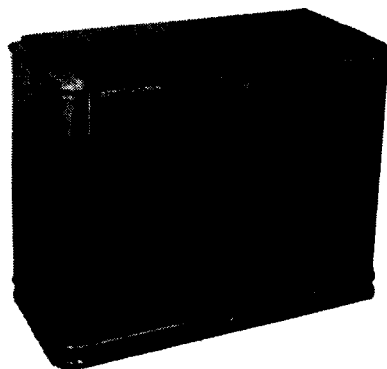


# PHILIPS RADIOPLAYER

## MODELS 177C-D-E



NOTE: The differences between Models 177C and 177D are a change in I.F. transformers. Refer to "Coils" list and circuit diagram drawing for details.

The difference between Models 177D and 177E is in the type of record changer used; refer to "Specifications" and "Capacitors" list (C44) for details.

### SPECIFICATIONS

(Subject to alteration without notice)

Power Supply	.....	.....	.....	.....	200-250V, 40-50 c/s.
Tuning Ranges	.....	.....	.....	.....	530-1620 kc/s. 4.7-9.2 Mc/s. 9.1-18.4 Mc/s.
Intermediate Frequency	.....	.....	.....	.....	455 kc/s.
Cabinet	.....	.....	.....	.....	Radiogram
Record Changer, 177C-D	.....	.....	.....	.....	Philips type AG1000
177E	.....	.....	.....	.....	Philips type AG1003

### VALVE EQUIPMENT AND VOLTAGE ANALYSIS

Valve Function	Valve No.	Valve Type	Plate Volts	Screen Volts	Osc. P. Volts	Cathode Volts	
Frequency Converter	V1	6AN7	235	65	55	—	
I.F. Amplifier	V2	6BH5	235	65		—	
Demodulator, A.V.C. and 1st Audio	V3	6BD7	60			—	
2nd Audio Amplifier	V4	6BH5	115			26	
Phase Splitter	V5	6BD7	180			40	
Push-Pull Power Amplifier	V6	6M5	265	235		7.5	
Push-Pull Power Amplifier	V7	6M5	265	235		7.5	
Rectifier	V8	6V4	Cathode to L18 C.T. = 273V				
Dial (2) and Bezel Lamps	V11, 12 13		6.3V, 0.32A tubular screw				
Voltage across R21, 5V; R1 6, 9V; R32, -2.3V							

NOTE: These voltages are measured with an "1,000 ohms per volt" meter and may vary  $\pm 10\%$  from the figures quoted. They are measured from the socket points indicated in chassis, or across the resistors listed. The receiver should be in a "no signal" condition.

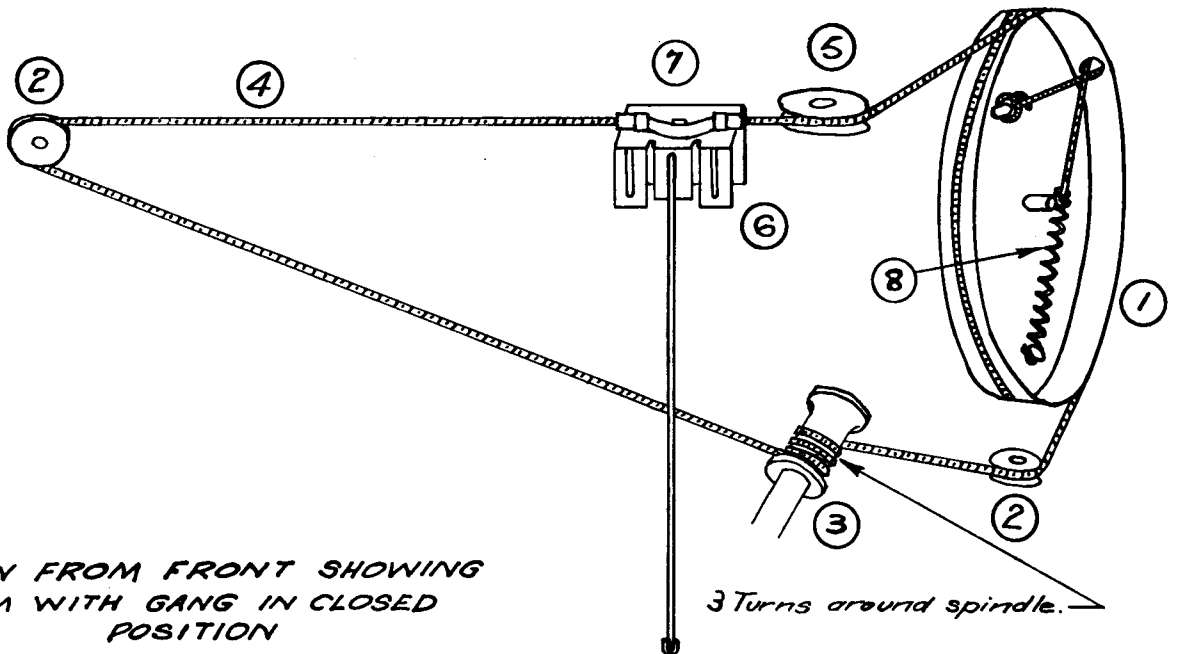
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PHILIPS ELECTRICAL INDUSTRIES PTY. LTD.

SYDNEY - MELBOURNE - BRISBANE - ADELAIDE - PERTH

### MISCELLANEOUS COMPONENTS

No. on Dial Cord Layout Drawing	Description	Code No.	No. on Dial Cord Layout Drawing	Description	Code No.
6	Assembly, cursor	CR.480.664	—	Knob, control, 4x	CR.523.714
—	Assembly, lampholder, 2x	C/F733-5-4	—	Plug, male (gramo. unit power)	CZ.365.115
—	Assembly, lampholder (bezel)	CZ.367.920	—	Plug, 2-pin polarised (speaker and pick-up)	C/F691-5-1
3	Assembly, tuning spindle	CR.371.223	5	Pulley, dial (large)	CS.359.613
—	Badge, Philips	CR.531.408	2	Pulley, dial (small), 2x	CS.359.612
—	Bank, W/C switch (aerial)	CZ.200.060	—	Scale, dial	CS.412.395
—	Bank, W/C switch (osc.)	CZ.200.061	—	Socket, female (gramo. unit power)	CZ.365.116
—	Bezel	CS.430.023	—	Socket, 2-pin polarised (speaker and pick-up)	C/F733-16-1
—	Clip, spring (knob), 4x	CS.281.832	—	Socket, valve (noval), 8x	C/F733-2-14
—	Clip, spring (I.F.T. mtg.), 2x	A3.652.58	7	Spring, cursor	CS.212.016
4	Cord, dial drive 69" of cord required		8	Spring, dial cord	CS.210.043
1	Drum, dial	CS.360.006			

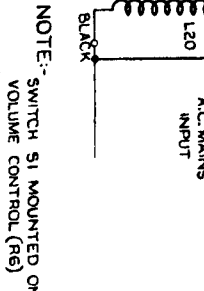
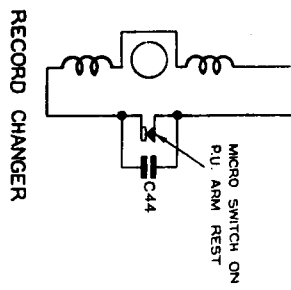
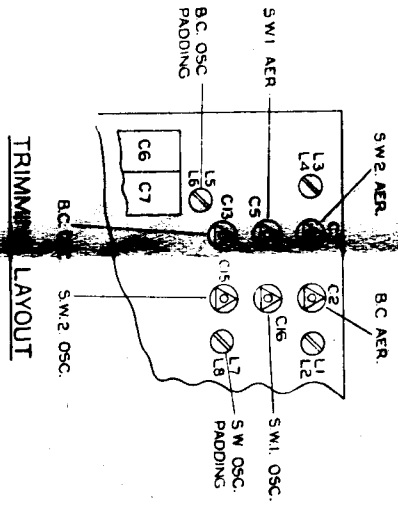
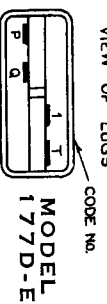
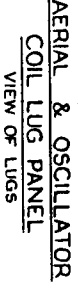
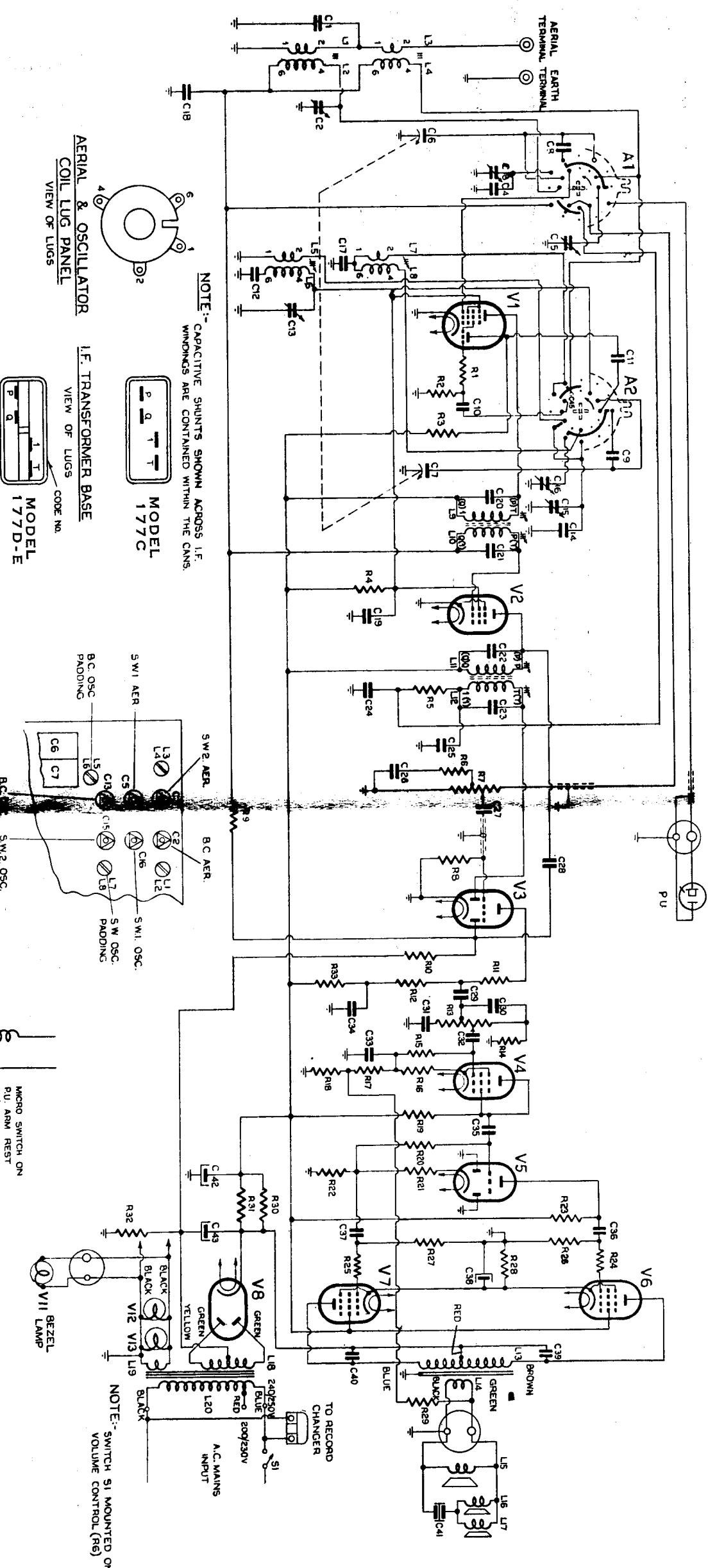


SERVICE DATA

L	1,2,3,4	5,7,8	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	45,46	47,48	49,50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SWITCH A1 & A2 SHOWN  
IN S.W.1 POSITION  
SHORT WAVE 1  
BROADCAST  
GRAMMO

NOTE:-  
NEUTRALIZING CONDENSER C45  
IS FORMED BY THE CAPACITY  
BETWEEN THIS STATOR LUG  
AND THE ADJACENT STATOR CONTACT



### PARTS LIST

#### CAPACITORS

No.	Description	Code No.
C1, 10, 11, 24, 25	100 pF mica	
C2, 3, 5, 15, 16	30 pF air trimmer	CZ.113.700
C4	115 pF mica 2½%	CZ.066.138
C6, 7	2 gang tuning	CZ.107.746
C8, 9	180 pF mica 1%	CZ.065.722
C12	475 pF mica 2%	CZ.066.119
C13	60 pF air trimmer	49.005.58
C14	110 pF mica 2½%	CZ.066.140
C17	0.0045 mF mica 10%	CZ.068.102
C18, 26	0.05 mF 200V paper	
C19	0.05 mF 400V paper	
C20, 21, 22, 23	Part of I.F. transformer	
C27, 30	0.002 mF 600V paper	
C28	30 pF mica	
C29	0.02 mF 400V paper	
C31	0.001 mF 400V paper	
C32, 33, 35	0.01 mF 400V paper	
C34	0.1 mF 400V paper	
C36, 37	0.01 mF 600V paper	
C38	25 mF 10V electrolytic	
C39, 40	0.005 mF 600V paper	
C41	50 mF 6V non-polarised electrolytic	CZ.099.870
C42, 43	40 mF 350V electrolytic	
C44 (177C-D)	0.01 mF 600V paper	
C44 (177E)	0.005 mF 600V paper	

All tolerances are ± 20% unless otherwise specified.

#### RESISTORS

No.	Description	Code No.
R1	100 ohms ½W carbon	
R2	22,000 ohms ½W carbon	
R3	47,000 ohms 1W carbon 10%	
R4	68,000 ohms 1W carbon	
R5, 33	47,000 ohms ½W carbon	
R6, 17	10,000 ohms ½W carbon 10%	
R7	0.5 megohm carbon potentiometer tapped at 40,000 ohms with S.P.S.T. switch	CZ.032.016
R8	10 megohm ½W carbon	
R9, 10	2.2 megohm ½W carbon	
R11, 14, 19	68,000 ohms ½W carbon 10%	
R12	150,000 ohms ½W carbon 10%	
R13	0.5 megohm carbon potentiometer tapped at 0.25 megohm	CZ.029.150
R15, 20	1 megohm ½W carbon	
R16	5,600 ohms ½W carbon 10%	
R18, 29	100 ohms ½W carbon 10%	
R21	2,700 ohms carbon 10%	
R22, 23	47,000 ohms ½W carbon 10%	
R24, 25	4,700 ohms ½W carbon	
R26, 27	0.47 megohm ½W carbon	
R28	150 ohms 1W W/W 10%	
R30, 31	4,700 ohms 1W carbon	
R32	33 ohms ½W carbon 10%	

All tolerances are ± 20% unless otherwise specified.

#### COILS

No.	Ohms	Description	Code No.
L1	19.6-26.4	B/C aerial coil	CZ.323.026
L2	1.5-2.0		
L3	1.2-1.7	S/W aerial coil	CZ.323.027
L4	<0.5		
L5	0.8-1.2	B/C oscillator coil	CZ.330.613
L6	2.7-3.7		
L7	<0.5	S/W oscillator coil	CZ.330.614
L8	<0.5		
L9	11.5-15.5	1st I.F. transformer	A3.124.25
(177C only)			
L10	11.5-15.5		
L9	4.7-5.2	1st I.F. transformer	A3.126.84
(177D-E only)			
L10	8.0-9.0		

No.	Ohms	Description	Code No.
L11	11.5-15.5	2nd I.F. transformer	CZ.320.434
(177C only)			
L12	11.5-15.5		
L11	8.3-9.2	2nd I.F. transformer	CZ.320.444
(177D-E only)			
L12	4.7-5.2		
L13		Output transformer	type KOL53
L14			
L15		Speaker	type 12M, F25
L16		Speaker	type 5CX, F95
L17		Speaker	type 5CX, F95
L18	315-425	Power transformer	CZ.344.089
L19	<0.5		
L20	26-36		

**IMPORTANT!** In 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.**

**ALIGNMENT.**

During alignment, set volume at maximum and tone control at central position. With the tuning capacitor fully closed, set the dial cursor on the 120 mark of the relocation scale.

**I.F. ALIGNMENT.****Model 177C Only.**

I.F. channel alignment is carried out in the following sequence:—

Connect 100 pF capacitor from plate of 6BH5 to chassis and peak secondary of 2nd I.F.T. (screw nearer 6BD7).

Transfer 100 pF capacitor to 6BD7 diode to chassis position and peak primary of 2nd I.F.T. (screw nearer 6BH5).

Remove the detuning capacitor and peak secondary of 1st I.F.T. (screw nearer 6BH5).

Peak primary of 1st I.F.T. (screw nearer 6AN7).

Repeat operation on 1st I.F.T. ONLY.

**Model 177D-E only.**

I.F. channel alignment is carried out in the following sequence:—

Screw out iron core of 2nd I.F.T. primary (nearer 6BH5) as far as possible. Adjust iron cores for maximum output in the following sequence—

Peak secondary of 2nd I.F.T. (nearer 6BD7).

Peak secondary of 1st I.F.T. (nearer 6BH5).

Peak primary of 1st I.F.T. (nearer 6AN7).

Peak primary of 2nd I.F.T. (nearer 6BH5).

Do not repeat any adjustments.

**R.F. ALIGNMENT.**

The trimmer layout drawing for models 177C-D-E is shown as an inset on the circuit diagram drawing.

B/C band alignment frequencies are: 1,420 kc/s, 3XY (oscillator and aerial trimmers) and 600 kc/s, 7ZL (slug padding with gang rocking).

On the short wave band the oscillator operates on a frequency above signal frequency, so that of the two

signals tunable on the receiver, the high frequency one is correct. In short wave alignment, SW2 band (4.7-9.2 Mc/s) should be done first before attempting alignment of SW1 band.

On SW2 band (4.7-9.2 Mc/s) alignment frequencies are: 4.825 Mc/s (113 on relocation scale), (oscillator coil slug) and 8.9 Mc/s (16 on relocation scale), (oscillator and aerial trimmers). Rock the tuning gang while adjusting the aerial trimmer.

SW1 band (9.1-18.4 Mc/s) alignment frequency is 17.8 Mc/s (small green triangle), (oscillator and aerial trimmers, rock gang while adjusting aerial trimmer). Calibration should be checked at 9.65 Mc/s (small green triangle).

**Do not attempt to adjust the iron cores of the aerial coils.**

**TO REMOVE CHASSIS FROM CABINET.**

Remove the power plug from the mains outlet socket. Remove the four control knobs (a firm pull is all that is necessary). Remove the cabinet back. Remove the aerial and earth terminal panel and unclip the leads from the cabinet.

Remove the pick-up, speaker, gramo. unit power and bezel lamp plugs from their respective sockets. Remove the two screws at the top of the dial back plate and the two screws at the rear of the chassis. The chassis may now be withdrawn from the cabinet.

The replacement of the chassis is a reversal of the above procedure. Care should be taken to see that the front edge of the side chassis flange engages under the lip of the front mounting bracket.

**MAINS VOLTAGE ADJUSTMENT.**

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

**DIAL CALIBRATION.**

In the event of an equal calibration error over the entire dial scale, the dial cursor can be moved on the dial drive cord to correct the error.