCLUDED IN POTENTIOMETER R9. SHUNT RESISTOR R19 IS SELECTED TO GIVE CORRECT FILAMENT VOLTS. IN SOME RECEIVERS IT MAY NOT BE REQUIRED.

S1, S2 OPERATED BY DIAL SHUTTER

PARTS LISTS

CAPACITORS

No.	Description	Code No.
C1, 2, 3	2 gang tuning with trimmer	CZ.107.753
C4, 27	0.1 mF 200V paper	
C5	5-50 pF compression trimmer	CZ.114.200
C6	25 pF mica ±10%	
C7	480 pF mica 2%	CZ.066.131
C8	0.001 mF 600V paper	
C9, 10, 14, 15	Part of I.F. transformers	
C11, 17, 21	0.005 mF 600V paper	
C12, 18, 20	0.01 mF 600V paper	
C13, 16, 19	100 pF mica	
C22	30 mF 200V electrolytic	
C23	8 mF 150V electrolytic	
C24	50 mF 200V electrolytic	
C25, 26	100 mF 12V electrolytic	

All tolerances are 20% except where otherwise stated.

Continued from Page One

REMOVAL OF DIAL SCALE AND WINDOW.

Remove the chassis from the case and the shutter from the chassis (see Removal of Chassis from Case and Removal of Shutter). Remove the control knobs—firm pull is all that is necessary. Remove the window mounting screws; in order to prevent damage to the dial window the screws should be removed with a 9/32" spintite blinDED off so that its face does not touch the scale. The dial scale is fixed with two screws, removal of which allows the scale to be lifted clear.

RESISTORS

No.	Description	Code No.
R1, 4	100,000 ohms ½W carbon	
R2	12,000 ohms ½W carbon 10%	
R3	2.2 megohms ½W carbon	
R6, 7	3.3 megohms ½W carbon 10%	
R8, 9	1 megohm carbon potentiometer with stop at 100,000 ohms	CZ.029.309
R10	10 megohms ½W carbon	
R11	3.3 megohms ½W carbon	
R12	470,000 ohms ½W carbon	
R13	1 megohm ½W carbon	
R14	1,000 ohms ½W carbon 10%	
R15	6,800 ohms ½W carbon 10%	
R16	15,000 ohms 1W carbon 10%	
R17, 18	Refer text "Power Transformer"	
R19	Refer Voltage Analysis table	
R20	270 ohms ½W carbon 10%	
R21	820 ohms ½W carbon 10%	
R22	82 ohms ½W W/W carbon 5%	
R23, 24	1,500 ohms ½W carbon	

All tolerances are 20% except where otherwise stated.

USE OF BATTERY PACK.

It is possible to operate the receiver from battery pack types 753, 3753 or 5753. A drawing giving connections to the plug for these packs is shown as an inset to the circuit diagram drawing.

DIAL CALIBRATION ADJUSTMENT.

If dial calibrations are incorrect by an equal amount of error over the band, the condition may be corrected by moving the cursor on the dial driving cord. Access to the dial cursor can be gained by opening the back of the case.

COILS

No.	Ohms	Description	Code No.
L1	<1.0	Aerial loop	CZ.333.009
L2	<1.0		
L3	2.7-3.3	Oscillator coil	CZ.330.609
L4	<1.0		
L5	11.5-15.5	1st I.F. transformer (step-up)	CZ.320.433
L6	12.5-16.5		
L7	12.5-16.5	2nd I.F. transformer (step-down)	CZ.320.433
L8	11.5-15.5		
L9	410-550	Output Transformer	CZ.345.024
L10	<0.5		
L11	3.1-4.1	Speaker (9742Z)	49.240.55
L12	88-108	Power Transformer "Power Transformer"	refer text
L13	60-82		

POWER TRANSFORMER.

Both CZ.344.081 and CZ.344.082 have been used. Resistors R17 and R18 are related to the power transformer. With CZ.344.081 having suffixes up to "point 3", use R17-18 1,450 ohms 5W carbon 5% CZ.011.324; with CZ.344.081 having suffixes "point 4" and over and CZ.344.082, use R17-18 1,600 ohms 5W carbon 5% CZ.011.325.

RETREADING OF DIAL CORD.

This operation is made easier if the dial scale is removed (see Removal of Dial Scale and Window). The dial cord layout drawing is published on the back page.