

PHILCO

REG. U.S. PAT. OFF.

Service Bulletin—No. 114

Models 51 and 51-A Receivers

Model 51 Receivers are for operation on 100-130 volt, 50-60 cycle AC line
 Model 51-A Receivers are for operation on 100-130 volt, 25-40 cycle AC line

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts	Plate Milli- amperes
Type	Circuit						
24	Osc. & 1st Det.	2.2	220*	85*	9.0*	9.0*	...
35	I.F.	2.2	210	85	3.0	3.0	6.2
24	2nd Det.	2.2	75	54	5.2	5.2	0
47	Output	2.2	210**	240**	0.2**	...	28.**
80	Rect.	5.0	240/Plate	...	...	...	30/ Plate

Note—Volume Control on full; Station Selector turned to Low Frequency End.

*These readings must be taken from the underside of the chassis, using a suitable high resistance D.C. voltmeter equipped with test prods and leads.

**These readings must likewise be taken from the underside of the chassis unless the set tester is especially equipped for testing pentode tubes.

Table 2—Power Transformer Voltages

Terminals	A.C. Volts	Connection	Color
1-2	105 to 125	Primary	Black (Small Gauge)
3-5	2.5	Filament of 24, 35 and 47	Black
6-7	5.	Filament of 80	Light Blue
8-10	700.	Plates of 80	Yellow
4	.....	Center Tap of 3-5	Black, Yellow Tracer
9	.....	Center Tap of 8-10	Yellow, Green Tracer

Table 3—Condenser Data

Nos. on Figs. 1 and 2	Capacity Mfd.	Container
(20) (22)	.00025	Yellow
(10) (36)	.00011	Blue and Golden Yellow
(26) (28)	.01	Black Bakelite Container
(14)	.05	Black Bakelite Container
(28)	.1, .15, .25, 2-.5 (50-60 cy.)	Metal Container
(48)	.2, .15, .25, 2-.5 (25-40 cy.)	Metal Container
(44)	6 (50-60 cycles)	Electrolytic
	10 (25-40 cycles)	Electrolytic
	6	Electrolytic

Table 4—Resistor Data

Nos. on Figs. 1 and 2	Power (Watts)	Resistance (Ohms)	Color		
			Body	Tip	Dot
(34)	...	250 and .05 Mfd.	Black	Bakelite Container	
(13)	.5	1,000	Brown	Black	Red
(35)	.5	8,000	Grey	Black	Red
(21)	.5	10,000	Brown	Black	Orange
(38)	1.	25,000	Red	Green	Orange
(18)	.5	32,000	Orange	Red	Orange
(40)	1.	32,000	Orange	Red	Orange
(37)	2.	51,000	Green	Brown	Orange
(19) (25)	.5	99,000	White	White	Orange
(35)	.5	160,000	Brown	Blue	Yellow
(24) (27) (32)	.5	490,000	Yellow	White	Yellow

PHILCO MODELS 51 AND 51-A

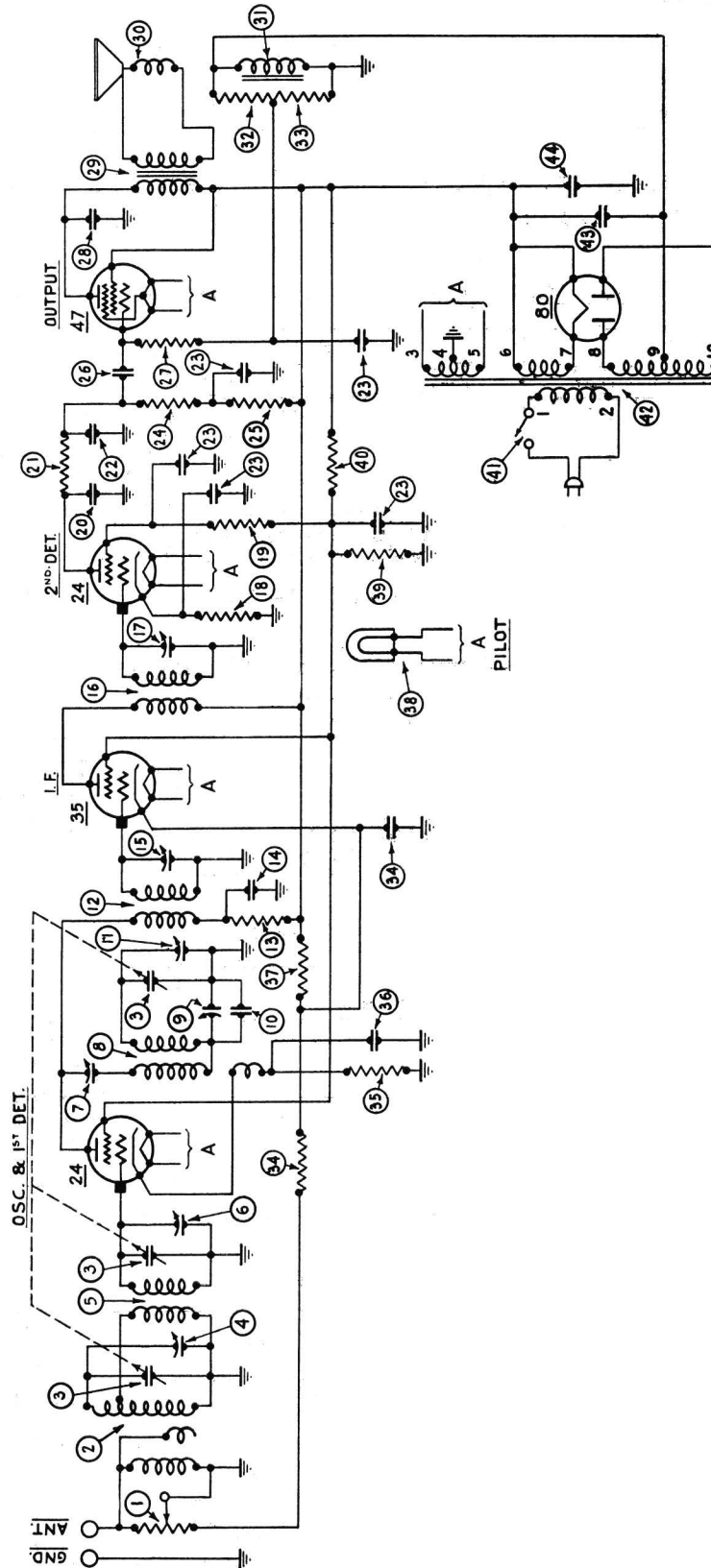


Fig. 1

PHILCO MODELS 51 AND 51-A

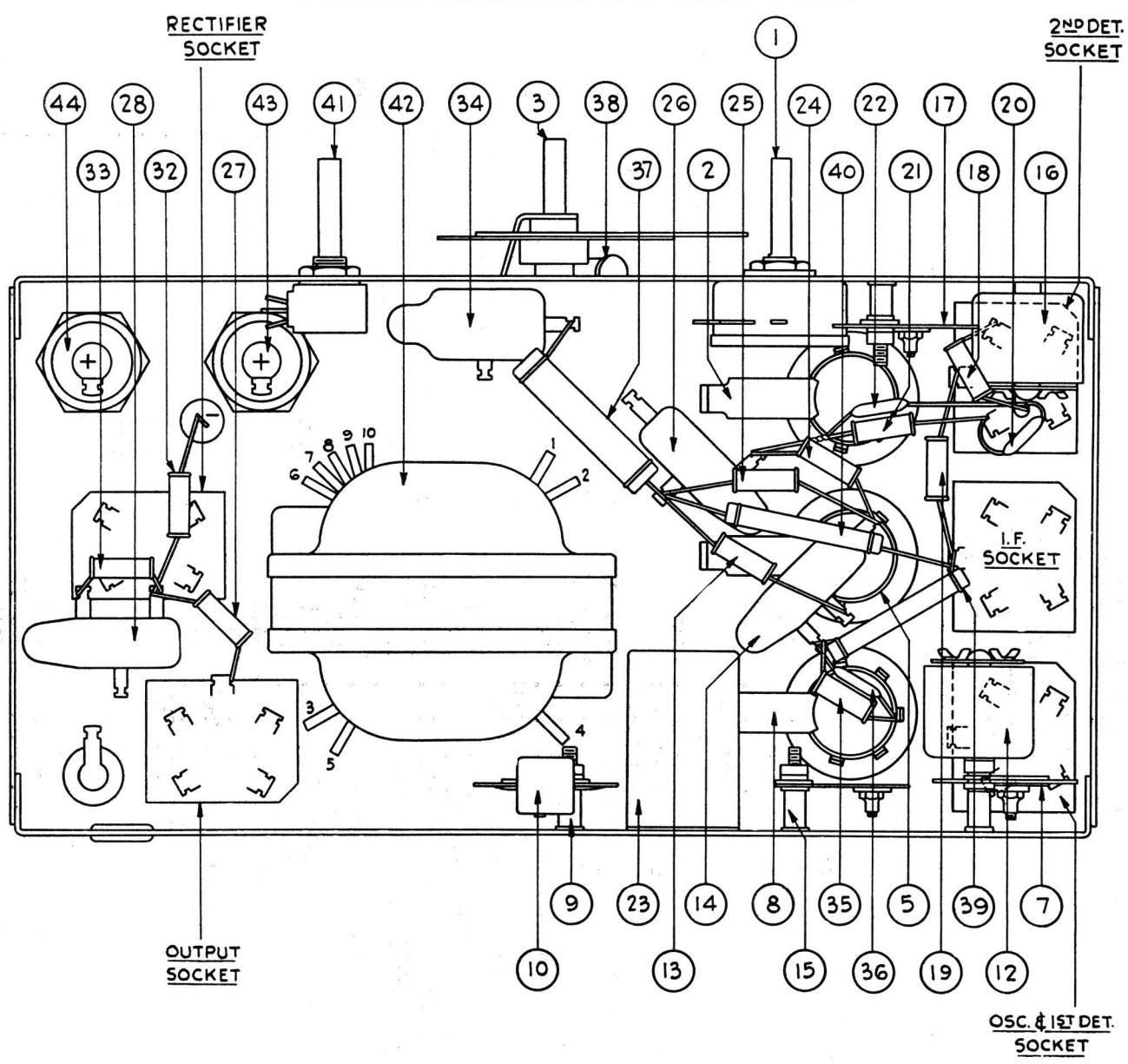


Fig. 2

PHILCO**ADJUSTMENT OF MODELS 51 and 51-A**

These Receivers are accurately adjusted at the Factory prior to their shipment. Under no circumstances are the adjusting condensers to be changed in the field. This alignment requires special oscillator equipment, which all Philco Distributors have. If for any reason the Receiver needs adjustment it must be returned to the Distributor's Service Department.

ARRANGEMENT OF WIRES

The placing of certain wires in the receiver will effect the operation to a marked extent. The red wire from the primary of the first I. F. transformer ⑫, Figs. 1 and 2, to the .05 mfd. condenser ⑭, Figs. 1 and 2, must come straight down to the corner of the I. F. tube socket, then straight up to the condenser lug.

The wire from the plate of the detector-oscillator tube to the coupling compensating condenser ⑦, Figs. 1 and 2, must be away from the chassis at the side.

REPLACEMENT PARTS MODELS 51 and 51-A

No. on Figs. 1 and 2	Description	Part No.	No. on Figs. 1 and 2	Description	Part No.
①	Volume Control	5839	③①	Field Coil and Pot Assembly	02942
②	Antenna Coil	03880	③②	Resistor (490,000 ohms)	4517
③	Gang Condenser	03809	③③	Resistor (160,000 ohms)	5331
④	Compensating Condenser (Part of gang condenser assembly)		③④	Resistor (250 ohms and .05 mfd.)	3615-C
⑤	First R.F. Transformer	03881	③⑤	Resistor (8,000 ohms)	5838
⑥	Compensating Condenser (part of gang condenser assembly)		③⑥	Condenser (710 mmf.)	5863
⑦	Compensating Condenser	04000-A	③⑦	Resistor (51,000 ohms)	5868
⑧	Oscillator Coil	03882	③⑧	Pilot Light	3463
⑨	Compensating Condenser	04000-F	③⑨	Resistor (25,000 ohms)	3656
⑩	Condenser (710 mmf.)	5863	④①	Resistor (32,000 ohms)	3525
⑪	Compensating Condenser (part of gang condenser assembly)		④②	On-off Switch	5382
⑫	First I. F. Transformer	03887	④③	Power Transformer, 50-60 cycles Power Transformer, 25-40 cycles Power Transformer, 50-60 cycles, 230 volts	5266 5267 5268
⑬	Resistor (1,000 ohms)	5837	④④	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
⑭	By-pass Condenser (.05 mfd.)	3615-AC		Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
⑮	Compensating Condenser	04000-D		Electrolytic Condenser (6 mfd.) By-pass Condenser (across power line) .01 mfd. double, Colonial Clock only	4916 3903-S
⑯	Second I.F. Transformer	03886		Clock Unit (60 cycles) Model 551	5950
⑰	Compensating Condenser	04000-D		Clock Glass Model 551	5942
⑱	Resistor (33,000 ohms)	5279		Tube Shield	04011
⑲	Resistor (99,000 ohms)	4411		Knob (Large)	03064
⑳	Condenser (250 mmf.)	5858		Knob (Small)	03437
㉑	Resistor (10,000 ohms)	4412		Grid Clip	4897
㉒	Condenser (250 mmf.)	5858		Five Prong Socket Assembly	4956
㉓	Condenser (.1, .15, .25, 2-.5) 50-60 cycles	03915		Four Prong Socket Assembly	5026
	Condenser (.2, .15, .25, 2-.5) 25-40 cycles	03945		Pilot Light Bracket Complete	03814
㉔	Resistor (490,000 ohms)	4517		Dial Complete	04031
㉕	Resistor (99,000 ohms)	4411		Bezel	5879
㉖	Condenser (.01 mfd.)	3903-N		Spring (Large)	5262
㉗	Resistor (490,000 ohms)	4517		Spring (Small)	4147
㉘	Condenser (.01 mfd.)	3903-K		Scroll (Model 551)	44613
㉙	Output Transformer	2660		Turnings (3 used) Model 551	44607
㉚	Voice Coil and Cone Assembly TYPE "S" (Large)	02887			
	TYPE "P" (Small)	02861			

PHILCO**Service Department**