PHILCO . . Models 39-340 and 39-341—Code 121

SERVICE BULLETIN No. 305 for members of RADIO MANUFACTURERS SERVICE

A PHILCO Service Plan

SPECIFICATIONS

TYPE OF CIRCUIT: A.C. operated; superheterodyne circuit with two tuning ranges, covering standard broadcast (540 KC. to 1720 KC.) and short-wave (5.8 MC. to 18.0 MC.) frequencies; Electric Push-Button Tuning (on Model 39-340 only); Automatic Volume Control; and Push-Pull pentode output.

The receivers are designed to operate from a "Philco Safety Aerial," part No. 40-6370. This aerial system should be used to obtain maximum performance from the receiver.

POWER SUPPLY: Voltage, 115 volts. Frequency, 25-40 and 50-60 cycles. Power consumption, 80 watts.

INTERMEDIATE FREQUENCY: 460 KC.

TUNING RANGES: 540 KC. to 1720 KC.; 5.8 MC. to 18.0 MC.

PHILCO TUBES USED: 1-78E, R.F.; 1-6A7E, 1st detector and oscillator; 1-78E, I.F.; 1-6Q7G, 2nd detector, 1st audio Automatic Volume Control; 1-6J5G, phase inverter; 2-42E, push-pull output; and 1-5Y4G, rectifier.

TUNING MECHANISM: Pulley and cable drive for Manual tuning.

CABINETS: Type "XX."

Adjusting Electric Push-Button Tuning

In order to set the Electric Push-Buttons correctly for each station, the procedure as given below should be carefully followed. Accurate adjustment of the buttons requires the use of a Philco Model 177 Signal Generator and a part No. 27-7059 insulated screw driver.

(A) Select six of the most popular stations received in the locality and remove their call letters from the call letter sheets supplied. Place the call letters in the windows above the buttons, making sure that each button covers the frequency of the station for which it is to be used. Two adjustment screws for each button are located on the rear of the push-button unit. Each set of screws is numbered and covers a frequency range as follows:

Push-Button	Frequency Range
1 and 2	540-1030 KC.
3 and 4	670-1160 KC.
5	900-1470 KC.
6	1100-1600 KC.

Looking at the front of the cabinet, the first button on the left is adjusted by set screw No. 1, the next button by set screw No. 2, and the remaining buttons in the same order.

(B) Connect the aerial and ground to the "ANT" and "GND" terminals of the receiver.

(C) Turn the receiver Tuning Range Selector to position 2 (Broadcast) and tune the receiver to the station to be set on the first button.

(D) Plug the output leads of the Signal Generator into the "High" and "Gnd" jacks, and turn the output controls to maximum.

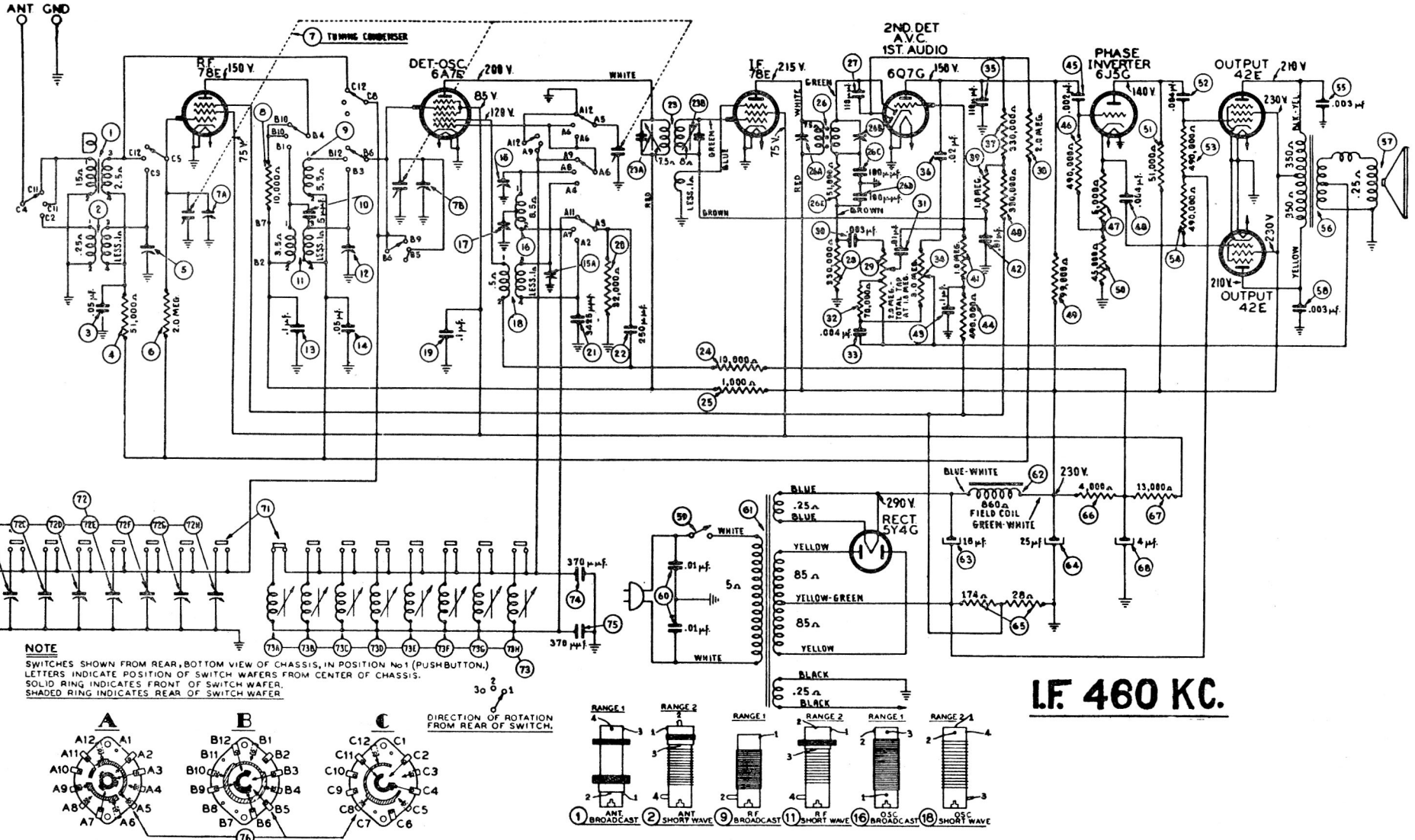
Turn the modulation control to "Modulation On." Connect the output lead of the signal generator to the "ANT" and "GND" terminals of the receiver and tune to the frequency of the station being received. As the indicator is slowly tuned through the frequency of the station, there will be two points at which a whistle will be heard, one above and one below the frequency of the station. When the indicator is on the frequency of the station the whistle will be eliminated and the modulated signal of the station setter will then be clearly heard through the receiver.

(E) Turn the receiver Tuning Range Selector to position 1 (Push-Button) and press in the first button. Using the part No. 27-7059 insulated screw driver; turn the No. 1 "OSC" screw until the broadcast station identified by the signal generator is tuned to Maximum Volume.

(F) Remove the output lead of the station setter from the "ANT" terminal of the receiver and turn the indicator of the Signal Generator off the frequency of the station. The program of the desired station will then be heard in the receiver without the modulated signal.

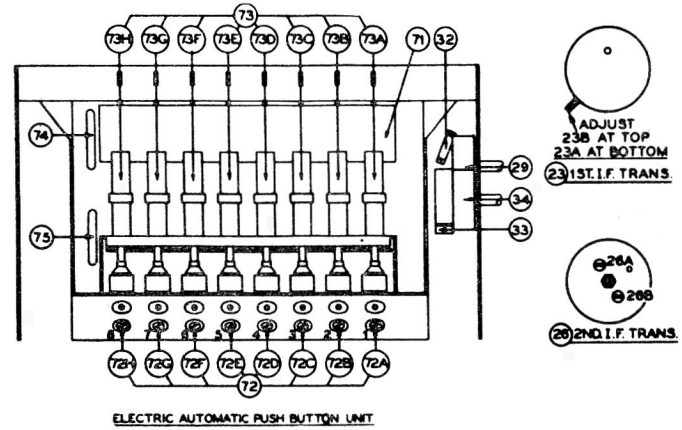
(G) With the volume of the receiver low, slowly turn the No. 1 "OSC" screw back and forth until maximum output is received. Repeat the same procedure for the No. 1 "ANT" screw.

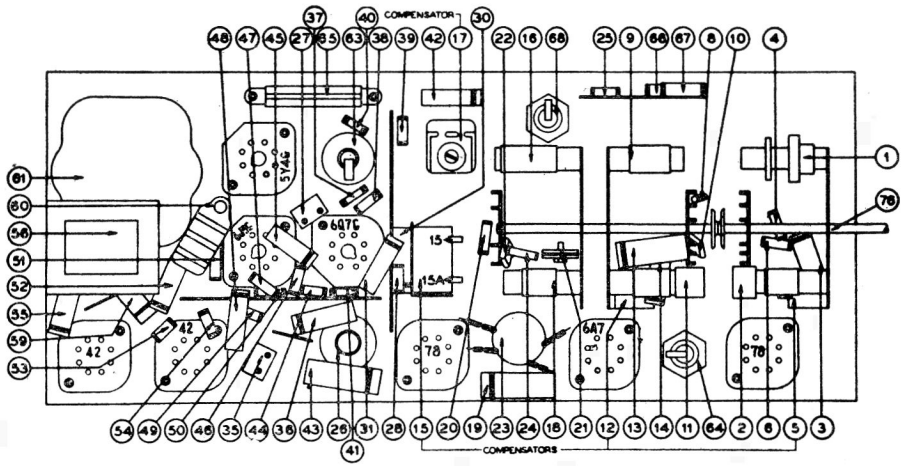
After setting up the first station, the same procedure given under (C) to (G) is used for the other stations.



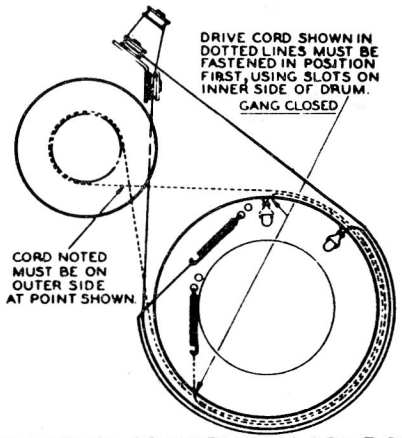
NOTE: Model 39-341 does not have Push-Button Tuning

SCHEMATIC DIAGRAM MODELS 39-340 and 39-341





Part Locations Underside of Chassis Models 39-340 and 39-341



CORRECT METHOD OF INSTALLING DRIVE CORDS ON TUNING CONDENSER DRUM

Replacement Parts List for Models 39-340 and 39-341 Code 121

Part	Description	Part No.
1	Antenna transformer (Broadcast)	32-3056
2	Antenna transformer (Short-wave)	32-3055
3	Condenser (.05 mfd. tubular)	30-4519
4	Resistor (51,000 ohms, ½ watt)	33-351344
5	Compensator (Short-wave antenna)	31-6212
6	Resistor (2.0 megohms, ½ watt)	33-520344
7	Tuning condenser	31-2296
8	Resistor (10,000 ohms, ½ watt)	33-310344
9	R.F. Transformer (Broadcast)	32-2379
10	Condenser (5 mmfd. mica)	30-1097
11	R.F. Transformer (Short-wave)	32-3046
12	Compensator (Short-wave R.F.)	31-6212
13	Condenser (.1 mfd. tubular)	30-4455
14	Condenser (.05 mfd. tubular)	30-4519
16	Oscillator transformer (Broadcast)	32-2120
17	Compensator (600 Kc.)	31-6230
18	Oscillator transformer (Short-wave)	32-3051
19	Condenser (.1 mfd. tubular)	30-4455
20	Resistor (32,000 ohms, ½ watt)	33-332344
21	Condenser (3425 mmfd.)	31-6263
22	Condenser (250 mmfd. mica)	30-1032
23	1st I.F. Transformer	32-3079
24	Resistor (10,000 ohms, ½ watt)	33-310344
25	Resistor (1,000 ohms, ½ watt)	33-210344
26	2nd I.F. Transformer	32-2582
27	Condenser (110 mmfd. mica)	30-1031
28	Resistor (330,000 ohms, ½ watt)	33-433344
29	Volume control	33-5286
30	Condenser (.003 mfd. tubular)	30-4580
31	Condenser (.01 mfd. tubular)	30-4581
32	Resistor (70,000 ohms, ½ watt)	33-370344
33	Condenser (.004 mfd. tubular)	30-4578
34	Tone control	33-5287
35	Condenser (110 mmfd. mica)	30-1031
36	Condenser (.02 mfd. tubular)	30-4481
37	Resistor (330,000 ohms, ½ watt)	33-433344
38	Resistor (2.0 megohm, ½ watt)	33-520344
39	Resistor (1.0 megohm, ½ watt)	33-510344
40	Resistor (330,000 ohms, ½ watt)	33-433344
41	Resistor (1.0 megohm, ½ watt)	33-510344
42	Condenser (.01 mfd. tubular)	30-4581
43	Condenser (.1 mfd. tubular)	30-4455
44	Resistor (490,000 ohms, ½ watt)	33-449344
45	Condenser (.002 mfd. tubular)	30-4579
46	Resistor (490,000 ohms, ½ watt)	33-449344
47	Resistor (5,000 ohms, ½ watt)	33-250344
48	Condenser (.004 mfd. tubular)	30-4578
49	Resistor (99,000 ohms, ½ watt)	33-399344
50	Resistor (45,000 ohms, ½ watt)	33-345344
51	Resistor (51,000 ohms, ½ watt)	33-351344
52	Condenser (.004 mfd. tubular)	30-4578
53	Resistor (490,000 ohms, ½ watt)	33-449344
54	Resistor (490,000 ohms, ½ watt)	33-449344
55	Condenser (.003 mfd. tubular)	30-4469
56	Output transformer	32-7981
57	Cone and voice coil assembly for speaker Part No. 36-1450	36-4089
58	Condenser (.003 mfd. tubular)	30-4469
59	A. C. Switch	42-1479
60	Condenser (Twin .01 mfd.)	3903DG
61	Power transformer	
	115 v. 50-60 cycles	32-7998
	115 v. 25-40 cycles	32-8012
62	Speaker field. Replace speaker	36-1450
63	Electrolytic cond. (18 mfd. 400 v.)	30-2335
64	Electrolytic cond. (25 mfd. 250 v.)	30-2333
65	B.C. Resistor	33-3358
66	Resistor (4,000 ohms, 1 watt)	33-240444
67	Resistor (13,000 ohms, 1 watt)	33-313444
68	Electrolytic cond. (4 mfd. 250 v.)	30-2334
69	Pilot lamp	34-2064
70	Pilot lamp	34-2064
71*	Push-button switch	42-1473
72*	Padder strip assembly complete	31-6273
72B*	Compensator No. 1 (540-1030 Kc.)	
72C*	Compensator No. 2. (540-1030 Kc.)	
72D*	Compensator No. 3. (670-1160 Kc.)	
72F*	Compensator No. 4. (670-1160 Kc.)	
72F*	Compensator No. 5. (900-1470 Kc.)	
72G*	Compensator No. 6. (1100-1600 Kc.)	
73*	Coil strip assembly (6 coils)	32-3098
73B*	Coil No. 1 (540-1030 Kc.)	32-3042
73C*	Coil No. 2. (540-1030 Kc.)	32-3042
73D*	Coil No. 3 (670-1160 Kc.)	32-3042
73E*	Coil No. 4. (670-1160 Kc.)	32-3042
73F*	Coil No. 5. (900-1470 Kc.)	32-3041
73G*	Coil No. 6. (1100-1600 Kc.)	32-3041
74*	Condenser (370 mmfd. silver mica)	30-1110
75*	Condenser (370 mmfd. silver mica)	30-1110
76	Wave-switch	42-1461
	Bezel Model 39-340	56-1164
	Model 39-341	56-1162
	Bezel gasket	38-9734
	Drum shaft bearing	56-1036
	Power outlet cord	L-2839
	Speaker cable	41-3444
	Tuning Condenser coupling	31-2291
	Dial scale	27-5421
	Dial clamp	56-1034
	Dial gasket (small)	27-9224
	Dial gasket (large)	27-9225
	Dial pointer	56-1033
	Dial drive cord (short)	31-2315
	Dial drive cord (long)	31-2316
	Dial drive cord spring	28-8913
	Tuning drum	27-4766
	Wave-switch drum assembly	38-9702
	Tone control drum	27-4764
	Volume control drum	27-4765
	Drum assembly (Tuning condenser)	38-9716
	Drum bracket & bearing assembly	38-9662
	Shaft (Control drums)	28-6924
	Dial lamp socket assembly (left)	38-9694
	Dial lamp socket assembly (right)	38-9695
	6 prong standard socket	27-6036
	6 prong octal socket	27-6086
	7 prong standard socket (6A7)	27-6107
	7 prong octal socket	27-6053
	Complete speaker	36-1450
	*Station tab kit	27-5432
	*Grommet (Mtg. push-button switch)	27-4610
	Grommet (Mtg. tuning unit Ass'y.) with shoulder	3914
	without shoulder	3915
	Mounting nut (A.C. switch)	W-1757
	Washer (A.C. switch)	W-894
	Nut (Speaker mounting)	W-124
	Washer (Speaker mounting)	27-7467
	Screw (Chassis mounting)	W-1345
	Rubber washer (Chassis mounting)	27-4571
	Steel washer (Chassis mounting)	28-5114
	Screw (Bezel mounting)	W-1834

*—These parts are used on the Model 39-340 only in connection with the Electric Push-Button Tuning

Alignment of Compensators

EQUIPMENT REQUIRED

(1) Signal Generator, Philco Model 177 Signal Generator which has a fundamental frequency range from 115 to 32,500 KC. is the correct instrument for this purpose.

(2) Output meter, Philco Model 026 Circuit Tester, incorporates a sensitive output meter and is recommended.

(3) Philco Fiber Handle Screw Driver, part No. 27-7059 and Fiber Wrench, part No. 7696.

OUTPUT METER: The Philco 026 Output Meter is connected to the plate terminals of the type 42E tubes and adjusted for the 0 to 30 scale. After connecting the output meter, adjust the compensators in the order as shown in the tabulation below. Locations of the compensators are shown on page 3. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations	SIGNAL GENERATOR			RECEIVER			Special Instructions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Setting	Adjust Compensators to Max. Reading	
1	6A7E	.1 mf	460 KC.	600 KC.	Vol. Max. Range Switch Broadcast	26B, 26A, 23B, 23A	
2	Ant. Ter.	150 mmf	1550 KC.	1550 KC.	"	15, 7B, 7A	See Note B and C
3	Ant. Ter.	150 mmf	600 KC.	600 KC.	"	17	Roll Tuning Condenser
4	Ant. Ter.	150 mmf	1550 KC.	1550 KC.	"	15	
5	Ant. Ter.	400 ohms	18.0 MC.	18.0 MC.	Range Switch S. W.	15A, 12, 5	

NOTE A—The "Dummy Antenna" consists of a condenser connected in series with the signal generator output lead (high side). Use the capacity as specified in each step of the above procedure.

NOTE B—Dial Calibration. In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale. The arrangement of the drive cable is shown on page 3.

NOTE C—Compensators (7A) and (7B) are located on top of the tuning condenser. Compensator (7A) is the first one from the tuning drum side.

PHILCO PRODUCTS LIMITED

Parts and Service Division — **Toronto, Ont.**

September, 1938. — Printed in Canada