

# PHILIPS RADIOPLAYER MODEL 1754

VIBRATOR OR BATTERY OPERATED.

## SPECIFICATIONS

(Subject to Alteration Without Notice.)

Tuning Range 7-22 Megacycles.  
540-1520 Kilocycles.  
Intermediate Frequency 472.5 Kilocycles.

### BATTERY EQUIPMENT

For Battery Operation—

1-2 volt accumulator (100 amp. hours capacity).  
3-45 volt Triple capacity "B" Batteries.

For Vibrator Operation—

1-6 volt accumulator 100 amp. hours capacity.

### BATTERY CONSUMPTION

"B" Battery Operation—

"A" Battery: .49 amp. approx.

"B" Battery: 14 milliamp. approx.

Vibrator Operation—1.2 amps. at 6 volts.

### VALVE EQUIPMENT

Radio Frequency Amplifier	Type	KF3	R.F. Penthode
Frequency Converter	"	KK2	Octode
I.F. Amplifier	"	KF3	R.F. Penthode
Demodulator and 1st Audio	"	1K7C	Duo Diode Penthode
Power Amplifier	"	KL4	Power Penthode

### DIAL LAMPS

For "B" Battery Operation	2.5 volt 0.3 amp.
For Vibrator Operation	6.3 volt 0.1 amp.

### INSTALLATION.

Full instructions for the installation of Model 1754 are contained in the instruction book supplied with each Radioplayer.

### INSTRUCTIONS FOR VIBRATOR OPERATION.

Model 1754 is intended for operation either with "B" batteries or with Philips Model 148 Vibrator Unit; where it is desired to use this unit in place of "B" batteries, reference must be made to the instruction sheet supplied with each unit. Though no reference is made to the 1754, the same directions will apply, and the switch located on the 148 unit, must be turned to the 6510-6515 position for operation with the 1754 Radioplayer.

### FUSE LAMP.

A fuse lamp is fitted in series with the "B" Battery negative lead, as a precaution against valve filament burnouts. This set will not operate if the lamp is fused, or not properly screwed into its socket. The correct replacement fuse lamp is of the 2.5 volt 0.1 amp. type.

### DISMANTLING SET.

1. Disconnect batteries.

2. Remove knobs from front of cabinet (recessed grub screws).
3. Withdraw loudspeaker plug from socket.
4. Unscrew four bolts holding chassis to floor of cabinet, and chassis may then be withdrawn.

### REMOVING LOUDSPEAKER.

If it is desired to remove the speaker, this may be accomplished by removing the loudspeaker plug and unscrewing the screws securing the loudspeaker.

### ALIGNMENT.

Precise alignment is vital to the proper functioning of this receiver. There are four trimming adjustments for the intermediate frequency amplifier and seven for the R.F. portion of the set (three short-wave trimmers, three broadcast trimmers, and the broadcast padder). These trimmers are accurately adjusted at the factory and sealed. Alignment will be retained unless alterations have been made to the trimmers or wiring for service purposes. Incorrect alignment is usually indicated by loss of selectivity coupled with poor sensitivity, although these effects may also be caused by other faults, such as defective valves.

(Continued on back page.)

(Continued from page 1.)

The correct performance of this Radioplayer can only be obtained if the set alignment is achieved by the use of reliable test apparatus, and no attempt should be made to tamper with the trimmers unless a suitable oscillator and visual output meter are available together with a competent operator to carry out the work.

Due to the particularly high quality of associated circuits, the adjustment of trimmers, etc., is fairly critical, in fact, a very small adjustment of a trimmer will have a large bearing on the performance of the set.

## I.F. TRIMMER ADJUSTMENT.

The position of the four I.F. trimmers is shown in the chassis lay-out diagram. Each must be aligned to a frequency of 472.5 kc/s. To accomplish this, connect an output meter and the loudspeaker to the receiver. The "hot" side of the test oscillator should be connected to the grid of the KK2 octode through an 0.5 uF condenser, and the "earth" side of the oscillator should be joined to the receiver chassis. The normal grid clip should remain on the cap of the valve. Tune the oscillator to exactly 472.5 kc/s., advance the volume control to full on position and increase the output of the test oscillator until a slight indication is observed on the output indicator. Then adjust the two 2nd I.F. transformer trimmers for peak receiver output. Next adjust the two first I.F. transformer trimmers for maximum indication on the output meter.

During these adjustments the output of the test oscillator should be regulated so that the output is as low as possible. This will prevent errors in alignment due to the A.V.C. action. The I.F. trimmers should be gone over again to ensure that mutual coupling has not displaced the original adjustment.

## R.F. TRIMMER ADJUSTMENT.

The seven trimmers for the radio frequency alignment are classified in the chassis layout as follows:—

- Broadcast aerial trimmer C2.
- „ R.F. trimmer C10.
- „ Oscillator trimmer C14.
- „ Padder C15.
- Short-wave aerial trimmer C3.
- „ R.F. trimmer C11.
- „ Oscillator trimmer C16.

Attach the output of the test oscillator to the aerial and earth terminals of the receiver and proceed as follows:—

## SHORT WAVE ALIGNMENT.

- (a) Move wave change switch on set to short-wave position.
- (b) Adjust test oscillator to 20 Mc/s. (15M) and tune dial of set to same frequency. Adjust short-wave oscillator trimmer until signal is tuned in, then adjust S.W. aerial and R.F. trimmers for maximum output on meter whilst rocking to and fro.

## NOTE:

The short-wave section of this receiver is equipped with fixed padders and consequently the abovementioned adjustments are all that are required for optimum performance. If the service oscillator in use does not cover 20 Mc/s., it is inadvisable to attempt adjustments of the S.W. trimmers.

It should also be noted that the image frequency in this receiver appears on the dial at a point higher in frequency than the incoming signal. This is due to the fact that the oscillator is working at a frequency 472.5 kc/s. lower than the incoming signal, instead of 472.5 kc/s. higher as has been customary in the past.

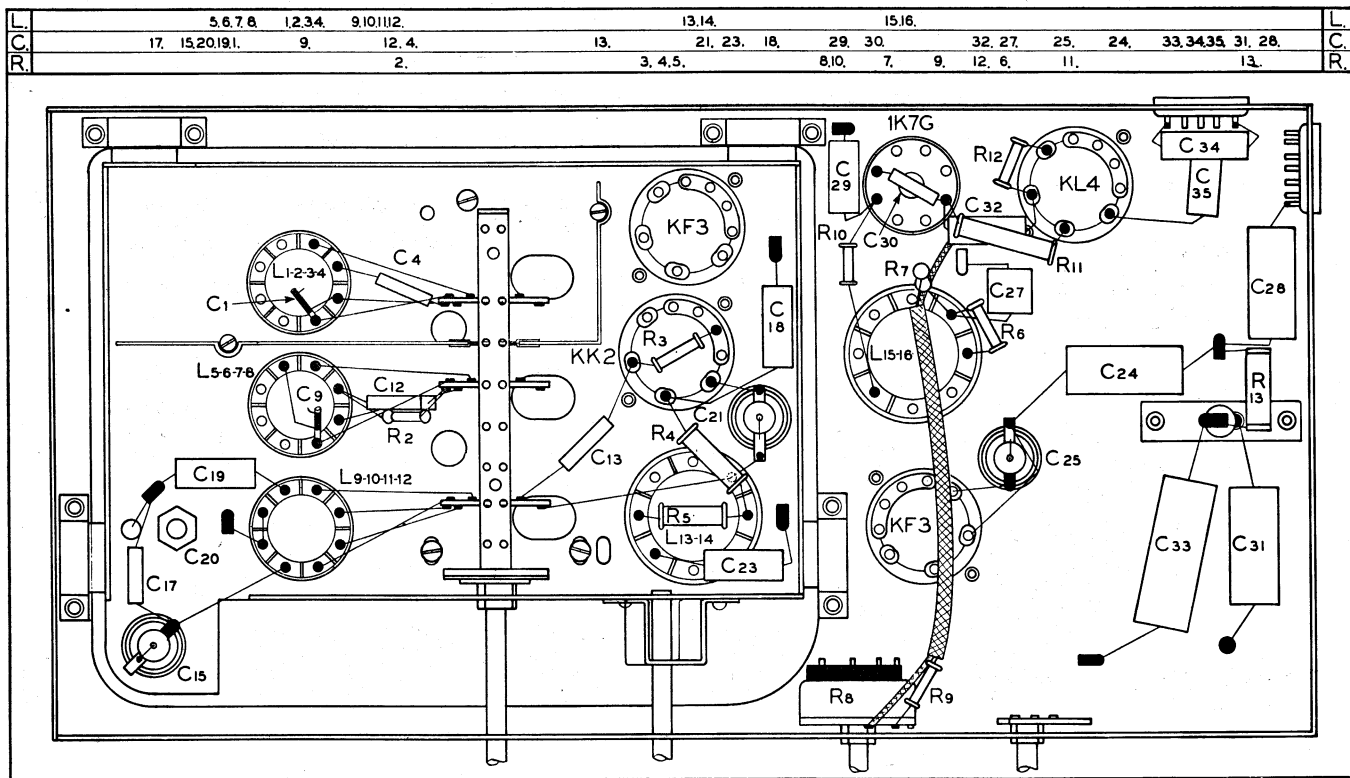
## BROADCAST ALIGNMENT.

- (a) Move wave change switch to broadcast position.
- (b) Adjust test oscillator to 1,400 kc/s. and tune receiver until pointer indicates 1,400 kc/s. on dial.
- (c) Adjust broadcast oscillator trimmer until signal is tuned in, then adjust broadcast aerial and R.F. trimmers for maximum output on meter.
- (d) Adjust test oscillator to 600 kc/s., and tune dial of set until signal is received, then whilst rocking the dial to and fro adjust the padder for maximum output on the meter.
- (e) If padder has been altered very much it will be advisable to return to 1,400 kc/s. and re-check alignment as per pars. (b) and (c).



# SERVICE DATA.

## COMPONENT LOCATION DIAGRAM



## COMPONENTS NOT ON CIRCUIT DIAGRAM

(SEE CHASSIS LAYOUT DIAGRAM.)

No.	Code No.	Price.		Code No.	Price.	
1	Dial Assembly (less glass)	82/214	17/10	Escutcheon Convex	33/517	1/9
2	Dial Glass	33/519	4/-	Goat Valve Shield	24/615	4½d.
3	Strawboard and Black Paper Backing	33/918	6d.	Earth Clip for Valve Shield	24/616	2d.
				33/921	"P" Type Socket	34/516
4	Front Plate Bracing Strip	24/429	2/-	5-Pin Amphenol Socket	34/514	4½d.
5	Dial Cord	35/312	5d.	7-Pin Amphenol Socket	34/542	4½d.
6	Dial Wire Assembly	26/316	1/7	8-Pin Octal Type Socket	34/521	4½d.
7	Dial Drive Drum complete	32/223	5/2	Speaker Silk	35/215	3/2
				24/232	Tuning Knobs	32/212
8	Cable Bracket	23/429	2/-	Battery Cable	26/216	2/8
9	Sub Chassis Grommet	32/318	2½d.	Grid Clip	24/611	½d.
10	Sub Chassis Securing Bracket	23/424	5d.	Grid Clip (G Series)	24/629	½d.
				Escutcheon, complete with Glass	34/543	5/6
				Loudspeaker Transformer (Refer to Coils)		
				Cabinet No. 17		£5/5/3

PRICES QUOTED ARE STRICTLY NETT.

# SERVICE DATA.

## COMPONENT PARTS

### CONDENSERS (PRICES QUOTED ARE STRICTLY NETT.)

No.	Value.	Code No.	Price.	No.	Value.	Code No.	Price.
1	8 uuF	52/521	3d.	19	.05 uF	52/314	7½d.
2	2-30 uuF	54/311	—	20	8 uF	52/412	2/8½
3	2-30 uuF			54/311	2/3		
4	.0045 uF	52/222	11d.	21	12-170 uuF	54/312	2/3
5	80 uuF	52/612	7½d.	22	12-170 uuF (See 1st I.F.)	54/312	—
6	9-400 uuF	53/411	9/6	23	.05 uF	52/314	7½d.
7	9-400 uuF			52/317	7½d.		
8	9-400 uuF			54/312	2/3		
9	30 uuF	52/518	4d.	24	.1 uF	54/312	—
10	2-30 uuF	54/311	—	25	12-170 uuF (See 2nd I.F.)	54/312	—
11	2-30 uuF			52/212	6½d.		
12	.0045 uF	52/222	11d.	26	.0001 uF	52/317	7½d.
13	100 uuF	52/614	7½d.	27	.1 uF	52/317	7½d.
14	2-30 uuF (See Osc. Coil)	54/311	—	28	.05 uF	52/314	7½d.
15	12-170 uuF	54/312	2/3	29	.05 uF	52/212	6½d.
16	2-30 uuF (See Osc. Coil)	54/311	—	30	.0001 uF	52/212	6½d.
17	320 uuF	52/611	7½d.	31	.1 uF	52/317	7½d.
18	.05 uF	52/314	7½d.	32	.02 uF	52/313	7½d.
				33	25 uF	52/416	1/2½
				34	.02 uF	52/313	7½d.
				35	.004 uF	52/331	7½d.

### RESISTORS

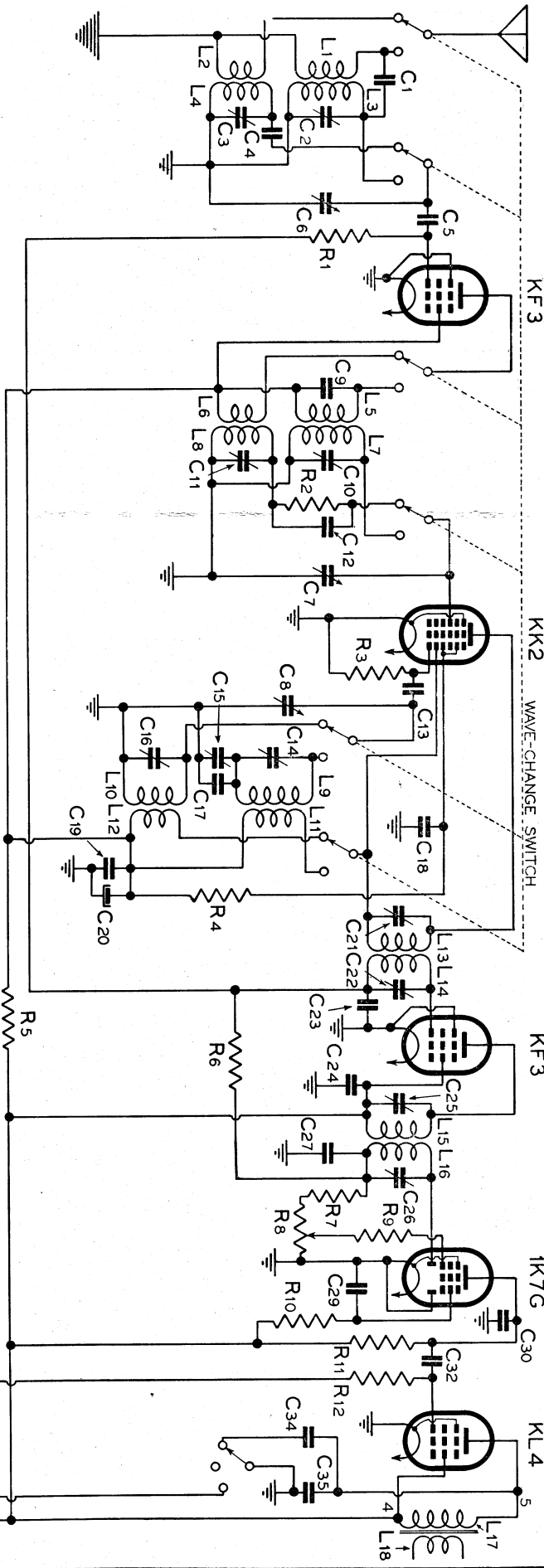
No.	Value.	Code No.	Price.	No.	Value.	Code No.	Price.
1	.5 megohm	62/216	3½d.	8	.5 megohm pot.	63/415	3/3
2	.5 megohm	62/216	3½d.	9	.05 megohm	62/212	3½d.
3	.05 megohm	62/212	3½d.	10	1.0 megohm	62/214	3½d.
4	.05 megohm	62/417	4½d.	11	.25 megohm	62/415	4½d.
5	1500 ohm	62/427	4½d.	12	1.0 megohm	62/214	3½d.
6	1.0 megohm	62/214	3½d.	13	400 ohm	64/214	5d.
7	.05 megohm	62/212	3½d.				

### COILS

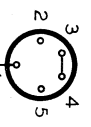
No.	Resistance.	Code No.	Price.	No.	Resistance.	Code No.	Price.
1	30 ohm	42/711	10/-	13	8 ohm	42/314	9/9
2	—			14	+ C22 8 ohm		
3	+ C2 4 ohm			15	8 ohm		
4	+ C3 —	42/811	10/-	16	+ C26 8 ohm	42/414	9/9
5	60 ohm			17	600 ohm		
6	—	42/215	10/-	18	.5 ohm	44/311	8/-
7	+ C10 4 ohm						
8	+ C11 —						
9	+ C14 2.5 ohm						
10	+ C16 —						
11	.5 ohm						
12	—						

**IMPORTANT:** In ordering spare parts quote **CODE NUMBER ONLY**. If claiming free replacement under **GUARANTEE**, return defective parts **PROMPTLY** and quote **TYPE** and **SERIAL NUMBER** of **RADIOPLAYER**.

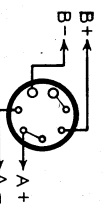
L	12	3-4	5.6	7.8	9.10	11.12	13	14	15	16	17	18
C	1	2,3,4	5	6,7	8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29	30,31,32,33,34,35						
R												



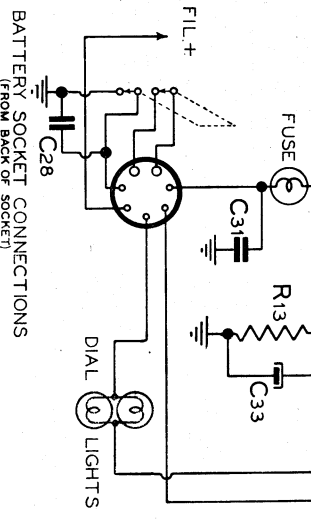
1754



SPEAKER SOCKET  
(LOOKING AT PINS)

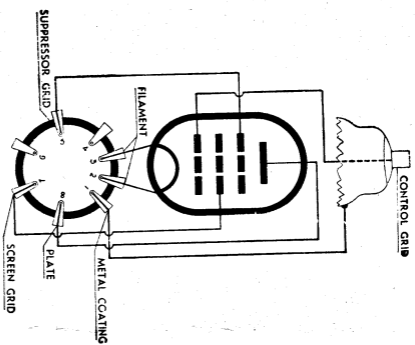


BATTERY PLUG  
(LOOKING AT PINS)

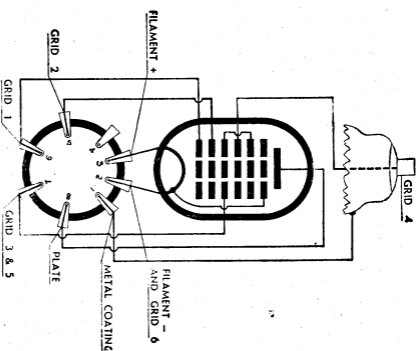


BATTERY SOCKET CONNECTIONS  
(FROM BACK OF SOCKET)

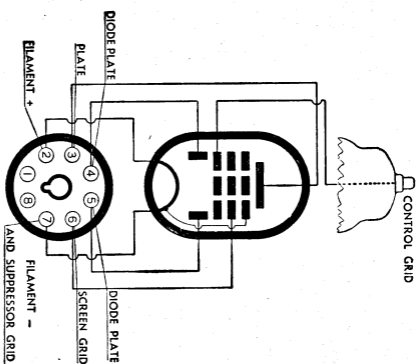
# VALUES, CODE NUMBERS AND PRICES FOR PARTS ARE GIVEN OVERLEAF



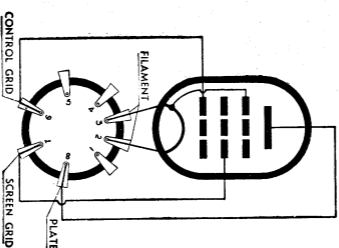
KF3



KK2



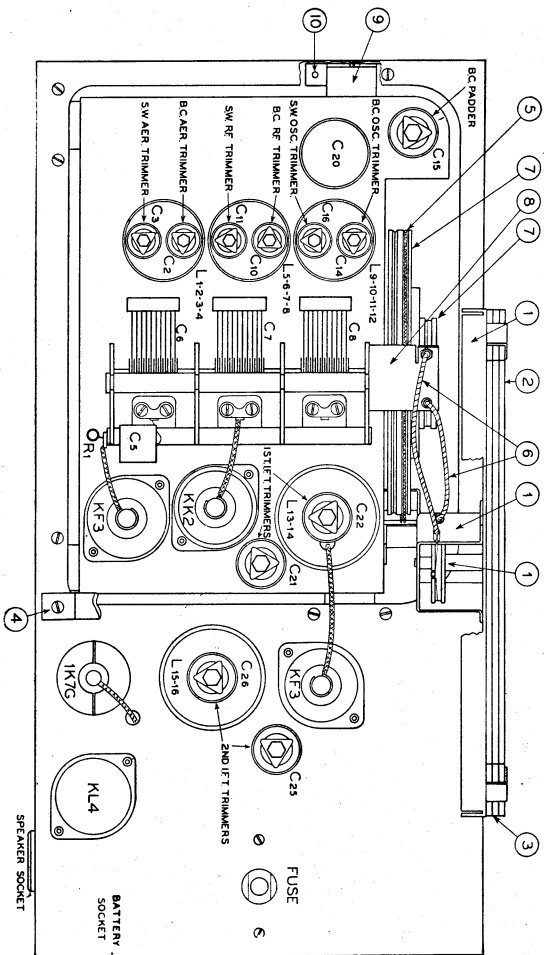
1K7G



KL4

SOCKET CONNECTIONS VIEWED FROM BOTTOM OF BASE.

# CHASSIS LAYOUT DIAGRAM



# VOLTAGE ANALYSIS

Valve Type	Plate Voltage	Screen Voltage	Bias Voltage	Filament Volts
KF3 (R.F.)	120	120	0	2
KK2	120 (Osc. Plate 120v.)	60	0	2
KF3	130	130	0	2
1K7G	30	20	0	2
KL4	125	130	5 (Across R13)	2

**NOTE.**—The abovementioned voltage values with the exception of bias voltages are measured between the socket points indicated and chassis with the receiver in the no signal condition and with the volume control at zero. Bias voltages are to be measured at the source of the voltage, as incorrect readings will otherwise be obtained. Voltages are measured with a 1,000 ohm per volt voltmeter and may vary as much as 10% from the figures quoted.