

PHILIPS RADIOPLAYER

MODEL 1252

A.C. OPERATED FOR BROADCAST AND SHORT WAVE RECEPTION.

SPECIFICATIONS.

(Subject to Alteration Without Notice.)

Voltage Rating (power Supply)	220-260 volts A.C. 40-60 cycles.
Tuning Range	540-1,520 kc/s. 7-22 Mc/s. (43-13.5 metres).
Intermediate Frequency	472.5 kc/s.

VALVE EQUIPMENT.

Frequency Converter	EK2	Octode
I.F. Amplifier	6D6	R.F. Penthode
A.V.C. Demodulator, and Audio Amplifier	75	Duo-diode Triode
Power Amplifier	EL3	Power Penthode
Rectifier	80	Directly Heated Rectifier
Dial Lamps	6.3 volt	0.3 amp. Panel Lamps

INSTALLATION. Full instructions for the installation of Model 1252 are contained in the instruction book supplied with each Radioplayer.

VOLTAGE ADJUSTMENT.

The receiver may be adapted for A.C. mains of 220 to 260 volts by means of taps located on the power transformer. It is important that the receiver should be operated with the red lead in the power flex connected to the tap which most nearly corresponds to the mains voltage where the installation is made.

DISMANTLING THE SET.

1. Disconnect power plug.
2. Remove knobs at front of cabinet (recessed grub screws).
3. Withdraw loudspeaker plug from back of chassis.
4. Unscrew the four bolts holding chassis to floor of cabinet.
5. The chassis may now be withdrawn.

REMOVING LOUDSPEAKER.

If it is desired to remove the speaker, this may be accomplished by withdrawing the speaker plug from the chassis and unscrewing the four woodscrews 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 six for the R.F. portion of the set (two 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 the receiver is affected by abnormal climatic conditions or 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.

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 is available, together with a competent operator to carry out the work.

(Continued on back page)

(Continued from page 1)

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 ADJUSTMENTS. The position of the four I.F. trimmers is shown in the component location diagram. Each must be aligned to the basic 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 EK2 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 trimmers on the 2nd I.F. transformer for peak receiver output. Next adjust the two trimmers on the first I.F. transformer 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 ADJUSTMENTS.

The six trimmers for the radio-frequency alignment are classified in the chassis illustrations as follows:—

- Broadcast Aerial trimmer.
- „ Band-pass trimmer.
- „ Oscillator trimmer.
- „ Padder (C10).
- Shortwave Aerial trimmer.
- „ Oscillator trimmer.

The adjustment of the broadcast trimmers is dependent on the adjustment of the short wave trimmers and for this reason the short wave band must be aligned before the broadcast band.

Attach the output of the test oscillator to the aerial lead and earth terminal of the receiver and proceed further 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 trimmer for maximum output on meter whilst rocking the dial to and fro.

NOTE:

The short wave section of this receiver is equipped with a fixed padder 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 band pass trimmers for 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).

NOTE.—The broadcast oscillator trimmer is a wire trimmer of a somewhat unusual type, being constructed from a piece of 16 S.W.G. enamel wire covered with a winding of 26 S.W.G. tinned copper wire. The turns of this winding are soldered together with a light coat of solder. The capacity is adjusted by removing turns of wire.

In trimming, turns are removed until the output meter which has reached a maximum value drops back slightly. Wire is then wound on again until a maximum reading is obtained. The excess wire is then cut off.



LOCATING PARTS ON CIRCUIT DIAGRAM.

To locate component parts, refer to reference lines and key numbers printed above diagram. Example: To find condenser C10 run a vertical line from the key number C10 through the circuit diagram.

PHILIPS RADIOPLAYERMODEL 1252MODIFICATIONS

IMPORTANT. The changes in code numbers of components and specifications shown on this sheet apply to all 1252 Radioplayers with serial numbers greater than 4000. In a few specific instances it will be observed that the changes apply exclusively to serial numbers 4001 to 4500 and 6001 to 6300.

In ordering replacement parts, it is essential that these changes be observed. Preferably, the serial number of the set should be quoted as well as the code number of the part concerned.

CONDENSERS.

C23 and C34 are combined in one unit specified as:-

<u>Component No.</u>	<u>Value</u>	<u>Code No.</u>	<u>Price</u>
C23)	16 uf.	52/413	3/4 $\frac{1}{2}$
C34)			

The unit combining C9 and C10 is replaced by separate condensers:-

C9	10 uuf max	52/516	3d.
C10	30 uuf max	52/512	7d.

Additional changes in capacitors:-

C13	30 uuf max	52/512	7d.
C14	375 uuf	52/616	7d.

Trimmers C16 and C21 are separate units:-

C16	12-170 uuf	54/312	2/2d.
C21	12-170 uuf	54/312	2/2d.

RESISTORS.

A new value is specified for:-

<u>Component No.</u>	<u>Value</u>	<u>Code No.</u>	<u>Price</u>
R15	50,000 ohm	62/212	3 $\frac{1}{2}$ d.

Additional resistor in series with grid 4 of EK2:-

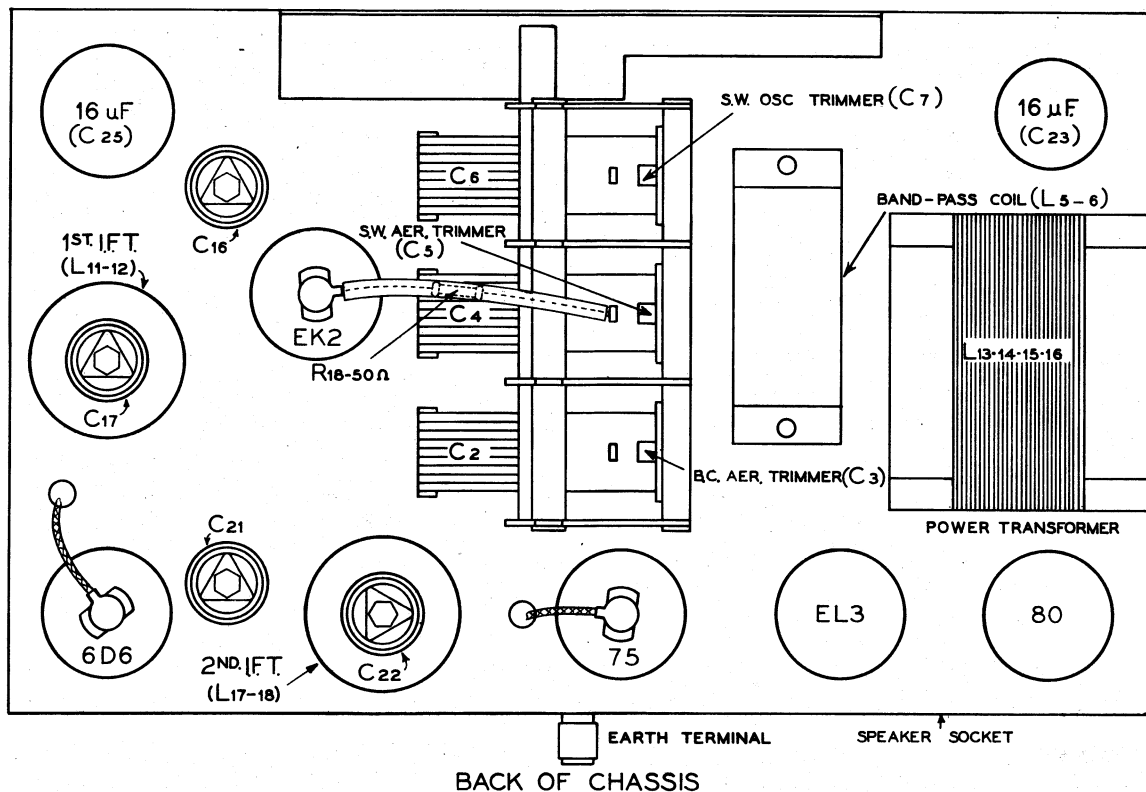
R18	50 ohm	62/211	3 $\frac{1}{2}$ d.
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COILS

Alternation in intermediate frequency transformers:-

<u>Component No.</u>	<u>Resistance</u>	<u>Code No.</u>	<u>Price</u>
L11)	9 ohms)		
L12)	9 ohms) 1st I.F.	42/311	9/6d.
C17)	--		
L17)	9 ohms)		
L18)	9 ohms) 2nd I.F.	42/411	9/6d.
C22)	--		

MODIFIED CHASSIS LAYOUT



Power Transformer alteration:-
Serial numbers 4001 to 4500 and 6001 to 6300.

L13	28 ohms)			
L14	-)	Power	44/219	12/8d.
L15	-)	Transformer		
L16	400 ohms)			

All other serial numbers as before.

COMPONENTS NOT ON CIRCUIT DIAGRAM

<u>Item</u>	<u>Code No.</u>	<u>Price</u>
Dial Glass	33/518	3/6d.
Complete Dial	82/314	22/10d.
Earth Terminal	24/638	3d.

VOLTAGE ANALYSIS.

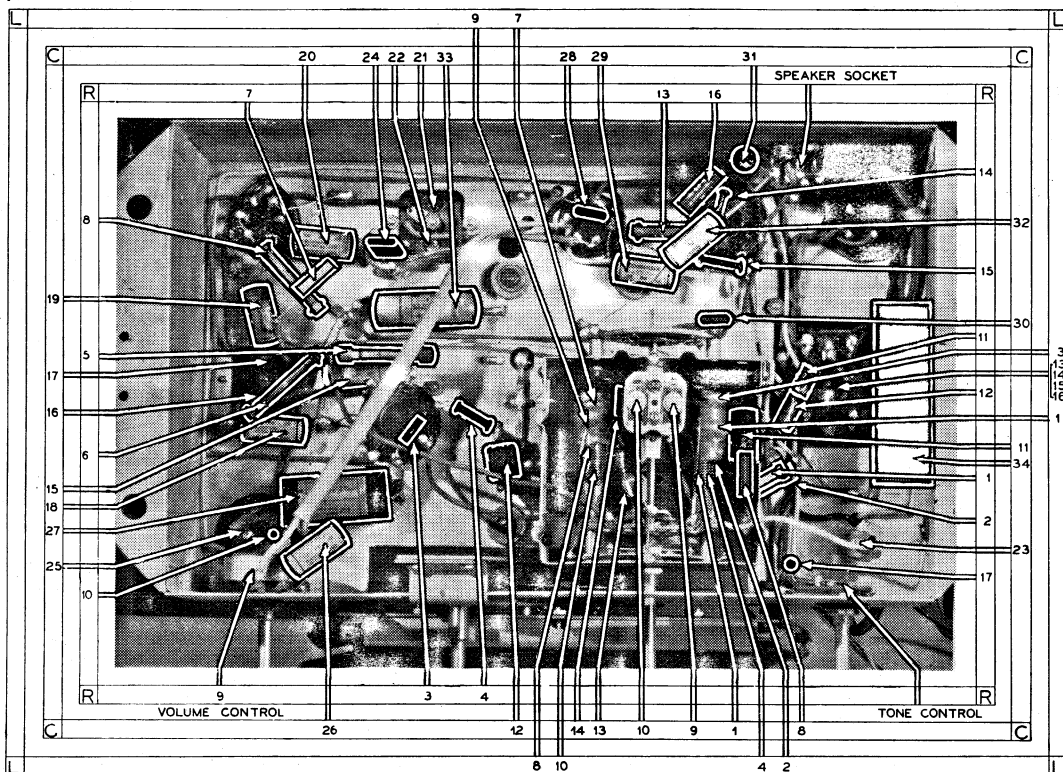
For serial numbers 4001 to 4500 and 6001 to 6300, all high tension voltages are approximately 10 per cent higher. In all other 1252's the voltage analysis is unaltered.

CIRCUIT CHANGE.

For serial numbers 4001 to 4500 and 6001 to 6300, the high tension feed for the oscillator plate (G.2) of the EK2 is taken from the low potential end of R6. i.e. the junction of R6 and C18.

SERVICE DATA.

COMPONENT LOCATIONS.



C 9 BANDPASS TRIMMER C 16 & C 17 1ST. I.F.T. TRIMMERS C 10 BROADCAST PADDER
 C 13 BROADCAST OSCILLATOR TRIMMER C 21 C 22 2ND. I.F.T. TRIMMERS

COMPONENTS NOT MARKED ON CIRCUIT DIAGRAM

Item.	Code No.	Price.
Complete Dial	82/311	22/10
Dial Glass	33/512	3/6
Escutcheon (complete with glass)	34/523	4/1
Escutcheon glass (convex)	33/513	1/4
Tone Control Switch	74/412	1/3
Goat Valve Shield	24/615	4½d.
"P" Type Valve Socket	34/516	4d.
Earth Clips for Valve Shields	24/616	2d.
4 Pin Amphenol Socket	34/513	4½d.
5 Pin Amphenol Socket	34/514	4½d.
6 Pin Amphenol Socket	34/515	4½d.
No. 12 Cabinet	33/615	£4/11/4
Speaker Baffle Silk	35/211	2/4
Tuning Knob	32/212	6d.
Complete Coil Box	46/211	37/3
Condenser Clamp	24/416	1d.
Power Flex	26/211	1/-
Rubber Grommet (for power flex)	32/313	1d.
Grid Clip	24/611	½d.
Earth Terminal	24/612	2d.
Rubber Grommet (for tuning gang)	32/316	2d.

PRICES QUOTED ARE STRICTLY NETT.
 BEFORE ORDERING SPARE PARTS READ CAREFULLY

SERVICE DATA.

COMPONENT PARTS. (PRICES QUOTED ARE STRICTLY NETT.)

CONDENSERS.

No.	Value.	Code No.	Price.	No.	Value.	Code No.	Price.	
C1	6 uuF	52/513	3d.	C18	0.02 uF	52/313	7½d.	
C2	9-400 uuF	53/211	9/6	C19	0.05 uF	52/314	7½d.	
C3	5-30 uuF			} Tuning Gang	C20	0.05 uF	52/314	7½d.
C4	9-400 uuF				C21	50-100 uuF	} 54/211	1/6
C5	3-15 uuF			C22	50-100 uuF			
C6	9-400 uuF			C23	8 uF	52/412	2/8½	
C7	3-15 uuF			C24	0.0001 uF	52/212	6½d.	
C8	0.0045 uF			52/222	11d.	C25	16 uF	52/413
C9	3-30 uuF	54/212	1/6	C26	0.02 uF	52/313	7½d.	
C10	50-100 uuF			C27	25 uF	52/416	1/2½	
C11	0.05 uF	52/314	7½d.	C28	0.0001 uF	52/212	6½d.	
C12	0.0001 uF	52/212	6½d.	C29	0.02 uF	52/313	7½d.	
C13	30 uuF	52/511	3d.	C30	0.001 uF	52/218	7½d.	
C14	0.00032 uF	52/229	6½d.	C31	0.004 uF	52/324	7½d.	
C15	0.05 uF	52/314	7½d.	C32	0.02 uF	52/313	7½d.	
C16	50-100 uuF	54/211	1/6	C33	0.1 uF	52/317	7½d.	
C17	50-100 uuF			C34	8 uF	52/419	2/8½	

RESISTORS.

No.	Value.	Code No.	Price.	No.	Value.	Code No.	Price.
R1	0.5M ohm	62/216	3½d.	R10	1M ohm	62/214	3½d.
R2	0.5M ohm	62/216	3½d.	R11	100 ohm	} 64/212	6d.
R3	50,000 ohm	62/212	3½d.	R12	100 ohm		
R4	50 ohm	62/211	3½d.	R13	250,000 ohm	62/415	4½d.
R5	150,000 ohm	62/414	4½d.	R14	1M ohm	62/214	3½d.
R6	5000 ohm	62/412	4½d.	R15	100,000 ohm	62/215	3½d.
R7	1M ohm	62/214	3½d.	R16	150 ohm	64/213	5d.
R8	60,000 ohm	62/413	4½d.	R17	10,000 ohm	62/213	3½d.
R9	0.5M ohm. Vol. Cont.	63/211	3/3				

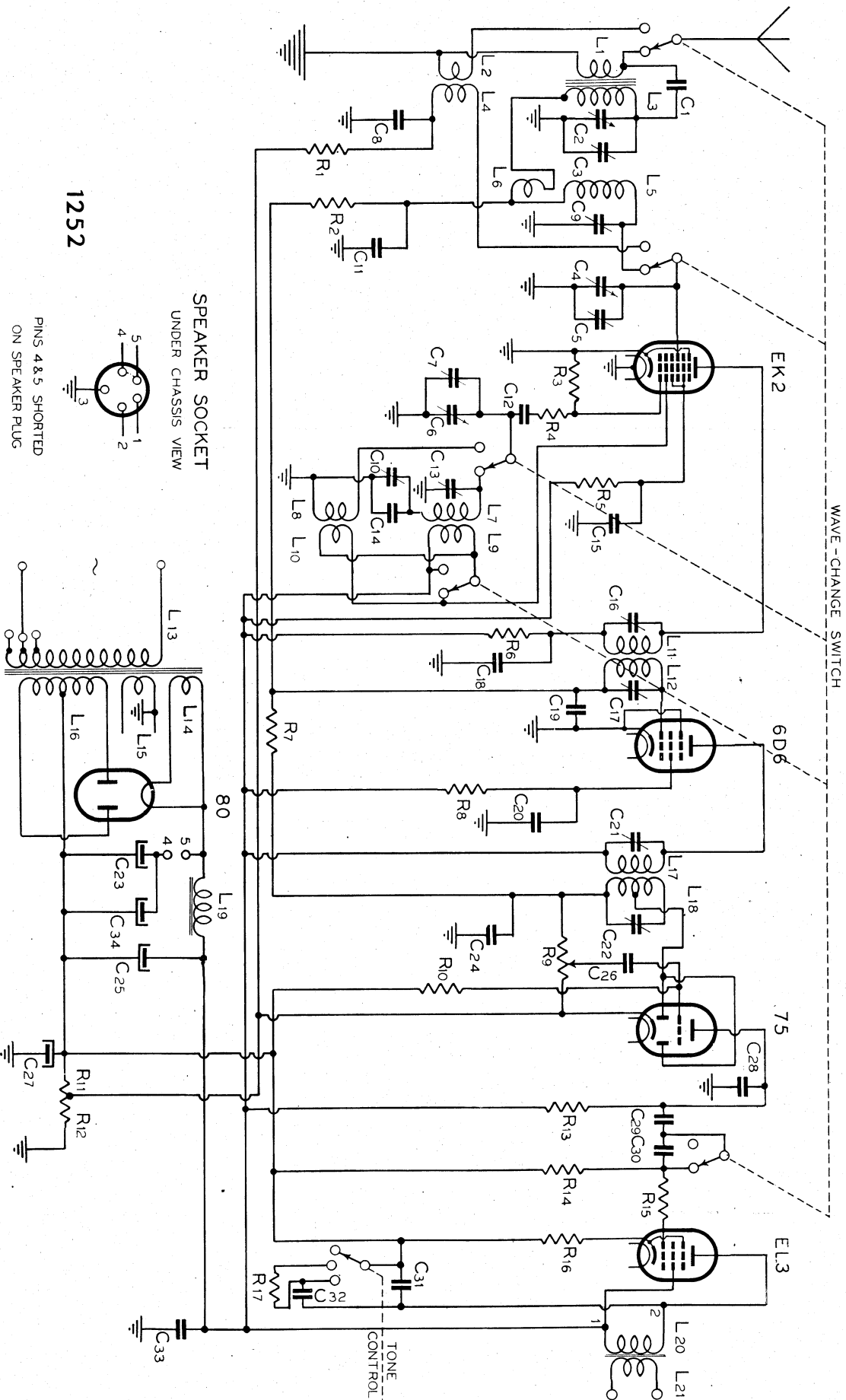
COILS.

No.	Resistance.	Code No.	Price.	No.	Resistance.	Code No.	Price.		
L1	20 ohm	43/221	3/6	L11	9 ohm	} 1st I.F.	42/321	7/9	
L2	—			L12	9 ohm				
L3	2.5 ohm			} Aerial Coil	L13	50 ohm	} Power Trans- former	44/221	12/8
L4	—				L14	—			
L5	3.3 ohm	} Band Pass Coil	42/251	2/-	L15	—			
L6	—				L16	540 ohm			
L7	2.5 ohm	} Oscillator Coil	42/241	2/9	L17	9 ohm	} 2nd I.F.	42/331	7/9
L8	—				L18	9 ohm			
L9	0.5 ohm				} Speaker	45/341	17/6	L19	1500 ohm
L10	—							L20	600 ohm
					L21	0.5 ohm			

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.

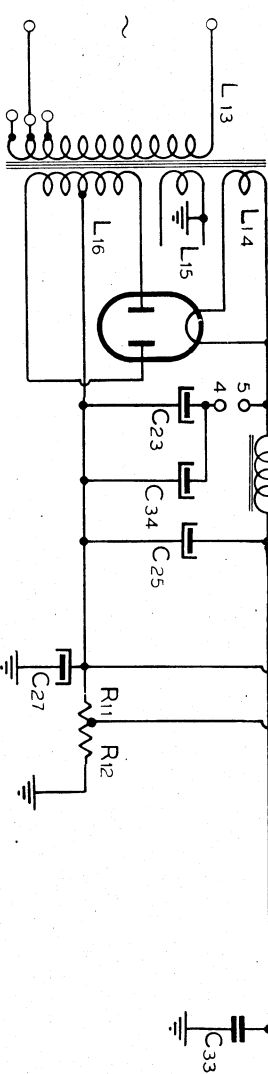
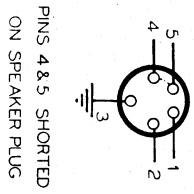
SERVICE DATA.

R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21



SPEAKER SOCKET
UNDER CHASSIS VIEW

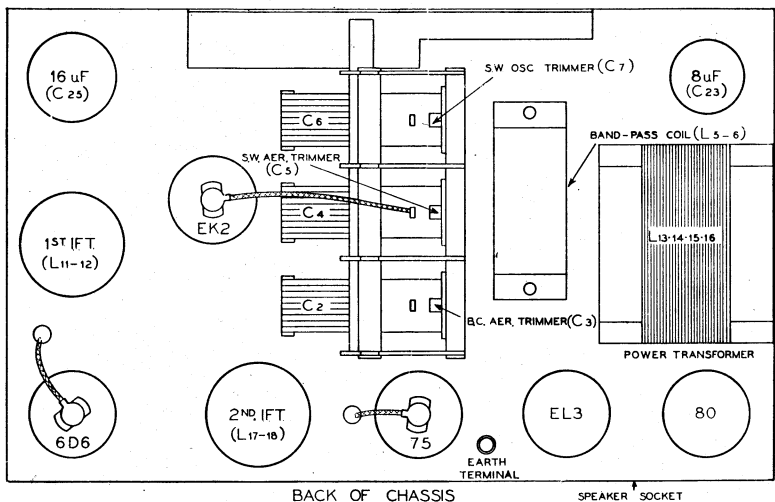
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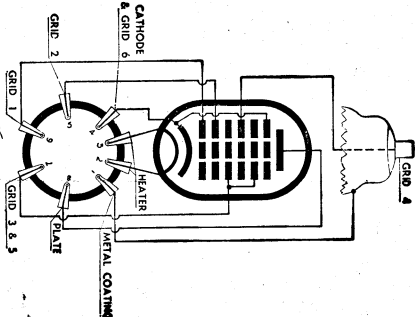


VOLTAGE ANALYSIS.

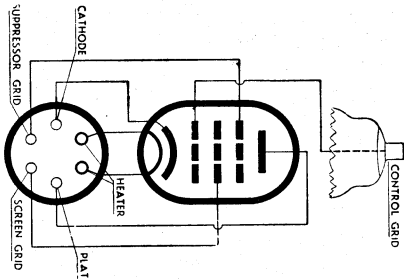
Valve Type	Plate Voltage	Plate Current	Screen Grid Voltage	Bias Voltage	Heater Voltage A.C.
EK2	205 Osc. Plate G.2 = 215	0.8	45	Across R12 —1.6	6.3
6D6	215	8.0	85	Across R12 —1.6	6.3
75	100	0.3	—	Across R11 —1.6	6.3
EL3	190	33	215	Across R16 6.0	6.3
80	—	—	—	—	5

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.

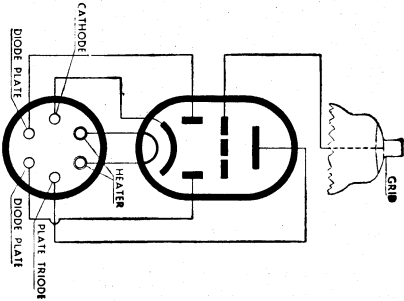




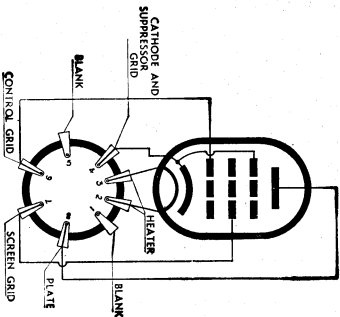
EK2



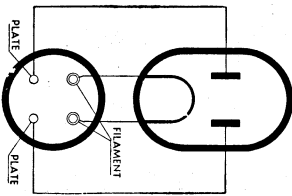
6D6



75



EL3



80

SOCKET CONNECTIONS VIEWED FROM BOTTOM OF BASE.