

PHILCO

REG. U.S. PAT. OFF.

Service Bulletin — No. 178

Model 84

THE PHILCO RADIO MODEL 84 is a four-tube superheterodyne receiver, operating upon alternating current and designed for the reception of standard broadcast, and police stations in the two lower police bands. The frequency range is 530-1720 kilocycles. The intermediate frequency is 460 kilocycles. The power consumption is 43 watts. A Type 77 tube is used as a combination first detector and oscillator, a Type 77 as I.F. and second detector, a Type 42 as second A.F. (output), and a Type 80 as rectifier.

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

Circuit	Det. Osc.	2nd Det.	2nd A.F. (Output)	Rectifier
Type Tube	77	77	42	80
Filament Volts—F to F.....	6.3	6.3	6.3	5.0
Plate Volts—P to K.....	240	70	225	340
Screen Grid Volts—SG to K.....	95	23	225	...

*All the above values were obtained from the underside of the chassis, using test prods and leads with a suitable A. C. voltmeter for filament voltages and a high-resistance multi-range D. C. voltmeter for all other values. The Philco Model 048 All-Purpose Set Tester is highly recommended for this use. Volume control at maximum and station selector at 540 K. C. Readings obtained with plug-in adaptor will NOT be satisfactory.

Table 2—Power Transformer Data

Terminal	A. C. Volts	Circuit	Color
1-2	120	Primary	White
3-4	6.3	Filament	Black
6-7	5.0	Filament of 80	Blue
9-10	630	Plates of 80	Yellow
5	Center Tap of 3-4	Black-Yellow Tracer
8	Center Tap of 9-10	Yellow-Green Tracer

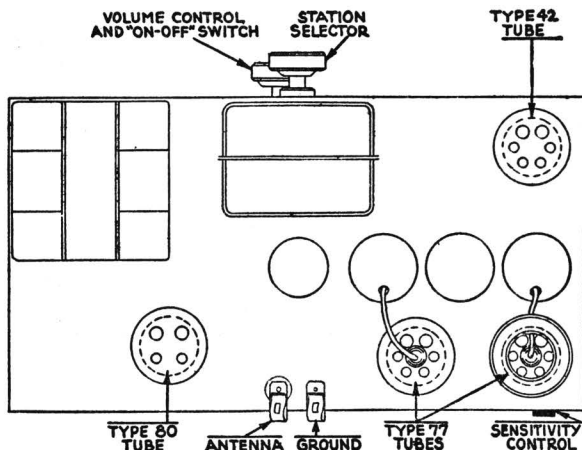


Fig. 1—Top View of Chassis

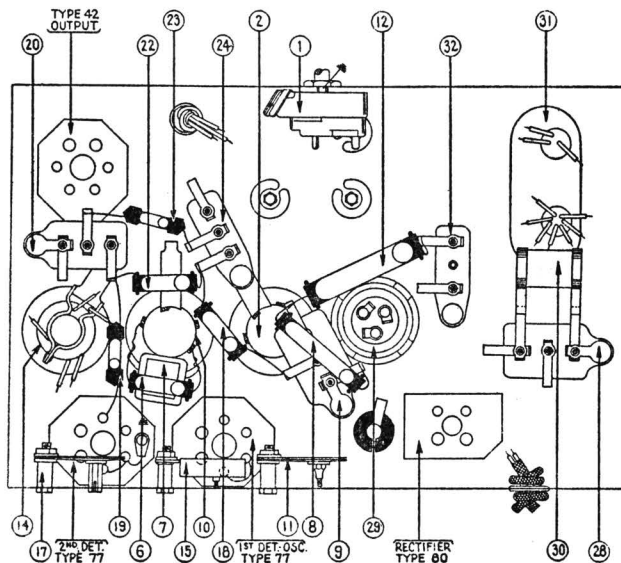


Fig. 2—Bottom View of Chassis Showing Parts

ADJUSTMENT OF MODEL 84

The receivers are accurately adjusted prior to shipment from the factory. Adjustments of the compensating condensers should *only* be undertaken with proper instructions and equipment available. Your distributor can supply both The Philco Model 048 All-Purpose Set Tester is highly recommended. It contains an accurately calibrated signal generator.

The adjustment of the compensating condensers is similar to that outlined in Service Bulletin No. 120-C.

Location of the several compensating condensers can be learned through reference to Fig. 3 for their electrical location in the receiver, and to Fig. 2 for the physical location of the compensating condensers at the rear of the chassis

The I.F. primary and I.F. secondary condensers should be adjusted first. Set the signal generator at 460 KC (the I.F. of Model 84) and the dial pointer at 600. Adjust I.F. condensers ⑪ and ⑫ so that maximum signal is obtained. These condensers are at rear of chassis, accessible from rear.

Next, adjust the "regeneration" condenser. This is ⑰ located at the right hand rear of chassis (facing rear). Adjustment is made by turning the fibre hex nut with either a screw driver or the special fibre wrench. The procedure is: tune in a signal at the high frequency (1500) end of the dial and turn the fibre nut clockwise until oscillation or squealing is heard. Then turn the nut half a turn back (to left). Now tune in a low frequency station, and if squealing is still heard, turn the adjusting nut half a turn back from the squealing point.

The OSC HF ⑬ and ANT compensating condensers ⑥ are adjusted last in the order mentioned. These are located on the tuning condenser gang, the ANT ⑥ being nearest the front of set. In early production sets use the fibre handle screw driver for adjustment, later production, the fibre hex wrench. In making these adjustments, set the signal generator at 1400 and the station selector at 140.



77 Sockets



80 Socket



42 Socket

Terminal Arrangement of Tube Sockets, Viewed From Under Side of Chassis

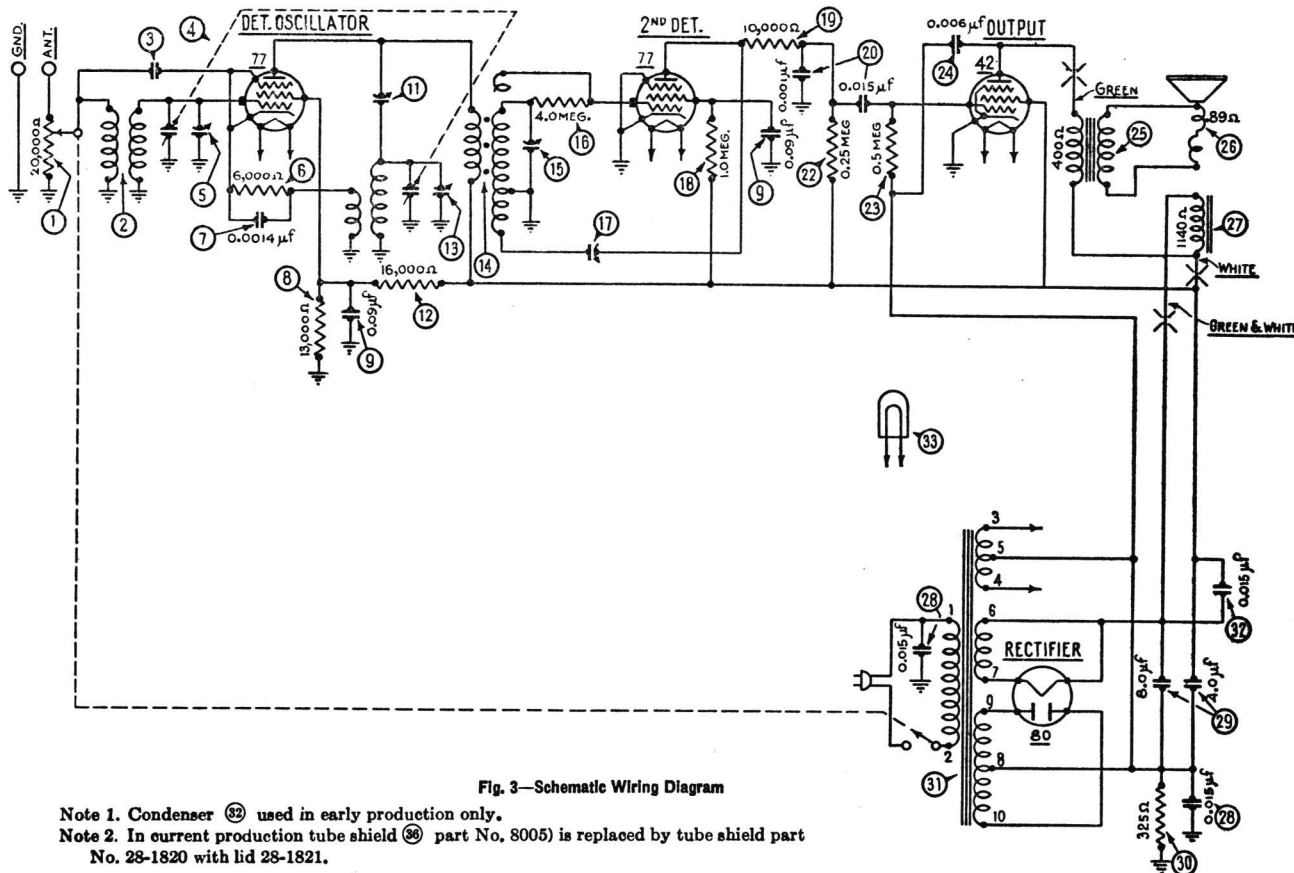


Fig. 3—Schematic Wiring Diagram

Note 1. Condenser 29 used in early production only.

Note 2. In current production tube shield 29 part No. 8005 is replaced by tube shield part No. 28-1820 with lid 28-1821.

REPLACEMENT PARTS FOR MODEL 84

No. on Figs.	Description	Part No.	List Price	No. on Figs.	Description	Part No.	List Price
1	Volume control and on-off switch..	33-5055	1.45	22	Resistor (240000 ohms: Red, yellow, yellow).....	4410	.25
2	Antenna transformer.....	32-1310	.40	28	Resistor (490000 ohms: Yellow, white, yellow).....	4517	.25
3	Condenser—capacity obtained by twisting ends of two leads together.....			24	Condenser .006 mfd.....	7625H	.25
4	Tuning condenser assembly.....	31-1122		25	Output transformer.....	32-7019	1.25
5	Compensator (antenna).....	Part of 4		26	Voice coil and cone assembly.....	36-3014	.60
6	Resistor (6000 ohms: Blue, Black Red).....	7352	.25	27	Field coil and pot assembly.....	36-3243	1.60
7	Condenser (.0014 mfd.).....	7007	.35	28	Condenser (.015—.015).....	3793AD	.40
8	Resistor (13000 ohms: Brown, orange, orange).....	3766	.25	29	Condenser (electrolytic—4.0—8.0 mfd.).....	30-2013	1.95
9	Condenser (double .09 .09 mfd.).....	4989 AK	.40	30	Resistor (wire wound 325 ohms)...	7465	.15
10	Oscillator transformer.....	32-1311	.40	31	Power transformer.....	32-7180	3.60
11	Compensator (I.F. primary).....	04000A	.15	32	Condenser (.015).....	3793-C	.35
12	Resistor (16000 ohms: Brown, blue, orange).....	7500	.25	33	Pilot lamp.....	6608	.11
13	Compensator (OSC HF).....	Part of 4		34	Four prong socket.....	7544	.10
14	I F transformer.....	32-1313	1.05	35	Six prong socket.....	7547	.11
15	Compensator (I.F. sec.).....	0-4000Y	.15	36	Tube shield.....	8005	.06
16	Resistor (4 meg.: Yellow, black, green) inside 19.....	6010	.25	37	Knob.....	27-4038	.10
17	Compensator (regeneration).....	0-4000	.20	38	Pointer.....	27-5007	.30 Per C
18	Resistor (1 meg.: Brown, black, green).....	4409	.25	39	AC cord and plug.....	L-943A	.60
19	Resistor (10000 ohms: Brown, black, orange).....	4412	.25	40	Speaker cord.....	L-1474	.15
20	Condenser (.015-.001).....	7762-B	.30	41	Base shield plate.....	29-1724	.13
				42	Chassis mounting screw.....	W-490	3.60 per C
				43	Chassis mounting washer.....	W-315	.50 per C
				44	Output transformer shield.....	36-3025	.08
				45	Dial scale.....	27-5031	.15
				46			

USE PHILCO REPLACEMENT PARTS AND TUBES FOR EVERY MAKE RADIO.
GET COMPLETE CATALOG FROM YOUR DISTRIBUTOR.

PHILCO RADIO & TELEVISION CORPORATION

Service Department