



MODELS 34 and 41

SPECIFICATIONS

Models 34 and 41

TYPE OF CIRCUIT: Model 34 is a seven (7) tube A.C. operated super-heterodyne radio with electric push button tuning. In addition, the radio employs the Philco Built-in Domestic and Overseas Aerial system for operation without an outside aerial. Provisions are also provided for an outside aerial for sections where signal strength is weak, such as in steel reinforced buildings and other shielded locations. For installations of this type the Philco 1941 Auxiliary Aerial, Part No. 45-2817, is recommended. This aerial can be conveniently connected to the radio by inserting the plug attached to the transformer unit into the socket provided at the rear of the chassis. A ground is not required with either type of installation. Other features of design included in the radio are three tuning ranges; covering standard, police, and shortwave frequencies; two I.F. stages, Philco loktal tubes; variable tone control; automatic volume control; and a pentode audio output stage. Six (6) electric tuning push buttons are provided for automatically selecting stations. Five of the push buttons are used for broadcast stations, and one for turning the power of the set "off".

TUNING RANGES:

540 to 1720 K.C.; 2.0 to 7.0 M.C.; 9 to 12.0 M.C.

INTERMEDIATE FREQUENCY: 460 K.C.

POWER SUPPLY: 115 volts A.C., 60 cycles, 115 volts A.C., 25 cycles.

AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: One XXL, 1st detector; one XXL, oscillator; one 7B7E 1st I.F.; one 7B7E 2nd I.F.; one 7C6, 2nd detector, 1st audio, A.V.C.; one 7B5E audio output and a 7Y4 rectifier.

CABINET DIMENSIONS:

Height, 11 $\frac{1}{4}$ "; Width, 16 $\frac{1}{2}$ "; Depth, 9 $\frac{1}{8}$ ".

Model 41 is a seven (7) tube alternating current (A.C.) operated super-heterodyne radio incorporating electric push button in addition to manual tuning—and the new Philco built-in Domestic and Overseas loop aerial system. This model is also designed to receive the sound of a television program tuned in by special type Philco Television Radios.

Model 41 consists of three (3) tuning ranges covering 540 to 1720 K.C., 2.0 to 7.0 M.C. and 9.0 to 12 M.C.

Other features of the design are: Continuously variable tone control; A.V.C.; pentode audio output and a tuning band indicator.

POWER SUPPLY: 115 volts, 25 cycle A.C.; 115 volts, 60 cycle A.C.

POWER CONSUMPTION: 45 watts.

INTERMEDIATE FREQUENCY: 460 K.C.

AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: XXL, R.F. Mixer; XXL, Oscillator; two 7B7E I.F. Amplifiers; 7C6, 2nd Detector, 1st Audio, A.V.C.; 41E Audio Output and 84, Rectifier.

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 Auxiliary 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.

CABINET DIMENSIONS: Height 37 $\frac{1}{2}$ ", width 26 $\frac{3}{8}$ ", depth 11".

PROCEDURE FOR SETTING AND OPERATING THE ELECTRIC PUSH BUTTON TUNING

The automatic tuning mechanism of this model consists of six (6) electric tuning push buttons, five (5) of the push buttons are used for selecting broadcast stations, and one as the power control (Off switch).

Select five of your favorite nearby broadcast stations and

remove their call letters from the station call letter tab sheets supplied. Place each call letter tab in the tab space above each button which includes the frequencies of the desired stations. The frequency range of the buttons and corresponding padders is as follows:

Padders (right to left from rear)	Circuit	Buttons (left to right from front)	Frequency Range
—	—	1	Off Switch
1	Ant }	2	540 to 980 kilocycles
2	Osc }		
3	Ant }	3	540 to 980 kilocycles
4	Osc }		
5	Ant }	4	710 to 1185 kilocycles
6	Osc }		
7	Ant }	5	850 to 1600 kilocycles
8	Osc }		
9	Ant }	6	1185 to 1720 kilocycles
10	Osc }		

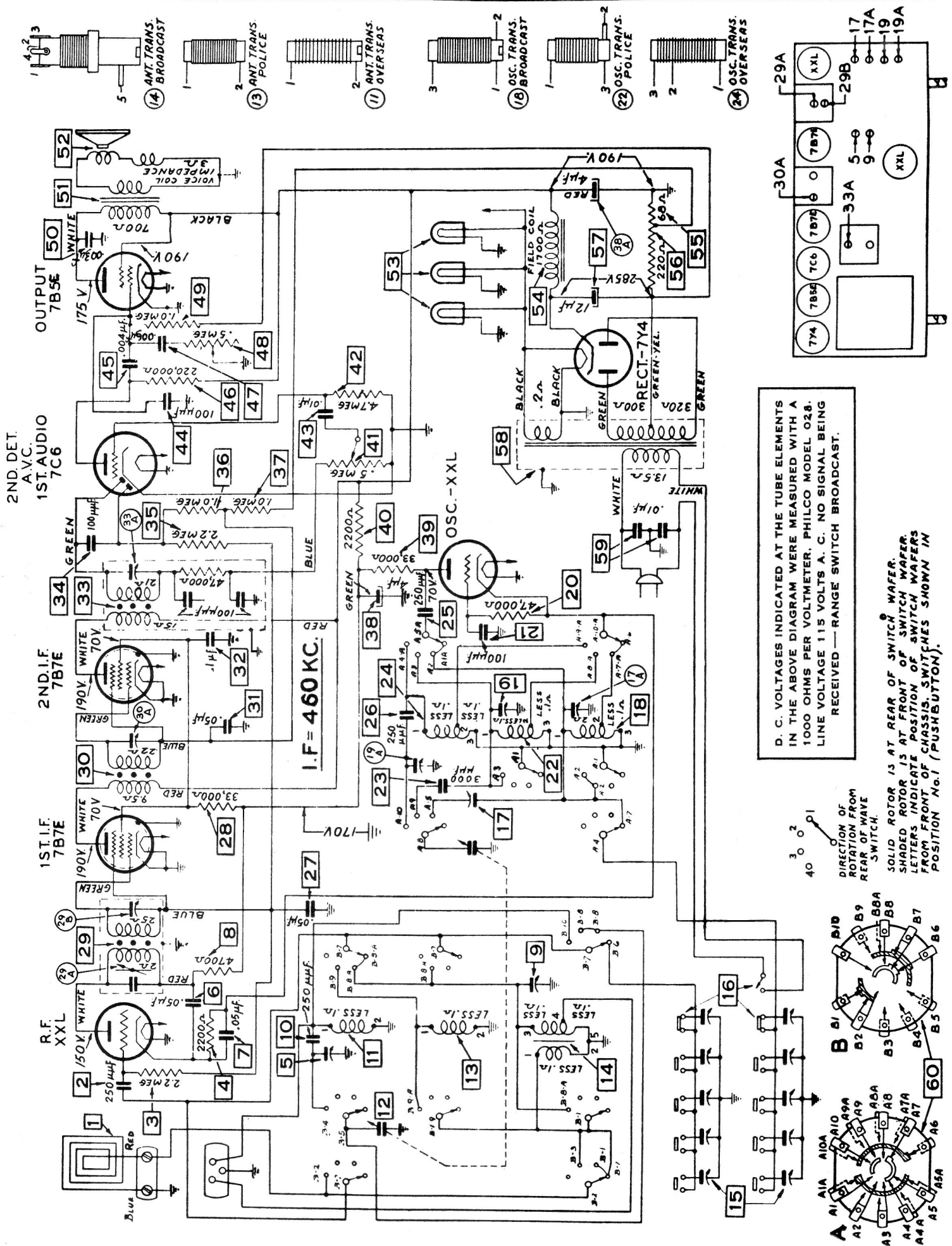
The second button from the left looking at the front of the cabinet corresponds to the two right-hand padder screws looking at the rear and covers the lowest frequency range.

With the "Tuning Range Selector" in broadcast position, tune in the station whose call letters appear above the second button. Then depressing the second button, tune in this station by rotating the No. 2 "OSC" screw (next to the right end of the unit looking at the rear of the chassis). (NOTE: Inherent characteristics of these padders may cause some of them to cover a lower range than required to cover the broadcast band. This may cause the radio to howl or flutter when a station button is depressed. To correct this, loosen the "ANT" padder corresponding to the depressed station button.) Turn the "OSC" screw slowly and listen carefully or the station may be passed without noticing it. After the "OSC" screw has been adjusted for maximum volume, the corresponding "ANT" screw should be adjusted for maximum. For some

stations, it may be necessary to readjust the "OSC" screw after the "ANT" screw has been set. Switching the "Tuning Range Selector" from broadcast position to the automatic push button position will enable you to make sure you have the correct station tuned in. When the first station has been set, the same procedure should be followed for the remaining buttons, first tuning in the desired station by means of the Station Selector.

To tune the set with the "Push Buttons", turn "Tuning Range Selector" to push button position and press in the button which corresponds to the call letters of the desired station. The volume of the program may be controlled with the manual volume control.

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, when these are available.

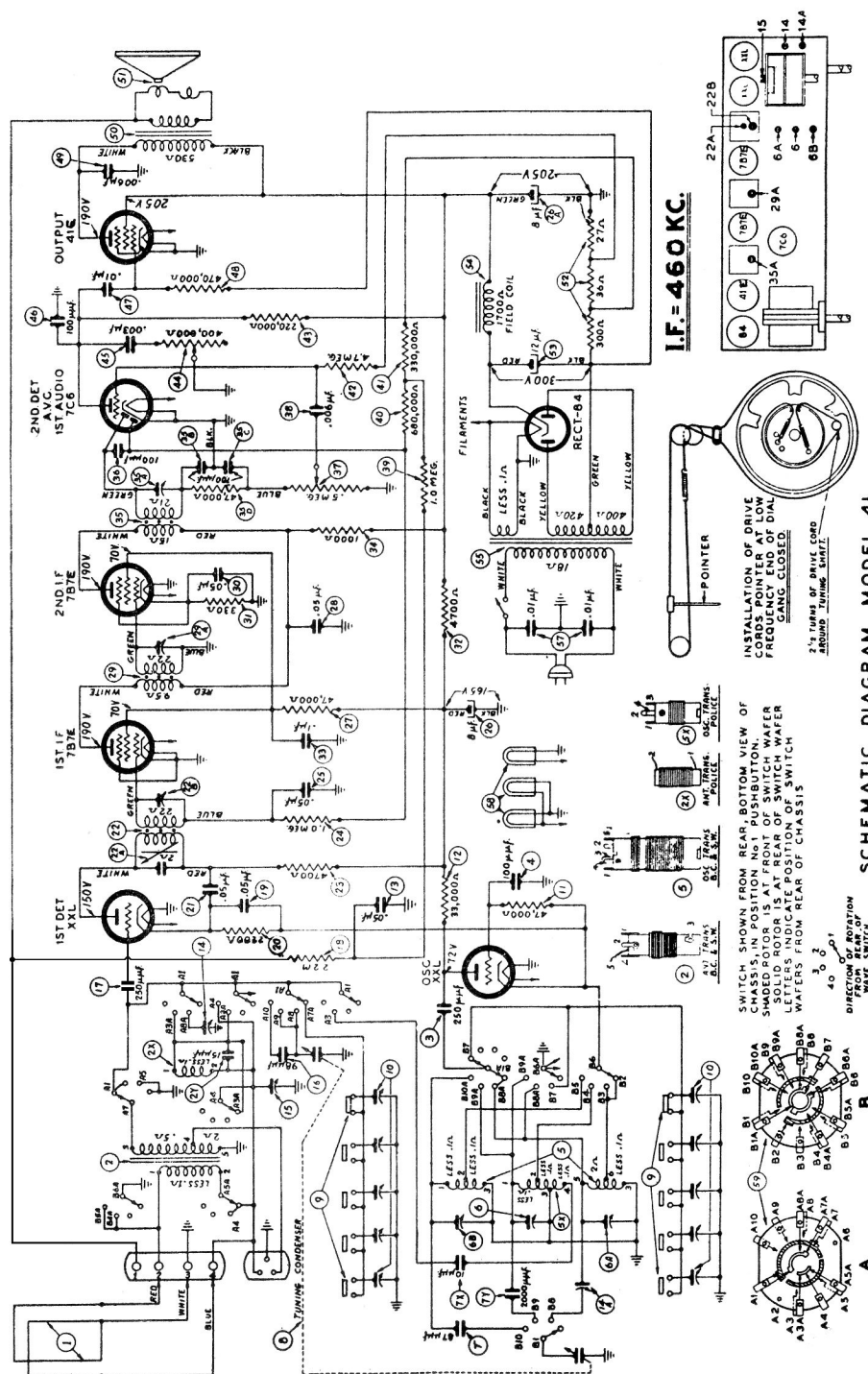


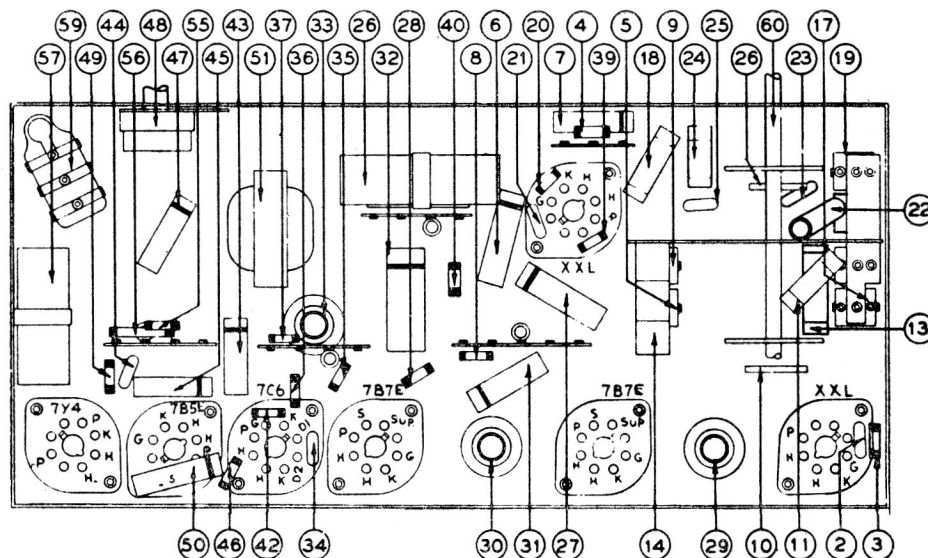
REPLACEMENT PARTS LIST — PHILCO MODEL 34

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Loop Assembly	76-1092	27	Tubular Cond. (.05 mfd. 200 volts)	30-4519	54	Field Coil	32-9578
2	Mica Condenser (250 mmfd.)	60-125157	28	Resistor (33,000 ohms, 1/2 watt)	33-333344	55	Resistor (68 ohms, 1/2 watt)	33-068344
3	Resistor (2.2 Megohm, 1/3 watt)	33-522244	29	1st I.F. Transformer	32-3465	56	Resistor (220 ohms 1 watt)	33-122436
4	Resistor (2200 ohms, 1/2 watt)	33-222344	30	2nd I.F. Transformer	32-3466	57	Electrolytic Condenser (12 mfd.)	30-2483
5	Padder (Aerial S.W.)	31-6373	31	Tubular Cond. (.05 mfd. 200 volts)	30-4519	58	Power Trans. (110 volts, 60 cycle)	32-8064
6	Tubular Cond. (.05 mfd. 400 volts)	30-4518	32	Tubular Cond. (.1 mfd. 400 volts)	30-4455		Power Trans. (110 volts, 25 cycle)	32-8075
7	Tubular Cond. (.05 mfd. 200 volts)	30-4519	33	3rd I.F. Transformer	32-3467	59	Condenser (Dual .01 mfd.)	3903-ODG
8	Resistor (4700 ohms, 1/2 watt)	33-247344	34	Mica Condenser (100 mmfd.)	60-110157	60	Wave Switch	42-1578
9	Padder (Aerial Bdcst.)	(Part of 5)	35	Resistor (2.2 megohms, 1/3 watt)	33-522244		Bezel (dial)	27-4975
10	Mica Condenser (250 mmfd.)	30-1179	36	Resistor (1 megohm, 1/3 watt)	33-510244		Bezel (Push button)	27-4983
11	Aerial Transformer (S.W.)	32-3462	37	Resistor (1 Megohm, 1/3 watt)	33-510244		A.C. Cord	03-0016
12	Tuning Condenser	31-2481	38	Electrolytic Condenser (4 mfd.)	30-2486		Clip (Mtg. Elect. Cond.)	56-1466
13	Aerial Transformer (Police)	32-3463	38A	Electrolytic Cond.	(Part of 38)		Dial Scale	27-5618
14	Aerial Transformer (Bdcst.)	32-3461	39	Resistor (33,000 ohms, 1/2 watt)	33-333344		Dial Pointer	56-1819FCF
15	Push Button Padder Strip Complete	31-6372	40	Resistor (2200 ohms, 1/2 watt)	33-222344		Dial Tuning Shaft	56-6086
16	Push Button Switch	22-0003	41	Volume Control	33-5332		Drive Cord (Tuning Cond. Drive)	31-2400
17	Padder (Bdcst. Series)	31-6352	42	Resistor (4.7 megohms, 1/3 watt)	33-547244		Drive Cord (Pointer)	31-2473
17A	Padder (Bdcst. Shunt)	(Part of 17)	43	Tubular Cond. (.01 mfd. 400 volts)	30-4572		Drive Cord—Long (Indicator)	31-2477
18	Oscillator Transformer (Bdcst.)	32-3464	44	Mica Condenser (100 mmfd.)	60-110157		Drive Drum (Tuning Condenser)	38-9883
19	Padder (Police Shunt)	31-6351	45	Tubular Cond. (.004 mfd. 400 volts)	30-4578		Knob (Tuning-Volume)	27-4332
19A	Padder (S.W. Shunt)	(Part of 19)	46	Resistor (220,000 ohms, 1/3 watt)	33-422244		Knob (Push Button)	27-4824
20	Resistor (47,000 ohms, 1/3 watt)	33-347244	47	Tubular Cond. (.006 mfd. 400 volts)	30-4591		Socket Assembly (Dial Light)	76-1062
21	Mica Condenser (100 mmfd.)	60-110157	48	Tone Control	33-5404		Socket Assembly (Indicator Light)	76-1063
22	Oscillator Transformer (Police)	32-3459	49	Resistor (1 megohm, 1/3 watt)	33-510244		Tube Socket	27-6138
23	Mica Condenser (3000 mmfd.)	60-230334	50	Tubular Cond. (.003 mfd. 1000 volts)	30-4469		Spring (Dial Indicator)	56-1826
24	Oscillator Transformer (S.W.)	32-3460	51	Output Transformer	32-8063		Spring (Condenser Drive)	28-8751
25	Mica Condenser (250 mmfd.)	60-125157	52	Cone and Voice Coil Assembly	36-4157		Spring (Pointer Drive)	28-8953
26	Mica Condenser (250 mmfd.)	30-1179	53	Pilot Lamps	34-2068		Speaker	36-1510

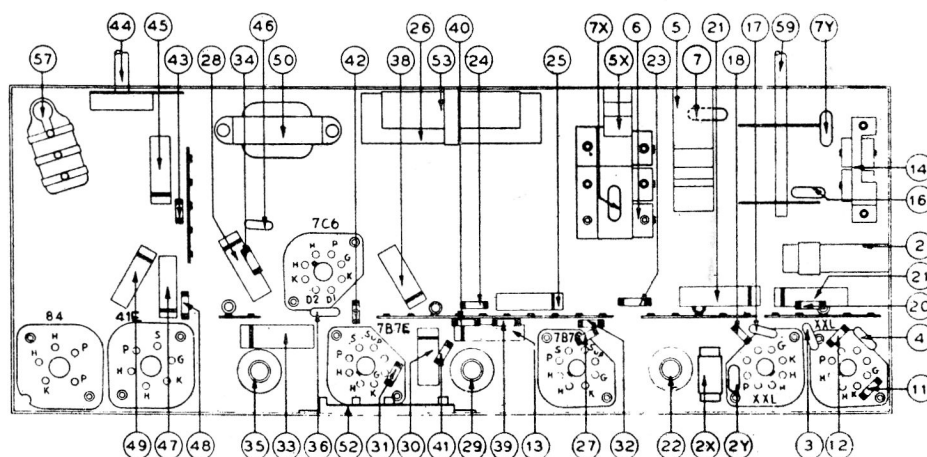
REPLACEMENT PARTS LIST — PHILCO MODEL 41

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Loop Antenna	76-1081	16	Silver Mica Cond. (98 mmfd.)	30-1186	52	Resistor (27, 36, 300 ohms)	33-3392
	Sleeve (Loop Mounting)	28-2257	17	Mica Cond. (250 mmfd.)	60-125157	53	Electrolytic Cond. (12 mfd.)	30-2490
	Sleeve (Loop Mounting)	56-1907	18	Resistor (2.2 megohms, 1/3 watt)	33-522244	54	Field Coil	32-9580
	Spring Washer	28-4186	19	Tubular Cond. (.05 mfd. 200 volts)	30-4519	55	Power Transformer, 60 cycle	32-8117
2	Antenna Transformer (B.C. & S.W.)	32-3505	20	Resistor (2200 ohms, 1/2 watt)	33-222344		Power Transformer, 25 cycle	12-0009
2X	Antenna Transformer (Police)	32-3515	21	Tubular Cond. (.05 mfd. 400 volts)	30-4518	56	Power Switch	(Part of 9)
2Y	Mica Condenser (15 mmfd.)	60-015337	22	1st I.F. Transformer	32-3465	57	Power Line Cond. (.01-.01 mfd.)	3903ODG
3	Mica Condenser (250 mmfd.)	60-125157	23	Resistor (4700 ohms, 1/2 watt)	33-247344	58	Pilot Lamps	34-2064
4	Mica Condenser (100 mmfd.)	60-110157	24	Resistor (1 megohm, 1/3 watt)	33-510244	59	Band Switch	42-1599
5	Oscillator Transformer (Bdcst.)	32-3539	25	Tubular Cond. (.05 mfd. 200 volts)	30-4519		Bezel (Push Button)	56-1893
5X	Oscillator Transformer (Police)	32-3516	26	Electrolytic Cond. (8-8 mfd. 400 volts)	30-2489		Speaker Cable	41-3541
6	Padder (6 M.C. Oscillator)	31-6374	27	Resistor (47,000 ohms, 1/2 watt)	33-347344		Power Cord	03-0017
6A	Padder (1500 K.C. Oscillator, Part of 6)		28	Tubular Condenser (.05 mfd. 200 volts)	30-4519		Clip (Mtg. Antenna Transformer)	28-5002
6B	Padder (12 M.C. Oscillator, Part of 6)		29	2nd I.F. Transformer	32-3466		Clip (Mtg. Osc. Transformer)	28-5003
7	Mica Condenser (87 mmfd.)	30-1182	30	Tubular Cond. (.05 mfd. 200 volts)	30-4519		Clamp (Electrolytic Condenser)	56-1452
7X	Mica Condenser (10 mmfd.)	60-010137	31	Resistor (330 ohms, 1/2 watt)	33-133336		Dial	27-5652
7Y	Mica Condenser (2000 mmfd.)	60-220324	32	Resistor (4700 ohms, 1/2 watt)	33-247344		Dial Strap	56-1881
8	Tuning Condenser	31-2481	33	Tubular Condenser (.1 mfd. 400 volts)	30-4455		Dial Screw	W1822
	Tuning Shaft	56-6086	34	Resistor (1000 ohms, 1/2 watt)	33-210344		Dial Pointer	56-1856
	"C" Washer	28-2043	35	3rd I.F. Transformer	32-3467		Drive Cord (Band Indicator)	31-2488
	Drive Drum	38-9883	36	Mica Condenser (100 mmfd.)	60-110157		Dial Indicator Support	56-1814
	Drive Cord (Pointer)	31-2487	37	Volume Control (1/2 Meg. Ohm)	33-5319		Drive Cord Guide	56-2046
	Drive Cord (Tuning Condenser)	31-2400	38	Tubular Cond. (.006 mfd. 400 volts)	30-4591		Knob (Volume Tuning)	27-4332
	Spring (Tuning Condenser Cord)	28-8751	39	Resistor (1 megohm, 1/3 watt)	33-510244		Knob (Push Button)	27-4824
	Spring (Pointer Drive Cord)	28-8953	40	Resistor (680,000 ohms, 1/3 watt)	33-468244		Speaker	36-1513
	Spring (Tuning Cond. Drive Shaft)	28-8955	41	Resistor (330,000 ohms, 1/3 watt)	33-433244		Rubber Grommet (P.B. Switch Mtg.)	27-4596
	Screw (Mounting)	W-523	42	Resistor (4.7 megohm, 1/3 watt)	33-547244		Rubber Corners	54-4015
	Push Button and Power Switch	22-0004	43	Resistor (220,000 ohms, 1/3 watt)	33-422244		Pilot Lamp Socket (2)	76-1077
	Sleeve Mounting Push Button Switch	28-5665	44	Tone Control (400,000 ohms)	33-5404		Pilot Lamp Socket (1)	76-1078
	Push Button Padder Strip	31-6377	45	Tubular Cond. (.003 mfd. 1000 volts)	30-4469		Socket (Rectifier)	27-6035
	Resistor (47,000 ohms, 1/3 watt)	33-347244	46	Mica Condenser (100 mmfd.)	60-110157		Socket (Output Tube)	27-6036
	Resistor (33,000 ohms, 1/2 watt)	33-333344	47	Tubular Cond. (.01 mfd. 400 volts)	30-4572		Socket (Loktal-Osc Tube)	27-6129
13	Tubular Cond. (.05 mfd. 200 volts)	30-4519	48	Resistor (470,000 ohms, 1/3 watt)	33-447244		Socket (R.F. I.F. Tube)	27-6158
14	Padder (1500 K.C. Antenna)	31-6335	49	Tubular Cond. (.006 mfd. 400 volts)	30-4591		Socket (Antenna Three Prong)	27-6145
14A	Padder (580 K.C. Oscillator, Part of 14)		50	Output Transformer	32-8116		Loop Terminal Panel	38-9870
15	Padder (12 M.C. Antenna)	31-6384	51	Cone Ass. (for Speaker 36-1513)	36-4159			





MODEL 34—PART LOCATIONS, UNDERSIDE OF CHASSIS



MODEL 41—PART LOCATIONS, UNDERSIDE OF CHASSIS

ALIGNMENT OF R.F. AND I.F. COMPENSATORS

The following procedure is the same for both models:

EQUIPMENT REQUIRED

1. **Signal Generator:** Covering the frequency range of the receiver, such as Philco Model 177.
2. **Aligning Indicator:** Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Model 028 circuit tester contains both these meters.
3. **Tools:** Philco Fibre Screw Driver, Part No. 45-2610. When using the vacuum tube voltmeter for alignment, an adapter, Part No. 45-2767, is recommended for convenience.

CONNECTING ALIGNING INSTRUMENTS

Vacuum Tube Voltmeter: To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (—) terminal of the voltmeter to any point in the circuit where the A.V.C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

Audio Output Meter: Terminal No. 1 is provided on the loop aerial panel for connecting one lead of the audio output meter to the voice coil of the speaker. The other lead of the meter is connected to the chassis. When using these connections, the lowest A.C. scale of the meter must be used. (0 to 10 volts).

The audio output meter can also be connected between the plate of the output tube and the ground of the chassis.

Signal Generator: When adjusting the "I.F." padders, the high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R.F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

The receiver can be adjusted in the cabinet or removed from the cabinet. If adjustments are made outside the cabinet a Service Tuning Scale, Part No. 45-2826, Model 41 will be required. This scale is placed underneath the pointer on the metal dial plate.

After connecting the aligning instruments, adjust the compensators as shown in the tabulation for each model below. Locations of the compensators are shown in the chassis layout diagrams on page 5. If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator.

MODEL 34

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	Ant. Section of Tuning Condenser	460 K.C.	Tuning Cond. Closed	Vol. Max. Range Switch "Brdest"	33A, 30A, 29A, 29B.	Note A
2	Loop to Radio Loop See Sig. Gen. above	1500 K.C.	1500 K.C.	Vol. Max. Range Switch "Brdest"	17A, 9	Note B
3	Loop to Radio Loop See Sig. Gen. above	580 K.C.	580 K.C.	Vol. Max. Range Switch "Brdest"	17	Rock Comp. to "max." Recheck Operation No. 2
4	Loop to Radio Loop See Sig. Gen. above	6 M.C.	6 M.C.	Range Switch "Police"	19	Rock Comp. to "max."
5	Loop to Radio Loop See Sig. Gen. above	9.5 M.C.	9.5 M.C.	Range Switch "S. W."	19A, 5	Note C
6	Loop to Radio Loop See Sig. Gen. above	12 M.C.	12 M.C.	Range Switch "S. W."	19A, 5	Note D

NOTE A—Compensator 29A must be adjusted before Compensator 29B. Turn 29A all the way up, then slowly turn down and select the first I.F. peak. Padder 29B is now adjusted to maximum.

NOTE B—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position,

set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE C—Set pointer at 9.5 M.C. and adjust padder (19A) to the second peak from tight. Adjust padder (5A) to first peak from tight. (This gives the approximate correct setting of padders for next operation.)

NOTE D—Tune in the 2nd signal peak from the tight position. Padder 19A, then roll padder 5 slowly to maximum on the first peak from tight position.

MODEL 41

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order	
1	Ant. Section of Tuning Cond.	460 K.C.	Tuning Cond. Closed	Vol. Max. Range Switch "Brdest"	35A, 29A, 22A, 22B	Note A
2	Loop to Radio Loop See Sig. Gen. Above	1720 K.C.	1720 K.C.	Vol. Max. Range Switch "Brdest"	6A	Note B
3	Loop to Radio Loop See Sig. Gen. Above	1500 K.C.	1500 K.C.	Vol. Max. Range Switch "Brdest"	14	
4	Loop to Radio Loop See Sig. Gen. Above	580 K.C.	580 K.C.	Vol. Max. Range Switch "Brdest"	14A	Rock Comp. to "max." Recheck Operation No. 2
5	Loop to Radio Loop See Sig. Gen. Above	6 M.C.	6 M.C.	Range Switch Police	6	Rock Comp. to "Max."
6	Loop to Radio Loop See Sig. Gen. Above	12 M.C.	12 M.C.	Range Switch S.W.	6B, 15	Note C

NOTE A—Compensator 22A must be adjusted before (22B) and should be done in the following manner: Turn 22A all the way up, then turn down selecting the first I.F. peak, then pad 22B to maximum.

NOTE B—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser.

To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE C—Tune in the first signal peak from the tight position of both padders. Roll padder (15) slowly to maximum on the first peak.