

PHILCO RADIO & TELEVISION CORP.

MODEL 14
Voltage,
Chassis view
Socket, Data

PHILCO RADIO MODEL 14 is a nine-tube superheterodyne receiver, designed for operation upon alternating current. The intermediate frequency of the superheterodyne circuit is 175 kilocycles. The frequency range of the receiver is 520-4000 kilocycles, which includes standard broadcast, police, aircraft, and amateur radiophone reception. The tube sequence is: Type 78 tube for radio frequency amplifier, Type 6A7 tube as combination first detector and oscillator, Type 77 for intermediate frequency, Type 42 as Driver—2nd A. F.; two Type 42's as triodes form the class "A" amplifier, and a Type 80 is the rectifier. The power consumption of the Model 14 is 110 watts. The receiver incorporates automatic volume control, four-point bass-compensating tone control, shadow-tuning, and a waveband switch which permits reception over a wide frequency band with the same superheterodyne circuit.

Table 1—Tube Socket Data*—A. C. Line
Voltage 115 Volts.

CIRCUIT	R. F.	Det. Osc. 1st. A. F.	A.V.C.-2nd. Det.	Driver (2nd A. F.)	Output (Class "A")	Rec-tifier
TYPE TUBE	78	6A7	77	42	42	80
Filament Volts—F to F	6.3	6.3	6.3	6.3	6.3	5.0
Plate Volts—P to K	210	210	220	80	205	275
Screen Grid Volts—SG to K (Type 6A7—G3-5 to K)	90	90	90	40	205	280
Control Grid Volts—CG to K (Type 6A7—G4 to K)	4	1	3.2	4	5	28
Cathode Volts—K to F	2.7	2.7	3.2	..	..	..
Type 6A7—G1 to K	..	..	30	..	..	..
Type 6A7—G2 to K	..	..	170	..	..	..

*All the above values were obtained from the underside of the chassis, using test probe and leads with a suitable A. C. voltmeter for filament voltages and a high-resistance multi-range D. C. voltmeter for all other readings. The PHILCO MODEL 048 ALL-PURPOSE SET TESTER IS RECOMMENDED FOR THIS. Volume Control at maximum; station selector at 520 K. C. Readings which are obtained with a plug-in adaptor will NOT be satisfactory.

Table 2—Power Transformer Data

Termi-nal	A. C. Volts	Circuit	Color
1-2	105-125	Primary	White
3-5	6.3	Filament	Black
6-7	5.0	Filament of 80	Blue
8-10	260	Plates of 80	Yellow
4	..	Center Tap of 3-5	Black—Yellow Tracer
9	..	Center Tap of 8-10	Yellow—Green Tracer

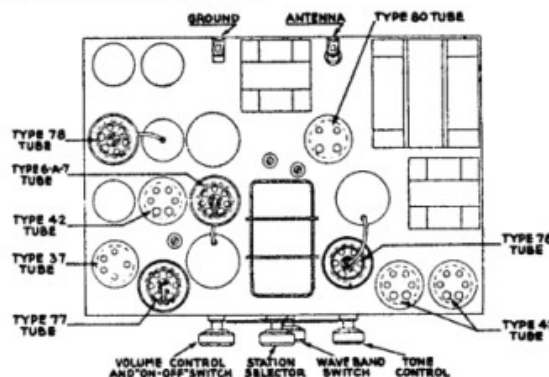


Fig. 1—Top View of Chassis

Adjustment of Model 14

The accurate adjustment of receivers is completed before shipment from the factory. Subsequent adjustments should not be undertaken unless complete instruction has been obtained in the adjustment of the compensating condensers. An accurately calibrated signal generator is necessary, and the PHILCO MODEL 048 ALL-PURPOSE SET TESTER, which contains a precision signal generator, is thoroughly recommended. Philco Service Bulletin No. 120-C, "Adjusting Philco Superheterodynes", outlines the general procedure. The following specifically supplements for Model 14:

Figure 3 of the present Bulletin shows the electrical position of the several compensating condensers; Figure 2, the physical location of those compensating condensers which are mounted upon the underside of the chassis, and at the rear of the chassis sub-base.

The intermediate frequency compensating condensers should be adjusted first. The intermediate frequency is 175 kilocycles. The location of these compensating condensers is: (a) 1st. I. F. PRIMARY—(24)—underneath the chassis. May be reached through hole in chassis sub-base to rear, left, of Tuning Condenser Assembly (5). See Figure 1. (b) 1st. I. F. SECONDARY—(25)—at rear of chassis, and accessible therefrom. Mounted near (26) and (27) electrolytic condensers. (c) 2nd. I. F. PRIMARY—(28)—at rear of chassis. Accessible from rear. Mounted next to (29). (d) 2nd. I. F. SECONDARY—(30)—underneath the chassis. Accessible through hole in sub-base, located between Type 42 (Driver) and Type 77 (1st. A. F.). See Figure 1.

Next, the "OSC.; H. F." (13), "DETECTOR" (10), and "ANT.; H. F." (5) compensating condensers should be adjusted in the order given. (13) and (10) are mounted upon the Tuning Condenser Assembly (5). (5) is located underneath the chassis, accessible through hole in sub-base at rear of Tuning Condenser Assembly (5)—between Tuning Condenser and Type 80 (Rectifier). See Figure 1. The signal generator is adjusted to a frequency of 1500 K. C. for (13), to 1400 K. C. for (10) and (5).

The "OSC.; I. F." (14) compensating condenser is next adjusted. It is located at rear of chassis, inside (20), and toward "GND" terminal of Receiver. The signal generator is set at 600 K. C. for this adjustment. The Tuning Condenser should be "rocked" during this adjustment.

The "Push-on Button" shields covering the holes through which these adjustments are made, must be replaced upon completion of the adjustments.

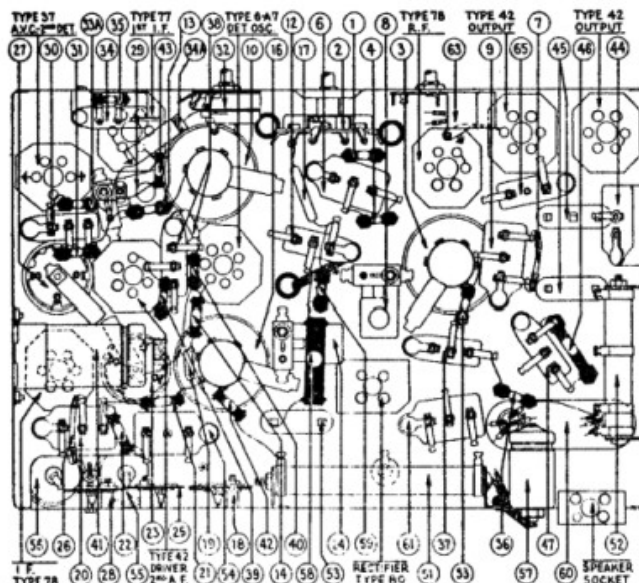
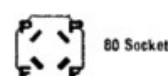
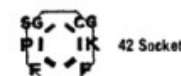
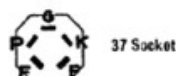
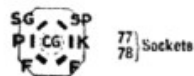


Fig. 2—Bottom View of Chassis Showing Parts



Terminal Arrangement of Tube Sockets Viewed from Under Side of Chassis.