PHILCO . . . . RADIO SERVICE BULLETIN No. 353

RADIO MANUFACTURERS SERVICE — Your Guarantee of Best Radio Service — A PHILCO SERVICE PLAN

Models 41-250, 41-255; Code 121

SPECIFICATIONS

Models 41-250 and 41-255 are alternating current (A. C.) operated super-heterodyne radios incorporating Electric push-button and Manual tuning, and the New Philco built-in American and Overseas loop aerial system. In addition these models are designed to receive the sound of a television program tuned in by special type Philco Television Radios.

In general, these models are similar with the exception of the **audio circuits, number of tubes** used and **cabinet design.** Model 41-250 is an eight (8) tube radio; and Model 41-255 consists of a nine (9) tube chassis. These differences are shown in the schematic diagram and parts lists.

Other features of design included in these models are: Three tuning ranges covering the frequencies listed below; continuously variable tone control; audio bass frequency compensation; push-pull pentode and illuminated push-button controls.

ELECTRIC PUSH-BUTTON TUNING: The automatic tuning mechanism of each model is identical and consists of eight (8) electric tuning push-buttons, seven (7) of the push-buttons are used for selecting broadcast stations, and one as the power control (On-Off switch).

The lowest frequency station push-button labeled "Television" can be adjusted for reception of the sound channel of a television program received by Philco television sets. This push-button may also be used in conjunction with a Philco Wireless Record Player. Instructions for adjusting the push-buttons are the same as that given for Model 41-280 in Radio Service Bulletin No. 352.

AERIAL CONNECTIONS: The built-in loop aerial system is designed to operate without an outside aerial or ground, and to give exceptionally high receiving performance of stations on standard and shortwave frequencies. Another feature is its noise-reducing characteristic. The loop can be turned to the position in which it picks up a minimum amount of interference, or to the position where best reception is obtained.

To operate the radio in steel reinforced buildings and other shielded locations, where signal strength is weak, the Philco 1941 Outdoor Aerial Part No. 45-2817, is recommended for maximum receiving performance. The outdoor aerial can be easily connected to the radio by inserting the plug attached to the transformer unit into the socket provided at the rear of the Radio chassis. This aerial can be obtained from your local Philco distributor. A ground connection is not required with either type of installation.

POWER SUPPLY: 115 volts, 60 cycle A. C.
These models can also be operated on 25 cycle current. To do this it is necessary to replace the power transformer with a 25 cycle as indicated in the parts lists.

POWER CONSUMPTION:

FREQUENCY TUNING RANGES: 540 to 1720 K. C.: 2.2 to 7.0 M. C.: 9.0 to 12.0 M. C.

INTERMEDIATE FREQUENCY: 455 K. C.

AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: Model 41-250; XXL, R. F. mixer; XXL, Oscillator; two 7B7, I. F. amplifiers; 7C6, 2nd detector; 1st audio, A. V. C.; two 41 audio output, and an 84 rectifier.
Model 40-255; XXL, R. F. mixer; XXL, oscillator; 2 7B7, I. F. amplifiers; 7A6, 2nd detector; 7C6 1st audio, A. V. C.; two 41 audio output, and an 84 rectifier.

CABINET DIMENSIONS:

Model	Height	Width	Depth
41-250	11"	19"	13"
41-255	10¾"	19⅜"	13⅞"

ALIGNING R. F. AND I. F. CIRCUITS

The Procedure for aligning the R. F. and I. F. Circuits of these Models is the same as that given in Radio Service Bulletin No. 352, for Models 41-280, and 41-285. The Locations of the Compensating Condensers are shown on the Schematic Diagram.

REPLACEMENT PARTS

SCHE. No.	DESCRIPTION	PART No.
1	Loop Aerial	76-1090
2	Compensator (Aerial 12 M. C.)	31-6308
3	R. F. Transformer (Broadcast)	31-3485
3A	R. F. Transformer (Police) Part of 3	
4	Mica Condenser (250 Mmfd.)	60-125157
5	Resistor (2.2 Megohms)	33-522339
6	Condenser (.05 mfd., 200 volts)	30-4519
7	Mica Condenser (15 Mmfd.)	60-015337
8	R. F. Transformer (S. W.)	32-3481
9	Silver Mica Condenser (98 Mmfd.)	30-1186
10	Tuning Condenser	31-2482
11	Push-button Switch	42-1587
12	Padder Strip (Push-buttons)	31-6366
13	Oscillator Transformer	32-3478
14	Resistor (22,000 ohms)	33-322339
15	Resistor (4700 ohms)	33-247339
16	Compensator Dual (1500 K. C. Osc.)	31-6298
16A	Compensator (6 M. C. Part of 16)	
17	Compensator Dual (580 K. C.)	31-6355
17A	Compensator (12 M. C. Osc. Part of 17)	
18	Mica Comp. (1600 Mmfd.)	60-216324
19	Silver Mica Condenser (84 Mmfd.)	30-1181
20	Osc. Trans. Assem (7 coils, Push-buttons)	32-3486
20A	Coils 1, 2, 3, 4, 5, of Assembly (20)	32-3042
20B	Coils 6, 7 of Assembly (20)	32-3041
	Iron Core	28-6916
	Coil Mounting Spring	28-8910
	Centering Cup	28-6936
21	Mica Condenser Dual (370 Mmfd)	30-1183
21A	Part of 21 (370 Mmfd)	
22	Resistor (10,000 ohms)	33-310339
23	Resistor (22,000 ohms)	33-322339
24	Mica Condenser (250 Mmfd)	60-125157
25	Mica Condenser (250 Mmfd)	30-1155
26	Resistor (33,000 ohms)	33-333339
27	Electrolytic Cond. (8-16 mfd., 400 volts)	30-2475
28	Resistor (18,000 ohms)	33-318339
29	Resistor (2.2 megohm)	33-522339
30	Resistor (4700 ohms)	33-247339
31	Condenser (.05 mfd., 400 volts)	30-4518
32	1st I. F. Transformer	32-3482
33	Condenser (.05 mfd., 200 volts)	30-4519
34	2nd I. F. Transformer	32-3483
35	Resistor (330 ohms)	33-133336
36	Condenser (.05 mfd., 200 volts)	30-4519
37	3rd I. F. Transformer	32-3484
37A	Resistor (47,000 ohms, Part of 37)	33-347339
37B	Mica Condenser (100 Mmfd. Part of 37)	
37C	Mica Condenser (100 Mmfd. Part of 37)	
37D	Compensator (Part of 37)	
37E	Mica Condenser (100 Mmfd)	60-110157
38	Condenser (.01 mfd., 400 volts)	30-4572
39	Resistor (470,000 ohms)	33-447339
40	Mica Condenser (50 Mmfd)	60-050137
41	Resistor (33,000 ohms)	33-333339
42	Volume Control	33-5408
43	Condenser (.01 mfd., 400 volts)	30-4572
44.	Tone Control	33-5403
45	Condenser (.01 mfd., 400 volts)	30-4572
46	Resistor (1 megohm)	33-510339
47	Resistor (470,000 ohms)	33-447339
48	Resistor (10 megohms)	33-610339
49	Condenser (.003 ohms, 1000 volts)	30-4469
50	Resistor (220,000 ohms)	33-422339
51	Mica Condenser (100 mmfd.)	60-110157
52	Condenser (.01 mfd., 400 volts)	30-4572
53	Resistor (470,000 ohms)	33-447339
54	Resistor (470,000 ohms)	33-447339
55	Condenser (.01 mfd., 400 volts)	30-4572
56	Resistor (3900 ohms)	33-239339
57	Condenser (.003 mfd., 400 volts)	30-4469
58	Output Transformer	32-8120
59	Cone Assembly (for Speaker 36-1483-2	36-4127
	Cone Assembly (for Speaker 36-1483-4	36-4135
60	Field Coil (Replace Speaker)	
61	Resistor (15-31-146 ohms)	33-3393
62	Electrolytic Condenser (12 mfd.)	30-2474
63	Power Transformer (110 volts, 60 cycle)	38-8121
64	A. C. Switch	42-1626
65	Condenser (.01-01 mfd)	39030DG
66	Pilot Lamps (Indicator, Push-button)	34-2064
	Pilot Lamp (Dial)	34-2210
67	Resistor (1.8 ohms)	33-918336
68	Condenser (.003 mfd., 400 volts)	30-4469
69	Range Switch	42-1586

SCHE. No.	DESCRIPTION	PART No.
	MISCELLANEOUS PARTS	
	Bezel	27-4985
	Cabinet (Model 41-250T)	10486A
	Cabinet (Model 41-255T)	10493A
	Clip (Osc. coil Mtg.)	28-5003
	Clip (Aerial coil Mtg.)	28-5002
	Dial Scale	27-5655
	Dial Background (Paper)	27-9690
	Dial Scale Rubber Channel (2 req.)	27-4854
	Dial pointer	56-1516
	Dial Tuning Shaft Assembly	38-9874
	"C" washer (Tuning shaft)	28-2043
	Spring washer (Tuning shaft Mtg.)	56-1659
	Drive Cord	31-2502
	Drum and Hub Assembly (Drive cord)	38-9856
	Knob Assembly (Tuning Volume)	27-4987
	Knob (Push-buttons)	54-4009
	Speaker	36-1483
	Spring (Dial background Mtg.)	28-8908
	Spring (Drive cord)	28-8913
	Socket Assembly (Pilotlight-push-button	38-9607
	Socket Assembly (Band indicator)	76-1079
	Socket Assembly (Dial lighting)	76-1080
	Socket (84 tube)	27-6035
	Socket (41 tubes)	27-6036
	Socket (XXL Oscillator)	27-6129
	Socket (Loktal tubes)	27-6131
	Socket (Aerial)	27-6145
	Tab (Television)	27-5648
	Tab (OFF-ON)	27-5647
	Tab Cover	27-5629
	Tab Kit	40-6595
	MOUNTING PARTS	
	Felt Strip (Push-buttons)	27-9689
	Palnut (Range Switch)	W-2157
	Rubber Grommet (tuning cond. Mtg.)	27-4596
	Rubber Washer (Chassis Mtg.)	27-4571
	Rubber Corner (Chassis)	27-4564
	Screw (P. B. Switch Mtg.)	W-523
	Screw (Chassis Mtg.)	W-1345
	Screw (Bezel Mtg.)	W-2073, FB26
	Sleeve (P. B. Switch Mtg.)	56-1505
	Washer (Speaker Mtg.)	27-7467
	Washer (Chassis Mtg.)	28-5114

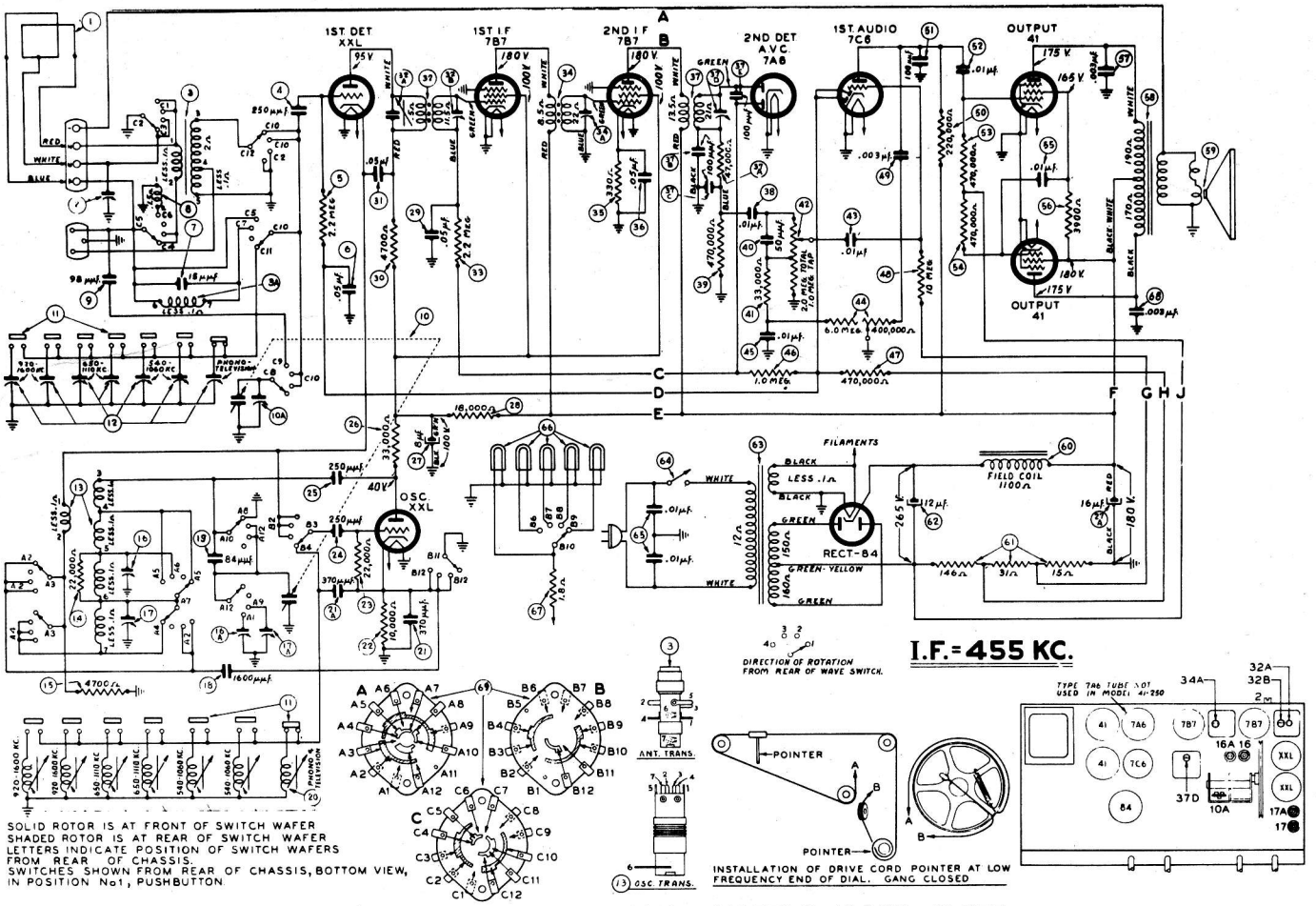

FIG. 1 — SCHEMATIC DIAGRAM — MODELS 41-250, 41-255

The above diagram is the complete electrical circuit for Model 41-255. The same general circuit is also used in Model 41-250 with the exception of the 2nd detector, 1st audio, A. V. C. wiring which is shown in Fig. 4.

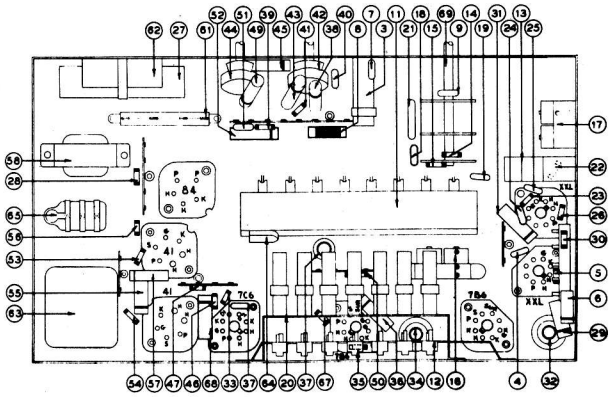

FIG. 2 — LOCATIONS OF PARTS AND TUBES UNDERSIDE OF CHASSIS — MODEL 41-250

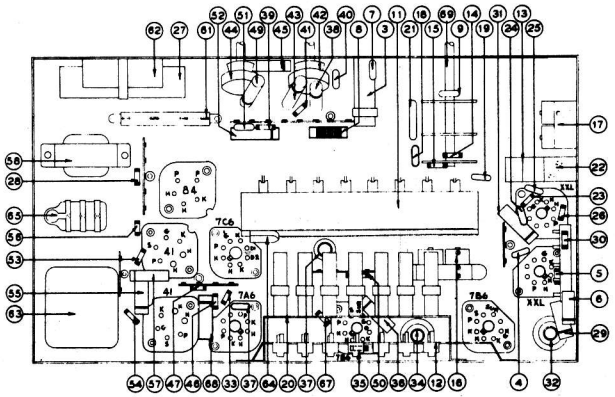

FIG. 3 — LOCATIONS OF PARTS AND TUBES UNDERSIDE OF CHASSIS — MODEL 41-255

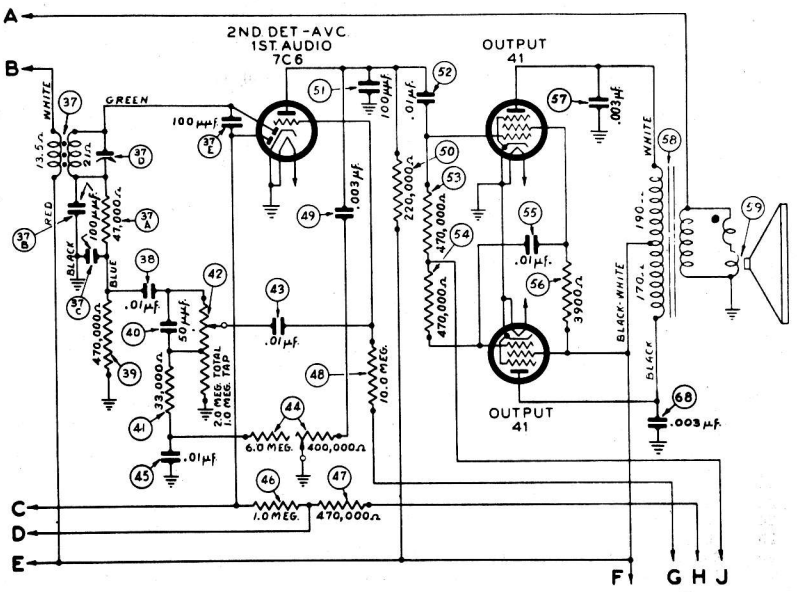

FIG. 4 — 2ND DETECTOR AND AUDIO CIRCUIT MODEL 41-250