



PHILIPS

SERVICE NOTES

RADIO RECEIVER - 810



SPECIFICATIONS

MODEL 810: 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:

545 m. to 185 m. — — 540 kc. to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

AUDIO OUTPUT: .7 Watts undistorted.

LOUDSPEAKER: Permanent magnet dynamic; diameter 5 Inches.
Voice Coil Impedance = 3.2 ohms.

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

SUPPLY VOLTAGE:

The Model 810 is made for operation on 115 Volts AC or DC.

POWER CONSUMPTION: 117 Volts — 30 Watts

CABINET DIMENSIONS:

HEIGHT: 6 $\frac{3}{4}$ Inches

WIDTH: 9-9/16 Inches

DEPTH: 4-9/16 Inches

WEIGHT:

NET: 4 Lbs. 9 oz.

LEGAL: 4 Lbs. 10 oz.

GROSS: 5 Lbs. 4 oz.

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 $\pm 10\%$.

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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.

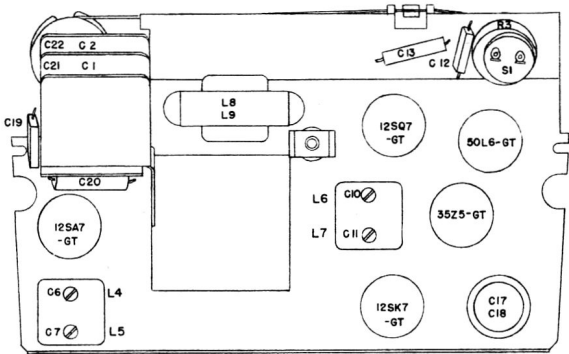
EQUIPMENT CONNECTIONS

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-

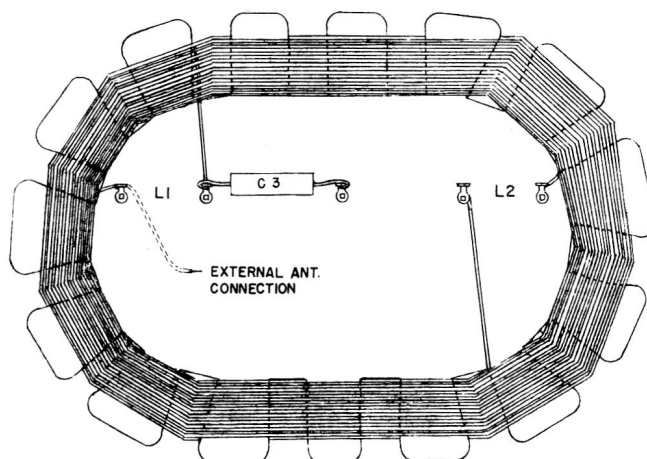
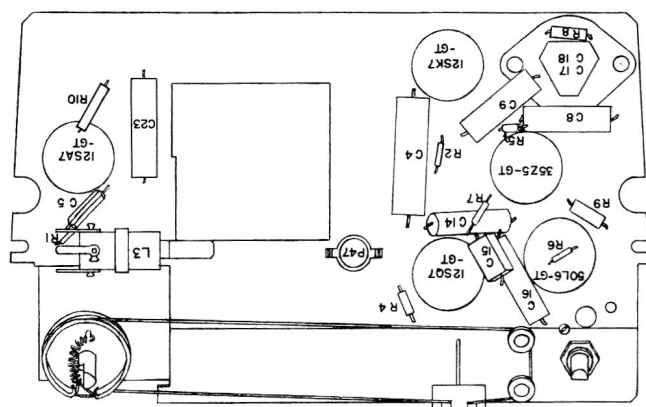
just the pointer to the extreme left hand marker on the dial background.

(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. Trimmers: C10-C11, C6-C7
2	To antenna lead through 200 mmf condenser	1400 kc.	Extreme Right Hand Marker	OSC Trimmer C22 ANT Trimmer C21

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

LOCATION OF PARTS



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			CODE NO.
C1, C2		Tuning Capacitor	G8.475.27
C3	.001 ufd.	600 V.	G8.381.17
C4, C8, C23	.025 ufd.	115 V. A.C.W.	515-104
C5	50 uuf.	Mica	G8.377.25
C6, C7, C10, C11	75-145 uuf.	Trimmer	G8.394.59
C9	.05 ufd.	600 V.	515-608
C12, C15	250 uuf.	Mica	G8.377.31
C13	.002 ufd.	200 V.	G8.452.02
C14	.01 ufd.	200 V.	G8.452.07
C16	.02 ufd.	200 V.	G8.452.09
C17, C18	40-40 ufd.	200 V.	G8.386.26
C19	500 mmf	Mica	512-034
C20	.02 ufd.	600 V.	515-604
C21		R.F. Trimmer	part of G8.475.27
C22		Osc. Trimmer	part of G8.475.27

RESISTORS

R1	22,000 ohms	½ watt	G8.314.41
R2	2.2 Megohm	½ watt	G8.314.31
R3	500,000 ohms	Volume Control	505-016
R4	4.7 Megohm	½ watt	G8.314.33
R5	100 ohms	½ watt	G8.314.06
R6	470,000 ohms	½ watt	G8.314.27
R7	470,000 ohms	½ watt	G8.314.27
R8	2,200 ohms ±10%	1 watt	G8.317.29
R9	150 ohms ±10%	1 watt	G8.317.15
R10	2.2 Megohm ±10%	½ watt B.T.S.	501-165

TRANSFORMERS & COILS

L1, L2	Loop Antenna Assembly	G9.116.39
L3	Oscillator Coil Assembly	G9.139.17
L4, L5	1st I.F. Transformer Assembly	G9.142.42
L6, L7	2nd I.F. Transformer Assembly	G9.142.43
L8, L9	Output Transformer	G9.142.41

MISCELLANEOUS

Back Cover Assembly	120-225
Back Cover Clip	G5.514.20
Cabinet, Walnut	030-079
Cabinet, Ivory	030-080
Dial Glass	331-050
Dial Cord	G8.104.08
Dial Light Socket	G8.001.37
Dial Light P.47	G8.002.08
Dial Pointer	G5.925.67
Line Cord	100-001
Knob, Walnut	G5.483.23
Knob, Ivory	572-030
Octal Socket	G8.532.07
Speaker Assembly	G9.107.23
On-Off Switch (part of Volume Control)	505-016

TUBES

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