PHILCO

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Service Bulletin — No. 192

Model 59

Philco Model 59 is a four-tube superheterodyne receiver operating on alternating current, capable of receiving standard broadcasts, and police calls on the first (lowest) police range. The tubes are as follows: Type 77 detector-oscillator, type 77 second detector, type 42 output and type 80 rectifier. The intermediate frequency is 460 K.C. The power consumption of model 59 is 52 watts.

Tube Socket Data—Line 115 Volts

Circuit	Det. Osc.	2nd Det.	Output	Rectifier
Type Tube	77	77	42	80
Filament Volts—F to F	6.3	6.3	6.3	4.8
Plate Volts—P to K	235	45	235	300
Screen Grid Volts—SG to K	110	35	250	....
Control Grid Volts—CG to K	10.5	.25	.25	....
Cathode Volts—K to F	25	15	15	....

Power Transformer Data

Terminal	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	580	Plates of 80	Yellow
4	...	Center Tap of 3-5	Black-Yellow Tracer
9	...	Center Tap of 8-10	Yellow-Green Tracer

*All of the above readings were taken from the underside of the chassis, using test prods and leads with a suitable A. C. voltmeter for filament voltages and a high resistance multirange D. C. voltmeter for all other readings. Volume control at maximum and station selector turned to low frequency end. Readings taken with a plug-in adapter will NOT be satisfactory. The Philco Model 048 All-Purpose Set Tester is recommended for all tests of Model 59.

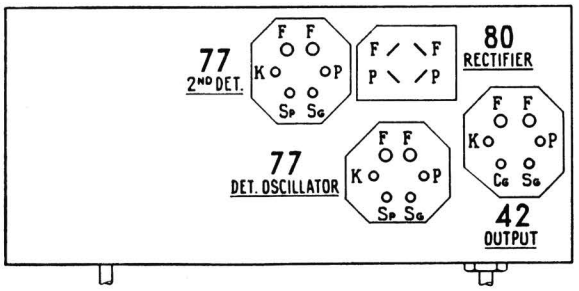

Fig. 1—Tube Socket Layout (Viewed from Bottom)

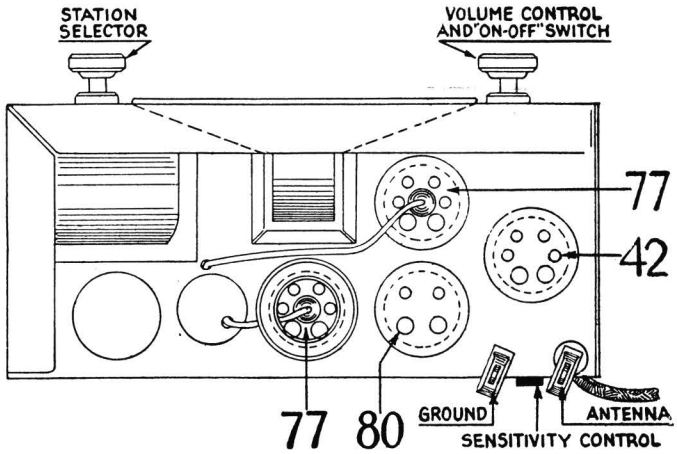

Fig. 2—Top View of Chassis

Adjusting Compensating Condensers

In Model 59 the I. F. primary and secondary condensers and the "regeneration" compensating condenser are located at the rear of chassis and accessible from the rear; the "ANT" and "OSC H. F." are located on the side of the tuning condenser gang.

Referring to Fig. 3, the I. F. primary and secondary condensers ⑧ and ⑮ should be adjusted first. Use an accurate signal generator such as the Philco Model 024. Remove the grid cap clip from the detector-oscillator tube and connect the antenna lead from the signal generator to the cap of this tube. Connect the ground lead from the signal generator to the ground terminal of the set. Connect the primary terminals of the output transformer to an output meter. Set the frequency switch of the signal generator at 460 K.C. (the I. F. of model 59), and turn the switches of the set and signal generator on. Turn volume control full on. Turn the dial pointer on the set to 600, and then adjust the I. F. compensating condensers ⑧ and ⑮ by means of a fibre wrench so that maximum reading is obtained in the output meter. If the needle goes off scale, adjust the attenuator on the signal generator so that a lower reading is obtained.

Next adjust the ANT. and OSC. H. F. (high frequency) condensers ④ and ⑨ located on the tuning condenser gang. To adjust these condensers it is necessary to remove the chassis from the cabinet, necessitating removing back plate, base screws, knobs and pointers. Replace the grid clip on the 77 tube and connect the antenna and ground leads of the signal generator direct to the antenna and ground terminals of the set. Set the signal generator switch at 1400, turn the tuning condenser shaft until the rotary plates barely start to mesh with the stationary ones. Tune in the 1400 K.C. signal here and adjust condensers ④ and ⑨ for maximum output meter reading. When replacing the dial pointer, be sure it is mounted exactly as it was removed.

Finally adjust the regeneration condenser ⑯. With the set connected to an antenna, turn the station selector to receive a station at about 130 on the dial. With a screw driver turn the small fibre hex-head screw (which operates the regeneration condenser) located at rear of chassis below antenna and ground terminals, clockwise until the set squeals or oscillates. Then turn the hex-screw ¼ of a turn back until the squealing stops. Tune in other stations on different points on the scale to make sure that the squealing is eliminated. It will be necessary to readjust this condenser if a different type 77 tube is used for second detector.

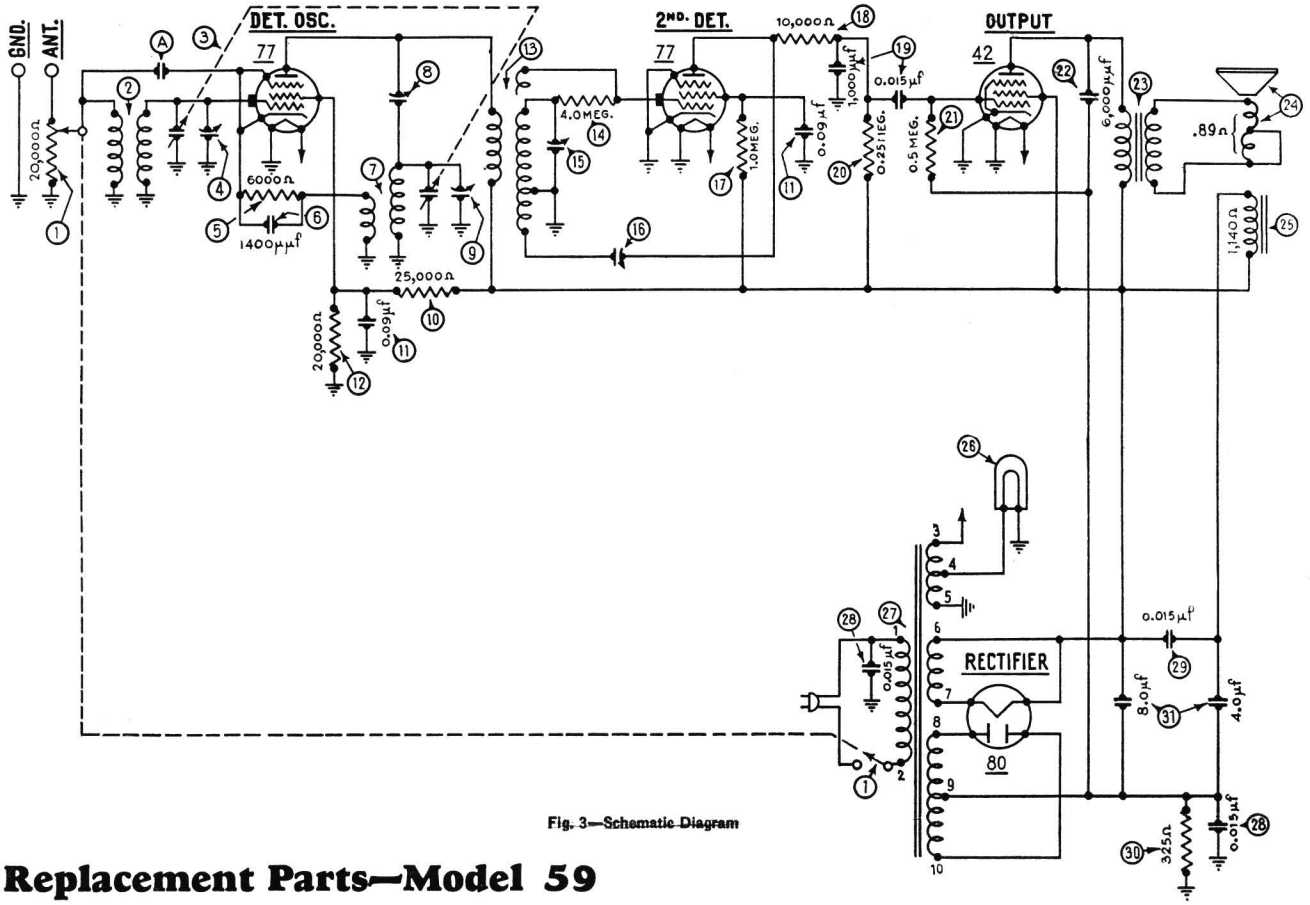

Fig. 3—Schematic Diagram

Replacement Parts—Model 59

No. on Diagram	Item	Part No.	List Price
(1)	Volume Control and On-Off Switch	33-5057	$1.40
(2)	Antenna Transformer	32-1388	.45
(3)*	Tuning Condenser Assembly	31-1190	2.75
(4)*	Compensating Condenser—Ant.	Part of (3)	....
(5)	Resistor (6,000 ohms—Blue-Black-Red)	7352	.25
(6)	Condenser (.0014 Mfd.—Mica)	7007	.35
(7)	Oscillator Transformer	32-1389	.40
(8)	Compensating Condenser (I. F. Primary)	04000-A	.15
(9)*	Compensating Condenser (Osc. H. F.)	Part of (3)	....
(10)	Resistor (25,000 ohms—Red-Green-Orange)	3656	.25
(11)*	Condenser (.09 twin—Black Bakelite)	4989-C	.40
(12)	Resistor (20,000 ohms—Red-Black-Orange)	6650	.25
(13)	I. F. Transformer	32-1155	1.20
(14)*	Resistor (4 Megohms—Yellow-Black-Green)	6010	.25
(15)	Compensating Condenser (I. F. Secondary)	04000-D	.15
(16)	Compensating Condenser (Regeneration)	04000	.20
(17)	Resistor (1 Megohm—Brown-Black-Green)	33-1096	.25
(18)	Resistor (10,000 ohms—Brown-Black-Orange)	33-1000	.25
(19)	Condenser (.015-.0001 Mfd. Block type)	7762-B	.30
(20)	Resistor (250,000 ohms—Red-Yellow-Yellow)	33-1097	.25
(21)	Resistor (500,000 ohms—Yellow-White-Yellow)	6097	.25
(22)*	Condenser (.006 Mfd. Block type)	7625-E	.25
(23)*	Output Transformer	32-7041	.95
(24)*	Voice Coil and Cone Assembly	36-3029	.75
(25)*	Field Coil and Pot Assembly	36-3081	1.75
(26)*	Pilot Lamp	6608	.11
(27)	Power Transformer	32-7064	3.15
(28)	Condenser (.015 Mfd. Twin)	3793-R	.40
(29)	Condenser (.015 Mfd.)	See Note A below	
(30)	Resistor (Wire wound 325 ohms)	7465	.15
(31)	Condenser (Electrolytic 8.0—4.0 Mfd.)	30-2013	1.95
	Tube Shield	28-1107	.10
	Four Prong Tube Socket	7544	.10
	Six Prong Tube Socket	7547	.11
	A. C. Cord and Plug	L-943A	.60
	Dial Scale	27-5023	.15

*Does not show in Fig. 4.

Note A: Condenser (29) not used in production.

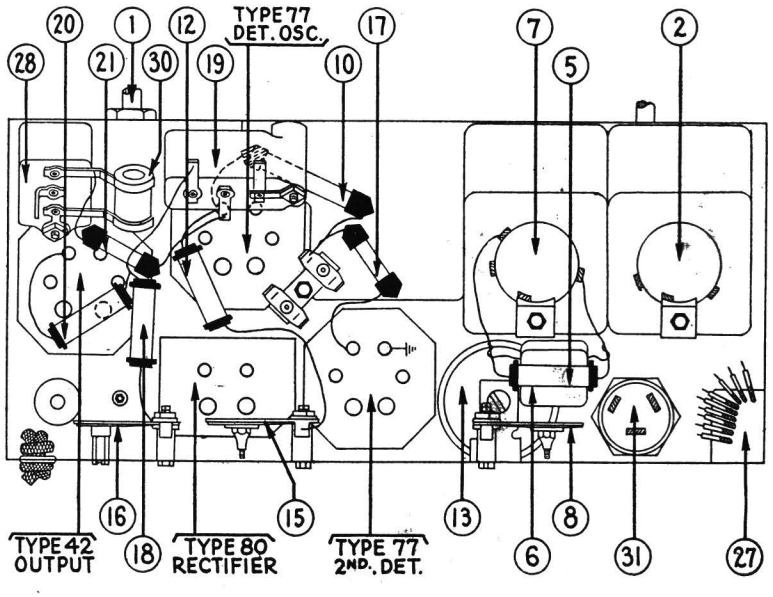

Fig. 4—Base View

PHILCO RADIO & TELEVISION CORPORATION
Service Department

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