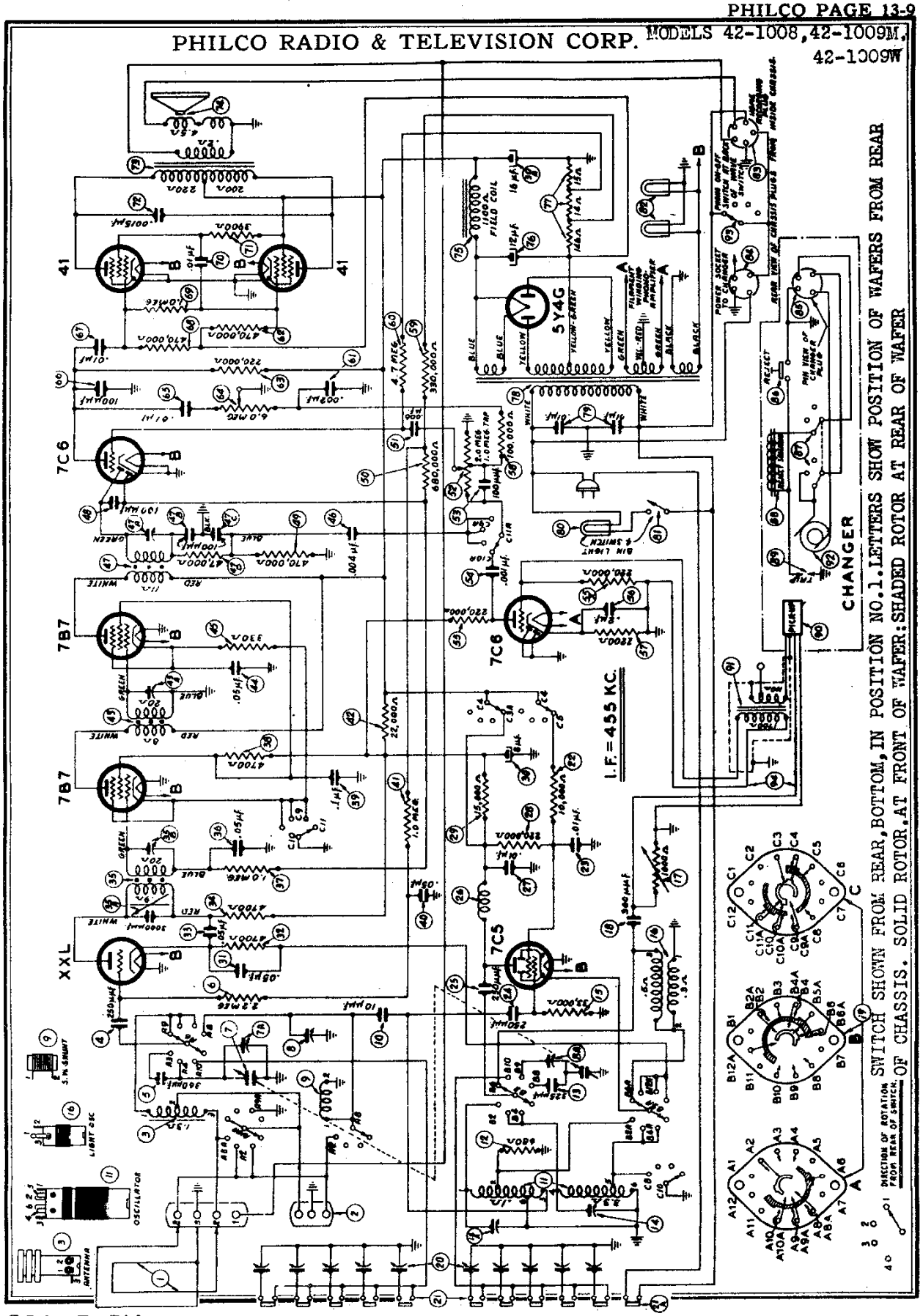
Philco Radio & Television Corp.

Model: 42-1008	Chassis:	Year: Pre March 1942
Power:	Circuit:	IF:
Tubes:		
Bands:		

Resources
Riders Volume 13 - PHILCO 13-9
Riders Volume 13 - PHILCO 13-10
Riders Volume 13 - PHILCO 13-11
Riders Volume 13 - PHILCO 13-12

PHILCO RADIO & TELEVISION CORP.

MODELS 42-1008, 42-1009M, 42-1009W



REPLACEMENT PARTS — MODELS 42-1008, 42-1009

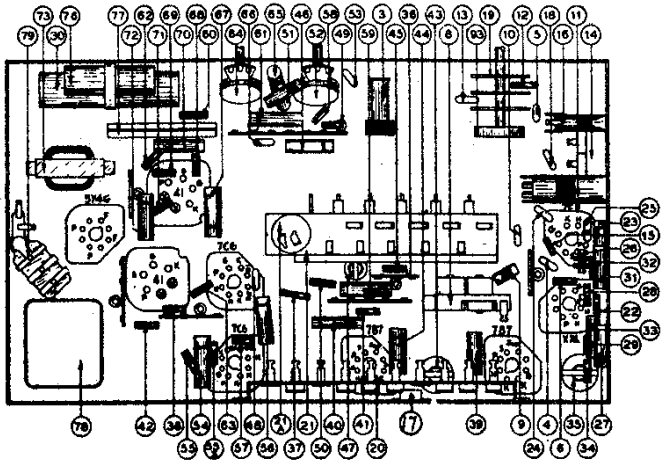


Fig. 2. Locations of Parts—Under Chassis Model 42-1008, 42-1009

Schem. No.	Description	Part No.
	Loop Aerial (42-1008)	76-1345
	Loop Aerial (42-1009)	76-1397
	Sleeve (Loop Mtg.)	28-3906
	Spring Washer (Loop Mtg.)	28-4186
	Washer (Loop Mtg.)	W-151
	Washer (Loop Mtg.)	W-425
	Screw (Loop Mtg.)	W-722
	Terminal Panel	38-9870
2.	External Aerial Socket	27-6145
3.	Aerial Transformer (Broadcast)	32-3784
	Mtg. Clip	28-5002
4.	Mica Condenser (250 mmfd.)	60-125157
5.	Mica Condenser (360 mmfd.)	30-1211
6.	Resistor (2.2 megohms)	33-522339
7.	Tuning Condenser	31-2482
	Drive Cord (Pointer)	31-2592
	Spring	28-8913
	Drive Drum	38-9856
	Mtg. Sleeve	28-5665
	Mtg. Screw (Tuning Cond.)	W-2002
	Tuning Shaft	31-2589
	Spring Washer	56-1659
	"C" Washer	28-2043
8.	Compensator (Aerial—SW)	31-6401
8A.	Compensator (Oscillator—580 K.C.) Part of 8	
9.	Aerial Transformer (S.W.——)	32-3786
10.	Mica Condenser (10 mmfd.)	60-010137
11.	Oscillator Transformer (Brdcst.-S.W.)	32-3787
	Mtg. Clip	28-5003
12.	Resistor (680 ohms)	33-168336
13.	Mica Condenser (325 mmfd.)	30-1212
14.	Compensator (Broadcast Oscillator)	31-6440
14A.	Compensator (S.W. Oscillator) Part of 14	
15.	Resistor (33,000 ohms)	33-333339
16.	Light-Beam Oscillator Transformer	32-3785
	Mtg. Clip	28-5002
17.	Light-Beam Oscillator Control	33-5435
18.	Mica Condenser (300 mmfd.)	60-130127
19.	Band Switch	42-1688
	Mtg. Nut	W-2157
	Drive Cord (Indicator)	31-2590
	Spring	28-8953
20.	Push-Button Compensator Assembly	31-6446
21.	Push-Button and Power Switch Assem.	42-1693
21A.	Push-Button Power Switch (Part of 21)	42-1714
	Mtg. Sleeve	86-1505
	Mtg. Screw	W-523
22.	Resistor (10,000 ohms)	33-310339
23.	Condenser (.01 mfd., 400 volts)	30-4572
24.	Mica Condenser (250 mmfd.)	60-125157
25.	Mica Condenser (250 mmfd.)	60-125157
26.	Oscillator Plate Choke	32-3015
27.	Condenser (.01 mfd., 400 volts)	30-4572
28.	Resistor (220,000 ohms)	33-422339
29.	Resistor (15,000 ohms)	33-315339
30.	Electrolytic Condenser (8-16 mfd.)	30-2480
30A.	Electrolytic Condenser (16 mfd.) (Part of 30)	
	Mtg. Clamp	56-1848
31.	Condenser (.05 mfd., 200 volts)	30-4519
32.	Resistor (4700 ohms)	33-247339
33.	Condenser (.05 mfd., 400 volts)	30-4518
34.	Resistor (4700 ohms)	33-247339
35.	1st I. F. Transformer	32-3823
	Mtg. Nut	W-1949
35A.	Primary Compensator (Iron Core) (Part of 35)	
35B.	Secondary Compensator (Part of 35)	
35C.	Condenser (3000 mmfd.) (Part of 35)	
36.	Condenser (.05 mfd., 200 volts)	30-4519
37.	Resistor (1 megohm)	33-510339
38.	Resistor (4700 ohms)	33-247339
39.	Condenser (.1 mfd., 400 volts)	30-4527
40.	Condenser (.05 mfd., 200 volts)	30-4519
41.	Resistor (1 megohm)	33-510339
42.	Resistor (22,000 ohms, 1 watt)	63-322439
43.	2nd I. F. Transformer	32-3466
	Mtg. Nut	W-1949
43A.	Secondary Compensator (Part of 43)	
44.	Condenser (.05 mfd., 200 volts)	30-4519
45.	Resistor (330 ohms)	33-133336
46.	Condenser (.004 mfd., 600 volts)	30-4623
47.	3rd I. F. Transformer	32-3625
	Mtg. Nut	W-1949
47A.	Secondary Compensator (Part of 47)	
47B.	Condenser (100 mmfd.) (Part of 47)	
47C.	Condenser (100 mmfd.) (Part of 47)	
47D.	Resistor (47,000 ohms)	33-347339
48.	Condenser (100 mmfd.)	60-110157
49.	Resistor (470,000 ohms)	33-447339
50.	Resistor (680,000 ohms)	33-468339
51.	Condenser (.006 mfd., 400 volts)	30-4591
52.	Volume Control	33-5468
	Mtg. Nut	W-2157
53.	Mica Condenser (100 mmfd.)	60-110157
54.	Condenser (.001 mfd. 600 volts)	30-4620
55.	Resistor (220,000 ohms)	33-422339
55X.	Resistor (220,000 ohms)	33-422339
56.	Condenser (.2 mfd., 200 volts)	30-4587
57.	Resistor (2200 ohms)	33-222339
58.	Resistor (100,000 ohms)	33-410339
59.	Resistor (330,000 ohms)	33-433339
60.	Resistor (4.7 megohms)	33-347339
61.	Condenser (.002 mfd., 600 volts)	30-4622
62.	Resistor (470,000 ohms)	33-447339
63.	Resistor (220,000 ohms)	33-422339
64.	Tone Control	33-5467
	Mtg. Nut	W-2157
†65.	Condenser (.004 mfd., 600 volts)	30-4623
66.	Mica Condenser (100 mmfd.)	60-110157
67.	Condenser (.01 mfd., 400 volts)	30-4572
68.	Resistor (470,000 ohms)	33-447339
69.	Resistor (1 megohm)	33-510339
70.	Condenser (.01 mfd., 400 volts)	30-4572
71.	Resistor (3900 ohms)	33-239339
72.	Condenser (.0015 mfd., 1000 volts)	30-4616
73.	Output Transformer	32-8133
†74.	Speaker	36-1528-4
	Speaker	36-1528-9
	Cone Assembly (Speaker 36-1528-4)	36-4176
	Cone Assembly (Speaker 36-1528-9)	36-4203
	Speaker Cable	41-3593
	Rubber Grommet (Mtg. Speaker)	27-4596
	Mtg. Nut	W-124
	Washer	28-3320
	Sleeve	56-2044
75.	Field Coil (Replace Speaker 46-1528)	
76.	Electrolyte Condenser (12 mfd., 475 v.)	30-2481
77.	Bias Resistor (14, 15, 146 ohms)	33-3395
78.	Power Transformer (115 v., 60 cycles)	32-8129
79.	Line Filter Condenser (.01-01 mfd.)	3903-ODG
80.	Record Changer Compartment Light Cable and Socket Assembly	34-2484 41-3627
81.	Compartment Light Switch & Cable	76-1363
82.	Pilot Lamp (Dial)	34-2210
	Socket Assembly (Dial Light)	38-9607
	Pilot Lamp (Band Indicator)	34-2064
	Socket Assembly (Band Indicator)	76-1212
83.	Socket (Home Recording, on Chassis)	27-6179
84.	Changer Power Socket (on Chassis)	27-6182
85.	Power Cable & Plug (Record Changer)	35-2548
86.	Reject Button (Record Changer)	35-2545
87.	Selector Switch (OFF-Automatic-Manual-Record Changer)	35-2547
88.	Reject Solenoid	35-2549
89.	Electric Reject Trip (on Changer)	35-2518
90.	Light Beam Reproducer	32-8198
91.	Phonograph Input Transformer	35-2550
	Pulsating Lever Assembly	
	Trip Switch and Tone Arm Position Lever Assembly	35-2551
92.	Motor (Record Changer, 115 v., 60 cy.)	35-2552

MISCELLANEOUS PARTS

Models 42-1008, 42-1009

Automatic Record Changer, Complete	35-1285
Cabinet (42-1008)	10577-A
Cabinet (Walnut—42-1009)	10555-A
Cabinet (Mahogany—42-1009)	10555-B
Cable (Power)	L-3245
Dial	27-5752
Dial Background Card	27-9800
Dial Pointer	56-1516
Mtg. Clamp	56-1517
Mtg. Spring (Background Card)	28-8908
Mtg. Screw (Dial Clamp)	W-1974
Escutcheon (Push-Buttons)	56-2316
Screw (Mtg. Escutcheon)	W-2073
Knob (Tuning-Volume-Tone) (42-1008, 42-1009-W)	54-4103
Knob (Push-Buttons) (42-1008, 42-1009-W)	54-4106
Knob (Tuning-Volume-Tone) (42-1009-M)	54-4154
Knob (Push-Button—42-1009-M)	54-4176
Rubber Grommet (Mtg. Chassis)	27-4571
Socket (Rubber—7C5 Tube)	27-6129
Socket (Loktal Tubes)	27-6158
Socket (41 Tubes)	27-8168
Socket (6X5G Tube)	27-8173
Mtg. Eyelet	W-1650
Socket Assembly (P. B. Indication)	38-9607
Socket Assembly (Pilot Light)	76-1212
Screw (Mtg. Chassis)	W-1345
Tab Kit	40-6660
Tab (OFF-ON)	27-5738
Tab (Television)	27-5778
Tab Cover	27-5737
Washer (Chassis Mtg.)	28-3114
Wiring Panel (3 lug)	38-8369
Wiring Panel (4 lug)	38-9117
Wiring Panel (9 lug)	38-9433
Wiring Panel (5 lug)	38-9579
Wiring Panel (4 lug)	38-9698
Wiring Panel (7 lug)	76-1322

D.C. indicated at the tube elements in the diagram were measured with a 1000 ohms per voltmeter, Philco Model 027, using the 300-volt scale line voltage 117 volts A.C. no signal being received-range switch broadcast.

Tube	Location	Radio Position D.C. Voltage	Phono. Position D.C. Voltage
7C5 Osc.	Plate	50	200
7C5 Osc.	Screen	8	110
7C5 Osc.	Bias (Grid Leak)	3	2½
XXL 1st Det.	Plate	80	180
XXL 1st Det.	Bias (Cathode)	2	19
7B7 1st & 2nd I.F.	Plate	215	190
	Screen	75	175
7B7 2nd I.F.	Bias (Cathode)	2½	45
7C6 2nd Det. 1st Audio	Plate	95	90
7C6 Preamp.	Plate	35	65
41 Output (Phase inverter)	Plate	210	190
	Screen	200	180
41 Output	Plate	210	190
	Screen	215	195

Tube	Location	Radio Position D.C. Voltage	Phono. Position D.C. Voltage
	12 mf. elect. to ground	300	290
	16 mf. elect. to ground	215	195
	8 mf. elect. to ground	85	180

* Condenser changed to .01 mfd., part No. 30-4572 in run 2nd chassis.

† Two types of speakers are used on these models. These speakers are interchangeable and will have the same part number, with the exception of a suffix number -4, -9 added to the part number. The cone assemblies, however, of these speakers are not interchangeable.

PHILCO RADIO & TELEVISION CORP.

MODELS 42-1008, 42-1009M, 42-1009W

ALIGNING R. F. AND I. F. COMPENSATORS

MODEL 42-1008, CODE 121; 42-1009W, AND 42-1009M, CODE 121

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 070.
2. **ALIGNING INDICATOR:** Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Models 027 and 028. Circuit testers contain both these meters.
3. **TOOLS:** Philco Fiber Screw Driver, Part No. 45-2610.

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.

After connecting the aligning instruments, adjust the compensators as shown in the tabulation below. Locations of the compensators are shown in the figure 3. If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator. Keep volume control of radio at maximum position.

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 Cond. with .1 mfd. Cond.	455 K.C.	Tuning Cond. Closed	Vol. Max. Bands Switch S. W.	3S, 3SB 43A, 47A	
2	Loop Signal Generator	1720 K.C.	1720 K.C.	Bands Switch "Brdcst"	14	Note A
3	Loop Signal Generator	1500 K.C.	1500 K.C.	Bands Switch "Brdcst"	7A	
4	Loop Signal Generator	580 K.C.	580 K.C.	Bands Switch "Brdcst"	8A	Roll comp. (8A) to "max." Recheck Operation No. 2
5	Loop Signal Generator	1720 K.C.	1720 K.C.	Bands Switch "Brdcst"	14	
6	Loop Signal Generator	15 M.C.	15 M.C.	Bands Switch S. W.	14A, 8	Note B

AERIAL CONNECTIONS: The built-in loop aerial system is designed to operate without an outside aerial or ground and to give exceptionally sensitive receiving performance of stations on the standard and short wave frequencies. When operating the radio, however, in steel reinforced buildings and other shielded locations, the PHILCO 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 chassis. This aerial can be obtained from your local PHILCO distributors. A ground connection is not required with either type of installation.

NOTE A.—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 B.—Adjust padder (14A) to the second signal peak from the tight position. Roll padder (8) slowly to maximum on the first peak from tight position.

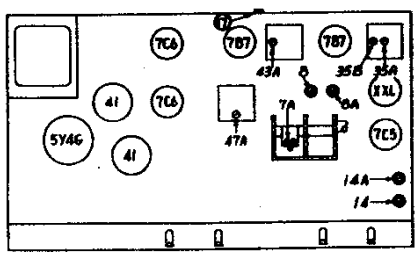


FIG. 3. LOCATIONS OF COMPENSATORS—TOP OF CHASSIS MODELS 42-1008, 42-1009

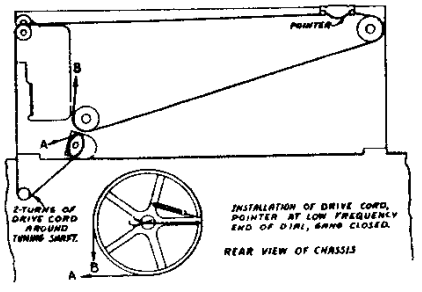


FIG. 4. INSTALLATION OF DRIVE CORDS POINTER AT LOW FREQUENCY END OF DIAL TUNING CONDENSER CLOSED.

INTERMEDIATE FREQUENCY: 455 K.C.

TUNING BAND FREQUENCIES: 540 to 1720 K.C.; 9 to 15.5 M.C.

POWER SUPPLY: 115 volts, 50 or 60 cycle A.C., Consumption Watts. These models are shipped for operation on a 115-volt, 60-cycle, A.C. power supply. To operate on a 115-volt, 50-cycle current, the phonograph motor must be changed to

PHILCO TUBES USED: Nine; one 7C5, oscillator; one XXL, converter; two 7B7, I. F. amplifiers; 7C6, 2nd detector, 1st audio; 7C6, Phonograph pre-amplifier; two, 41 audio output, and a 6X5G, Rectifier.

MODELS 42-1008, 42-1009M, 42-1009W
MODELS 42-1010, 42-1011M

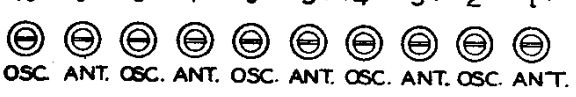
PHILCO RADIO & TELEVISION CORP.

MODELS 42-1008, 42-1009M, 42-1009W

ADJUSTING ELECTRIC PUSH-BUTTON TUNING

Select five of the most popular stations received in the locality. Insert the station call letters into the spaces on the buttons. The station with the lowest frequency is placed in the second button from the left and the highest frequency is placed in the sixth push button on the right. Each push button is adjusted by two adjusting screws located on the rear of the chassis. Each set of screws is numbered and labeled "Ant.", "Osc." and covers a frequency range as follows:

KC.	KC.	KC.	KC.	KC.
1185	850	710	540	540
TO	TO	TO	TO	TO
1720	1600	1185	980	980
10 9	8 7	6 5	4 3	2 1



Looking at the front of the cabinet, the second button on the left is adjusted by adjusting screws No. 1 and 2. The next push button by adjusting screws No. 3 and 4, and the remaining push buttons in order.

1. Press in "Off-On" push button, turn "Bands" knob to "Broadcast."

2. Set up a Model 070 Signal Generator near the receiver and connect a loop aerial (made from a few turns of wire 12 inches in diameter) to the high and ground output jacks of the signal generator. Turn the output controls to maximum and set the modulation control to "MOD. ON."

3. Manually tune in the station to be set up on the first push button. After doing this set the indicator of the 070 Signal Generator to the frequency of the station being received. As the indicator approaches the frequency of the station a whistle will be heard; leave the indicator at this point.

4. Turn "Bands" knob to "Push button" position. Using the insulated screw driver, turn the No. 2 "Osc." screw until the broadcast station identified by the signal generator is heard; at this point, turn the indicator of the signal generator away from the frequency of the station. Readjust No. 2 "Osc." and No. 1 "Ant." screws until the station is clearly and distinctly heard. The push button should then be adjusted properly to the station.

After setting up the first station the same procedure as outlined above is used for the remaining stations. When these models are set up to receive the sound of a television program tuned in by the special type Philco Television Sets or if it is to be used in conjunction with a Philco Record Player, the lowest frequency push button should be used. To tune in these programs, the same procedure as given for broadcast stations above is used.

Further details for setting up these Radios for operation with Philco Television Sets or Record Players are supplied with the instruments.

ADJUSTING ELECTRIC PUSH BUTTON TUNING

The Electric push button tuning mechanism consists of ten push buttons. Five push buttons control and select power supply, Broadcast, Police and Shortwave Bands and Phonograph Operation. The remaining five push buttons are used for automatically selecting five standard broadcast stations.

Select five of the most popular stations received in the locality. Insert the station call letters into the spaces above the buttons. The station with the lowest frequency is placed in the second button from the left and the highest frequency is placed in the sixth push button from the left. Each push button is adjusted by two adjusting screws located on the rear of the chassis. Each set of screws is numbered and labeled "Ant.", "Osc." and covers a frequency range as shown in Fig. 1.

Looking at the front of the cabinet, the second button from the left is adjusted by adjusting screws No. 1. The next push button by adjusting screws No. 2, and the remaining push buttons in order.

1. Press in "Broadcast" push button.

2. Set up a Model 070 Signal Generator near the receiver and connect a loop aerial (made from a few turns of wire 12 inches in diameter) to the high and ground output jacks of the signal generator. Turn the output controls to maximum and set the modulation control to "MOD. ON."

3. Manually tune in the station to be set up on the first station push button. After doing this set the indicator of the 070 Signal Generator to the frequency of the station being received. As the indicator approaches the frequency of the station a whistle will be heard; leave the indicator at this point.

4. Press "in" the second push button from the left of cabinet. Using the insulated screw driver, turn the No. 1 "Osc." screw until the broadcast station identified by the signal generator is heard; at this point, turn the indicator of the signal generator away from the frequency of the station. Readjust No. 1 "Osc." and "Ant." screws until the station is clearly and distinctly heard. The push button should then be adjusted properly to the station.

After setting up the first station the same procedure as outlined above is used for the remaining stations. When these models are set up to receive the sound of a television program tuned in by the special type Philco Television Sets or if it is to be used in conjunction with a Philco Record Player, the lowest frequency push button should be used. To tune in these programs, the same procedure as given for broadcast stations above is used.

Further details for setting up these Radios for operation with Philco Television Sets or Record Players are supplied with the instruments.

MODELS 42-1010, 42-1011M

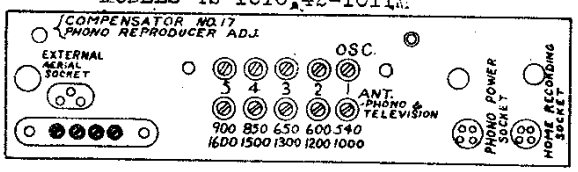


FIG. 1.—PUSH BUTTON COMPENSATOR LOCATIONS

LIGHT-BEAM REPRODUCER ADJUSTMENTS

To reproduce the sound from a record, the light beam of the reproducer must be carefully positioned on the light sensitive cell. If the light beam is not carefully set, the sound reproduction will be distorted, weak or, if the light beam is completely on or off the cell, the phonograph will be silent.

If any of these conditions exist, the following adjustment procedure should be made:

NOTE—These adjustments should be made with the power line voltage at 117 volts A.C.

A. ADJUSTING WIDTH OF LIGHT BEAM

To make this adjustment push the lamp socket assembly into its holder until a clear image of the lamp filament appears on the light cell. The socket should then be slightly pushed in beyond this point until the rectangular spot of light is 5/32" in width. The socket assembly is now rotated so that the spotlight is vertical.

B. POSITIONING THE LIGHT BEAM

To position the light beam on the light cell, turn the adjusting screw at the lower left side of the reproducer until the spot is half on the cell and half on the metal frame surrounding the cell.

C. ADJUSTING INTENSITY OF LAMP

When shipped from the factory, the lamp of the reproducer is adjusted for best operating efficiency. The intensity of the light from the lamp is adjusted by Compensator No. 17 located on the radio chassis. Under ordinary circumstances, an adjustment will not be necessary. When replacing the reproducer or lamp, however, it may be necessary to readjust the light intensity. In this case the compensator is adjusted as follows:

1. Turn volume control on full and play a record.

2. While the record is playing, turn compensator 17 in the direction necessary to obtain the best operating point without distortion. By turning the compensator the strength of the pick-up output is increased or decreased.

D. INSTALLING NEW LAMP

When installing a new lamp in the socket, there are two positions in which the lamp can be inserted. Ordinarily, either of these positions can be used. In some cases, however, due to the lamp filament being off center, the lamp must be inserted in the position that gives the best centering of the spot of light on the vibrating mirror.

FOR BOTH CHASSIS