

PHILIPS RADIOPLAYER

MODEL 1362

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

R.F. Amplifier	6D6	R.F. Penthode
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 Lamp	6.3 volt 0.3 amp. Panel Lamp	

INSTALLATION. Full instructions for the installation of Model 1362 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.

It should be noted that to obtain access to the underneath of the chassis, it is not necessary to remove the chassis from the cabinet, as the underneath of the chassis can be exposed by removing the back of the cabinet.

However, if it is desired to remove the chassis, proceed as follows:

1. Disconnect power supply.
2. Remove knobs on top of cabinet (recessed grub screws).
3. Remove screws securing back of cabinet and remove the back, being careful to unclip the earth lead from the metal screen.
4. Withdraw loudspeaker plug from back of chassis.
5. Withdraw 4-pin power plug from socket on chassis.
6. Unscrew the four bolts holding the chassis to the back of the cabinet.

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 wood 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 adder). 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.

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.

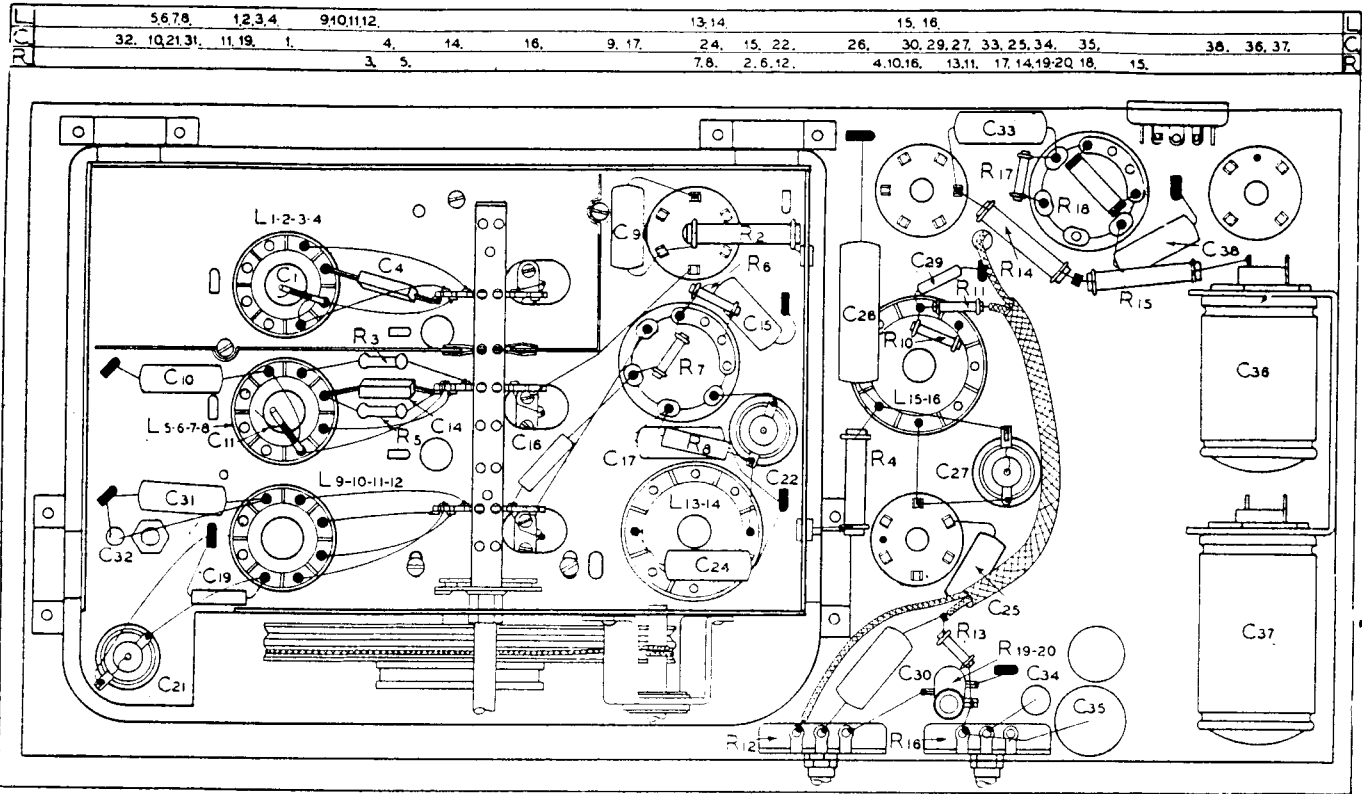
Due to the particularly high quality of associated circuits, the adjustment of trimmers, etc., is fairly critical, in fact, a very small adjustment of a trimmer will have a large bearing on the performance of the set.

I.F. TRIMMER ADJUSTMENTS.

The position of the four I.F. trimmers is shown in

(Continued on back page.)

COMPONENT LOCATION DIAGRAM



COMPONENTS NOT SHOWN ON CIRCUIT DIAGRAM

Position.	Code No.	Price.	Position.	Code No.	Price.
1 Dial Assembly (without glass)	82/213	17/10	Escutcheon	32/221	1/11
2 Dial Glass	33/516	4/-	Coat Valve Shield	24/615	4½d.
3 Strawboard and Black Paper Backing	{ 33/918 } { 33/921 }	6d.	Earth Clip for Valve Shield	24/616	2d.
4 Front Plate Bracing Strip	24/433	2/-	"P" Type Valve Socket	34/516	4d.
5 Dial Cord	35/312	5d.	4 Pin Amphenol Socket	34/513	4½d.
6 Dial Wire Assembly	26/316	1/7	5 Pin Amphenol Socket	34/514	4½d.
7 Dial Drive Drum complete	{ 32/223 } { 24/232 }	5/2	6 Pin Amphenol Socket	34/515	4½d.
8 Cable Bracket	23/429	2/-	No. 13 Cabinet (less glass)	33/617	£5/0/6
9 Sub Chassis Grommet	32/318	2½d.	Glass for Cabinet	33/521	7/6
10 Sub Chassis Securing Bracket	23/424	5d.	Speaker Silk	35/214	3/2
			Power Flex	26/211	1/6
			Grid Clip	24/611	½d.
			Grid Clip (shielded)	24/625	5d.

SERVICE DATA.

COMPONENT PARTS CONDENSERS (PRICES QUOTED ARE STRICTLY NETT.)

No.	Value.	Code No.	Price.	No.	Value.	Code No.	Price.	
1	5 uuF	52/519	3d.	20	2-30 uuF (See Osc. Coil)	54/311	—	
2	2-30 uuF	54/311	—	21	12-170 uuF	54/312	2/3	
3	2-30 uuF } See Aer. Coil	54/311	—	22	12-170 uuF	54/312	2/3	
4	.0045 uF	52/222	11d.	23	12-170 uuF (See 1st I.F.)	54/312	—	
5	9-400 uuF	53/411	9/6	24	.05 uF	52/314	7½d.	
6	9-400 uuF			} Tuning Gang	25	.05 uF	52/314	7½d.
7	9-400 uuF				26	.1 uF	52/317	7½d.
8	.0001 uF	52/614	7½d.	27	12-170 uuF	54/312	2/3	
9	.05 uF	52/314	7½d.	28	12-170 uuF (See 2nd I.F.)	54/312	—	
10	.02 uF	52/313	7½d.	29	.0001 uF	52/212	6½d.	
11	30 uuF	52/518	3d.	30	.02 uF	52/313	7½d.	
12	2-30 uuF	54/311	—	31	.02 uF	52/313	7½d.	
13	2-30 uuF } See R.F. Coil	54/311	—	32	8 uF	52/412	2/8½	
14	.0045 uF	52/222	11d.	33	.02 uF	52/313	7½d.	
15	.05 uF	52/314	7½d.	34	.006 uF	52/326	7½d.	
16	.0001 uF	52/614	7½d.	35	25 uF	52/416	1/2½	
17	.02 uF	52/313	7½d.	36	16 uF	52/413	3/4½	
18	2-30 uuF (See Osc. Coil)	54/311	—	37	16 uF	52/414	3/4½	
19	.00025 uF	52/615	7½d.	38	.004 uF	52/324	7½d.	

RESISTORS

No.	Value.	Code No.	Price.	No.	Value.	Code No.	Price.
1	.5 megohm	62/216	3½d.	11	.5 megohm	62/216	3½d.
2	1600 ohm	62/424	4½d.	12	.5 megohm pot.	63/213	3/3
3	25 ohm	62/223	3½d.	13	1.0 megohm	62/214	3½d.
4	1600 ohm	62/424	4½d.	14	.25 megohm	62/415	4½d.
5	.5 megohm	62/216	3½d.	15	10,000 ohm	62/422	4½d.
6	500 ohm	64/217	3½d.	16	.5 megohm pot.	63/413	3/3
7	50,000 ohm	62/212	3½d.	17	.1 megohm	62/215	3½d.
8	.15 megohm	62/414	4½d.	18	150 ohm	64/213	5d.
9	25,000 ohm (Vol. Div.)	65/211	2/-	19	75 ohm }	64/216	6d.
10	1.0 megohm	62/214	3½d.	20	100 ohm }		

COILS

No.	Resistance.	Code No.	Price.	No.	Resistance.	Code No.	Price.	
1	30 ohm	42/711	10/-	13	3 ohm	42/311	9/9	
2	—			} Aerial Coil	14			+ C23 8 ohm
3	+ C2 4 ohm				15			3 ohm
4	+ C3 —	42/811	10/-	16	+ C28 3 ohm	42/411	9/9	
5	60 ohm			} R.F. Coil	17			20 ohm
6	—				18			—
7	+ C12 4 ohm	42/213	10/-	19	—	44/219	18/-	
8	+ C13 —			} Power Transformer	20			400 ohm
9	+ C18 2.5 ohm				21			600 ohm
10	+ C20 —	42/311	17/6	22	1,500 ohm	45/311	17/6	
11	0.5 ohm			} Osc. Coil	23			0.5 ohm
12	—				24			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.

(Continued from page 1.)

the chassis layout 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 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 ADJUSTMENTS.

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

Broadcast aerial trimmer	C2
Broadcast R.F. trimmer	C12
Broadcast oscillator trimmer	C18
Broadcast padder	C21
Short wave aerial trimmer	C3
Short wave R.F. trimmer	C13
Short wave oscillator trimmer	C20

Attach the output of the test oscillator to the aerial and earth leads 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 a signal is tuned in, then adjust S.W. aerial and R.F. trimmers for maximum output on meter whilst rocking the dial to and fro.

NOTE:

The short wave section of this receiver is equipped with fixed padders and consequently the above-mentioned adjustments are all that are required for optimum performance. If the service oscillator in use covers 20 Mc/s., it is inadvisable to attempt adjustments of the S.W. trimmers.

It should also be noted that on short waves 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.

- Move wave change switch to broadcast position.
- Adjust test oscillator to 1,400 kc/s and tune receiver until pointer indicates 1,400 kc/s. on dial.
- Adjust broadcast oscillator trimmer until signal is tuned in, then adjust broadcast aerial and R.F. trimmers for maximum output on meter.
- Adjust test oscillator to 600 kc/s., and turn dial of set until signal is received, then whilst rocking the dial to and fro adjust the padder for maximum output on the meter.
- 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).

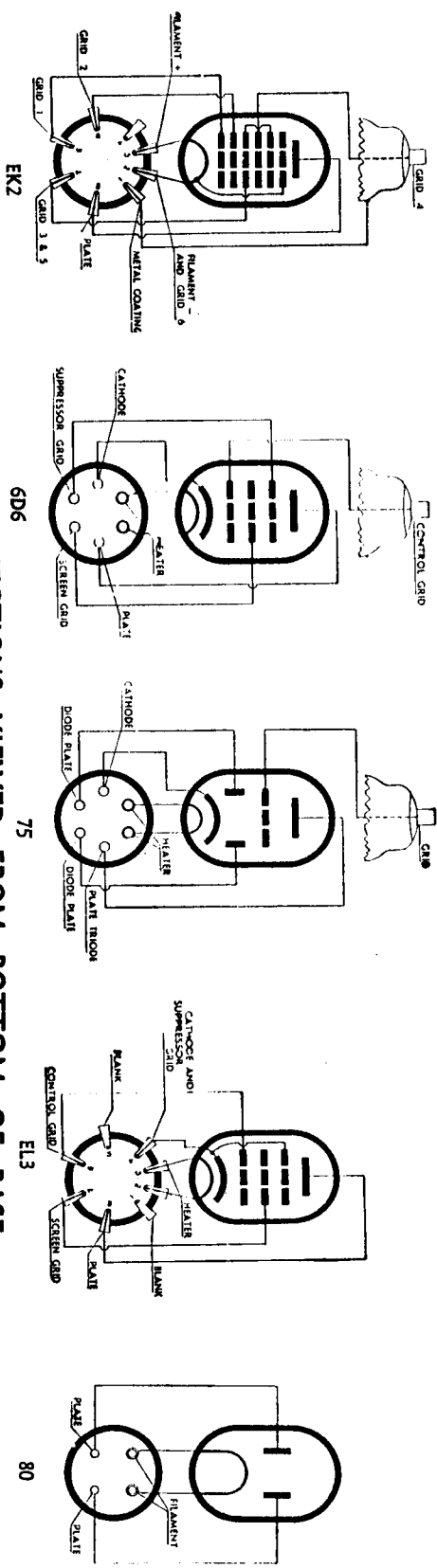
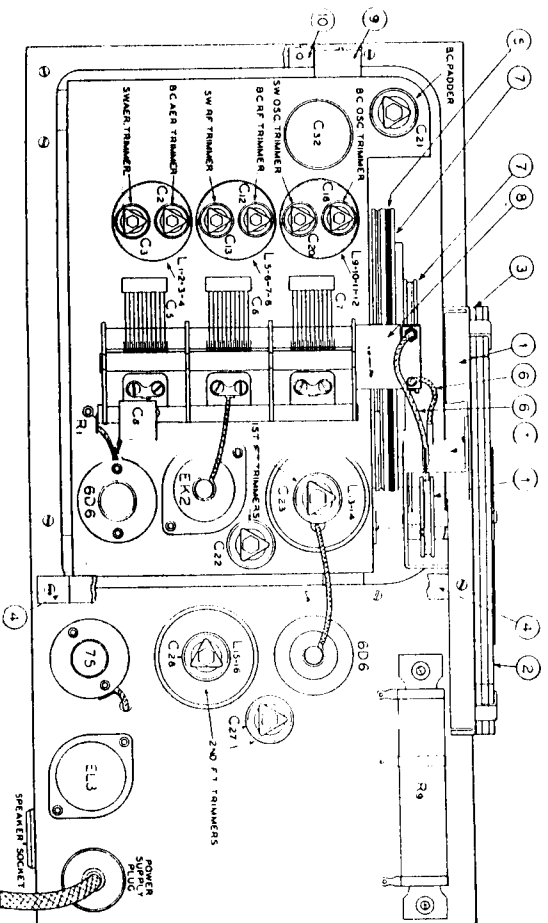


VOLTAGE ANALYSIS

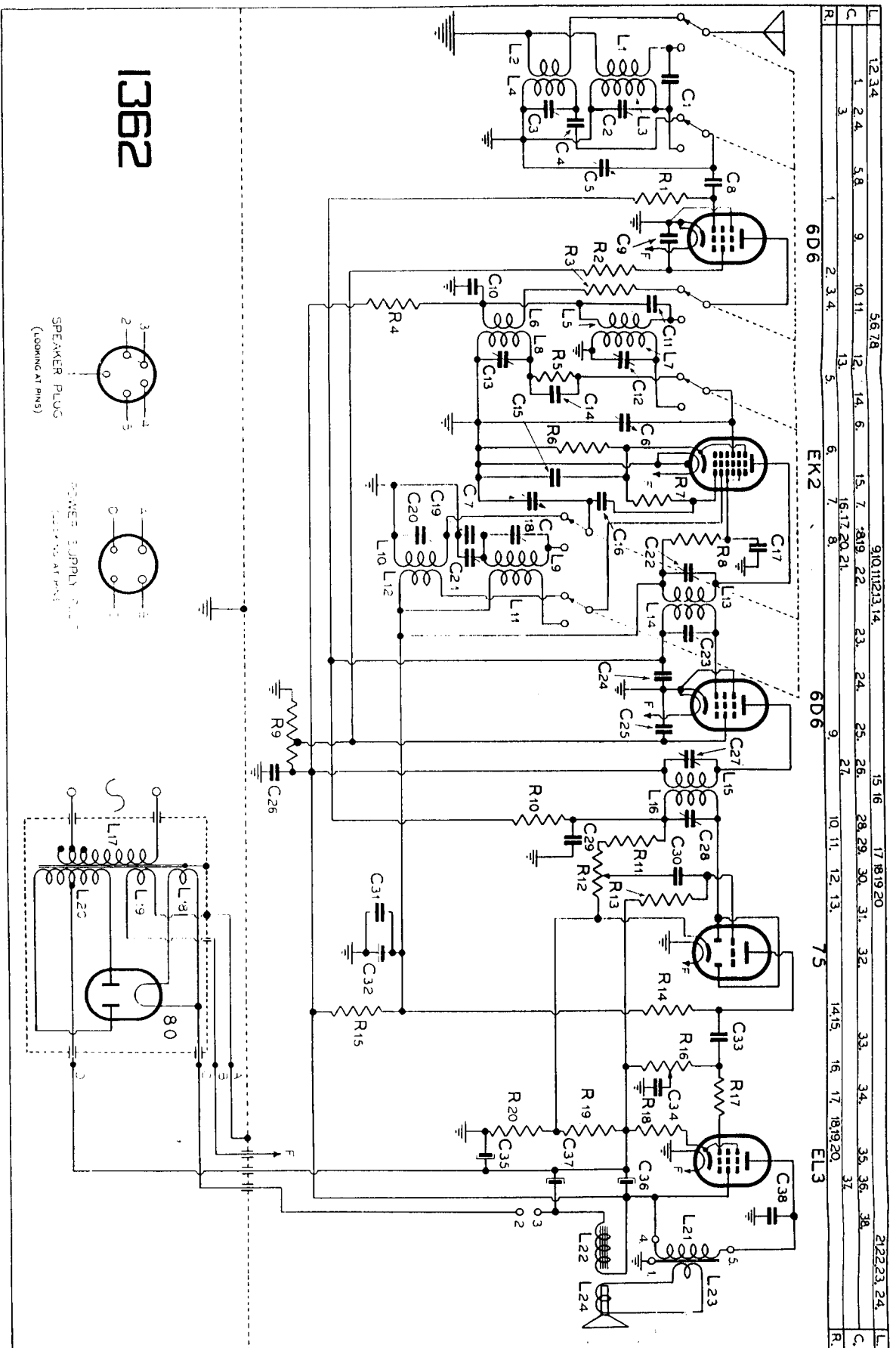
Valve Type	Plate Voltage	Screen Voltage	Bias Voltage	Heater Voltage (A.C.)
6D6 (R.F.)	215	80	3 (Across R20)	6.3
EK2	185 O.P.P. / 185	45	3 (Across R5)	6.3
6D6 (I.F.)	225	90	3 (Across R20)	6.3
75	100	—	2 (Across R19)	6.3
EL3	210	225	6 (Across R18)	6.3
90	320 A.C. per plate			5.0

NOTE.—The abovementioned voltage values with the exception of bias voltages are measured between the socket points indicated and chassis wiring, 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 300 ohm per volt voltmeter and may vary as much as 10% from the figures quoted.

CHASSIS LAYOUT DIAGRAM



VALUES, CODE NUMBERS AND PRICES FOR PARTS ARE GIVEN OVERLEAF



12 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 36 37	38 39 40 41 42 43 44 45
12 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 36 37	38 39 40 41 42 43 44 45
12 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 36 37	38 39 40 41 42 43 44 45
12 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 36 37	38 39 40 41 42 43 44 45

SOCKET CONNECTIONS VIEWED FROM BOTTOM OF BASE,