



# PHILIPS

## SERVICE NOTES

### RADIO RECEIVER - 910



## SPECIFICATIONS

**MODEL 910:** Is a five tube superheterodyne receiver designed for use on A.C. or D.C. power. It has one tuning range.

**PHILIPS TUBES:** Converter 12SA7GT; I.F. Amplifier 12SK7GT; 2nd Detector & 1st Audio 12SQ7GT; Audio output 50L6GT; Rectifier 35Z5GT.

**TUNING RANGE:**

555 m. to 188 m. — — 540 kc. to 1600 kc.

**INTERMEDIATE FREQUENCY:** 455 kc.

**AUDIO OUTPUT:** .9 Watts undistorted.

**LOUDSPEAKER:** Permanent magnet dynamic; diameter 4 Inches.  
Voice Coil Impedance = 3.2 ohms.

**ANTENNA:** Built in loop antenna with a connection for an outside antenna.

**SUPPLY VOLTAGE:**

The Model 910 is made for operation on 115 Volts AC or DC.

**POWER CONSUMPTION:** 117 Volts — 30 Watts

**CABINET DIMENSIONS:**

**HEIGHT:** 6¼ Inches

**WIDTH:** 9-9/16 Inches

**DEPTH:** 4-9/16 Inches

**CAUTION:** The possibility of accidental electrical shock has been reduced by eliminating a direct connection between the supply and chassis. Use a line isolating transformer while working on the receiver.

**IMPORTANT:** When removing or replacing tubes do so carefully. Place the receiver face down on a piece of heavy cloth and hold the chassis down with one hand while removing the tubes with the other.

**Supply Test Voltage** — 117V. 25/60 Cycles. Values specified were obtained by using a 1000 ohm per volt voltmeter.

All Voltages have been measured to "B" minus. All voltages are D.C. Positive except where noted. All tubes must be in the sockets during tests. Due to supply voltage fluctuations readings may vary  $\pm 10\%$ .

# ALIGNMENT OF RECEIVER

## EQUIPMENT REQUIRED

**SIGNAL GENERATOR:** Capable of supplying modulated frequencies between 455 kc. and 1600 kc.

**OUTPUT INDICATOR:** A high resistance A.C. voltmeter or a power output meter or any output indicating device.

## PRELIMINARY

The chassis must be removed from the cabinet in order to align the receiver. When aligning the I.F. Transformers the position of the loop frame (back cover) with respect to the chassis is not important. When adjusting the oscillator and R.F. trimmers place

the loop approximately 3/4 of an inch back from the rear of the tuning capacitor or make a suitable jig to hold loop antenna in same position as in cabinet.

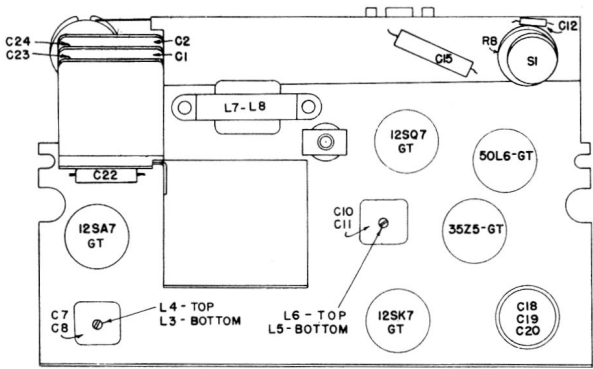
## EQUIPMENT CONNECTIONS

**OUTPUT INDICATOR:** If a power output meter is used adjust it for 4 ohms and connect it across the speaker voice coil. Keep output indication below 50 milliwatts. If an A.C. meter is used connect one meter lead through a .05 mfd capacitor to the green wire on the output transformer and the other lead to the chassis. Never permit the output indication to exceed 18 A.C. volts. Keep volume control in maximum output position. When output indication in-

creases regulate signal generator attenuator to restore the original indication.

**SIGNAL GENERATOR:** Connect the ground lead of the signal generator to B—(any white lead) and the output lead to the points indicated in the chart below. Always use the specified condenser in series with the output lead. Do not connect a grounded lead to B—unless a line isolating transformer is used.

## ALIGNMENT PROCEDURE



For the purpose of alignment the dial background, (painted white) is provided with three Calibration points:

(1) With the tuning condenser closed (maximum capacity) ad-

just the pointer to the extreme left hand marker on the dial background.

(2) Turn the tuning condenser until the pointer is at the extreme right hand marker: \*proceed as follows:

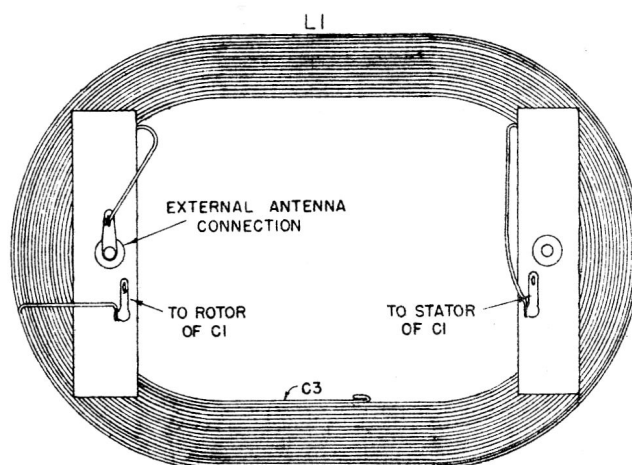
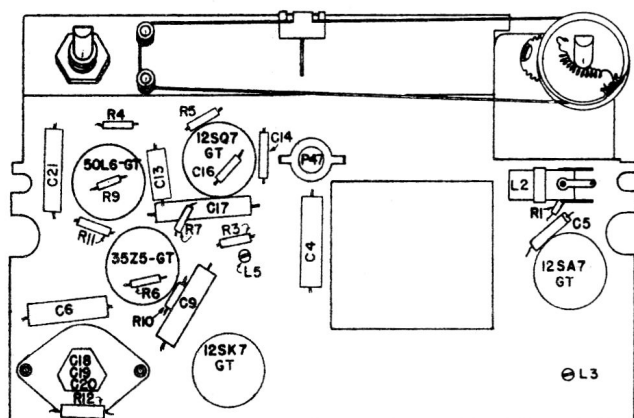
S I G N A L   G E N E R A T O R			R E C E I V E R	
STEPS	Output connection to receiver	Frequency	Pointer setting	Adjust in stated order for maximum output
1	To Pin 8 of 12SA7GT through .1 mfd. capacitor	455 kc.	Extreme Right Hand Marker	I.F. Transformers: L6-L5, L4-L3
2	To antenna lead through 200 mmf condenser	1400 kc.	Extreme Right Hand Marker	OSC Trimmer C24 ANT Trimmer C23

\*NOTE: Second Marker from left hand end is used to check calibration at 600 kc.



# LOCATION OF PARTS

PHILIPS 910



## REPLACEMENT PARTS

FOR DEPENDABLE REPAIRS USE ONLY GENUINE PHILIPS REPLACEMENT PARTS.

When ordering always give description and code number of part and model of receiver.

### CAPACITORS

Symbol	Value	Description	Code No.	List Price
C1	388 uuF (change)	Variable 2-Gang	510-019	3.50
C2	162 uuF (change)	with Drum		
C3		Part of Loop L1		
C4, C6, C9, C22	.025 uuF	600V.	517-617	.35
C5	50 uuF	Ceramic G. P.	514-408	.35
C7	62 uuF	Fixed, Part of L3,		
C8	47 uuF	L4		
C10	83 uuF	Fixed, Part of L5,		
C11	66 uuF	L6		
C12, C14, C16	250 uuF	Ceramic G. P.	514-415	.35
C13	.01 uF	200V.	515-205	.25
C15	.002 uF	600V.	517-603	.35
C17	.01 uF	200V.	517-214	.25
C18	25 uF	25V	516-511	2.50
C19	30 uF	150V		
C20	70 uF	150V		
C21	.01 uF	400V.	517-414	.30
C23		R.F. Trimmer (Part of C1)		
C24		Osc. Trimmer (Part of C2)		

### RESISTORS

Symbol	Value	Description	Part No.	List Price
R1	22,000 ohms	½ watt	501-241	\$ .20
R3	2.2 Megohms	½ watt	501-265	.20
R4	15,000 ohms	½ watt	501-139	.20
R5	4.7 Megohms	½ watt	501-269	.20
R6	100 ohms	½ watt	501-713	.20
R7, R9	470,000 ohms	½ watt	501-257	.20
R8	500,000 ohms	Volume Control	505-019	2.00
R9	470,000 ohms	½ watt	501-257	.20
R10	22 ohms	½ watt	501-705	.20
	150 ohms ±10%	1 watt	502-615	.25
	2,200 ohms ±10%	1 watt	502-129	.25

### COILS AND TRANSFORMERS

		Code No.	List Price
L1	Loop Antenna Assembly	070-093	\$1.45
L2	Oscillator Coil Assembly	070-092	1.45
L3, L4	1st I.F. Transformer Assembly	060-047	2.60
L5, L6	2nd I.F. Transformer Assembly	060-046	2.60
L7, L8	Output Transformer	050-074	2.25

### MISCELLANEOUS PARTS

Description	Code No.	List Price
Loop and Cover Assembly, Complete	120-284	\$1.80
Back Cover only	303-124	.35
Back Cover Split Fastener	560-005	.03
Cabinet, Walnut	030-095	4.50
Cabinet, Ivory	030-096	4.50
Dial Scale Glass	331-066	1.50
Dial Cord per foot	595-003	.05
Dial Cord Spring	310-118	.05
Dial Lamp No. 47	643-002	.15
Dial Light Socket	570-120	.35
Dial Pointer	300-485	.15
Line Cord Assembly	100-001	.75
Knob, Walnut	572-036	.25
Knob, Ivory	572-030	.25
Octal Socket	570-001	.18
On-Off Switch (Part of R8)		
Speaker 4" P.M.	041-041	5.00

### TUBES

12SA7GT	640-008
12SK7GT	640-009
12SQ7GT	640-010
35Z5GT	640-011
50L6GT	640-012