

## Philco Radio & Television Corp.

**Model:** 41-287

**Chassis:**

**Year:** Pre April 1941

**Power:**

**Circuit:**

**IF:**

**Tubes:**

**Bands:**

### Resources

[Riders Volume 12 - PHILCO 12-61](#)

[Riders Volume 12 - PHILCO 12-64](#)

[Riders Volume 12 - PHILCO 12-73](#)

PHILCO RADIO & TELEVISION CORP.

SEE MODELS BELOW

MODEL 41-260, 41-265, 41-246, 41-609, 41-609

PROCEDURE FOR SETTING AND OPERATING THE ELECTRIC PUSH BUTTON TUNING

The automatic tuning mechanism of each model is identical. The push buttons are used for selecting broadcast stations, and one or two power pads (see below) for selecting stations and corresponding pointers is as follows:

Push Button (Front)	Circuit	Buttons (Front)	Frequency Range
1	Ant	1	On-Off Switch
2	One	2	540 to 560 kilocycles
3	One	3	540 to 560 kilocycles
4	Ant	4	710 to 1185 kilocycles
5	One	5	560 to 1000 kilocycles
6	One	6	1185 to 1720 kilocycles

After the "ANT" screw has been set, switching the "Tuning" button position will enable you to make sure you have the correct station tuned in. When the correct station has been selected, first tuning in the desired station by means of the Station Selector. Then, to push the button, turn "On" the Range Selector. This may cause the radio to hum or flutter when a station button is depressed. To correct this, loosen the "ANT" screw slowly and listen carefully. After the "OSC" screw may be passed without reading it. After the "OSC" screw is set, the "ANT" screw should be adjusted for maximum. For weak stations, it may be necessary to readjust the "OSC" screw

MODEL 41-280, 41-285

When aligning the R. F. paddler a loop is made from a few turns of the signal generator's wire placed close to the loop of the radio. Insert the radio into the cabinet, the loop should be placed in approximately the same position around or near the chassis as when assembled. Connect or connect from the chassis to the antenna section of the tuning capacitor. Turn the "ANT" screw until 250, 400, 550, 700, and 850 are indicated on the scale. The other end of the antenna wire is placed underneath the pointer on the metal dial plate.

The radio output meter can also be connected between the push button and the chassis. When using these connections, the "ANT" screw should be set at 250, 400, 550, 700, and 850. Connect the ground or low side of the generator to the chassis.

Model 41-280

Order	Signal Generator	Receiver	Special Instructions
1	Antenna Section of Tuning Capacitor	Antenna Section of Tuning Capacitor	None A
2	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
3	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
4	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
5	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
6	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B

Model 41-285

Order	Signal Generator	Receiver	Special Instructions
1	Antenna Section of Tuning Capacitor	Antenna Section of Tuning Capacitor	None A
2	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
3	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
4	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
5	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
6	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B

NOTE: A. Connectors (28A) must be adjusted before (28B), and should be done in the following manner: Turn 28A all the way up then slowly turn down and adjust the first I.F. pad. Pad 28B is now adjusted to maximum. NOTE B. DIAL CALIBRATION: In order to align the receiver correctly, the dial must be in the same position (paddler fully extended). With the generator in this position, set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale. NOTE C. Adjust paddler (12A) to the first signal peak from the right position (maximum capacity). NOTE D. Adjust paddler (12B) to the second signal peak from the right position (maximum capacity).

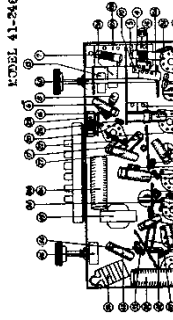
MODEL 41-246

AUDIO OUTPUT METER

When adjusting the meter, switch the lamp socket in the position of the call letters of the generator or from the plate of the 1B5 tube to the chassis. Adjust the meter for 10 to 15 millivolts RMS. To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative lead of the A.V.C. voltmeter to the positive (+) terminal of the vacuum tube voltmeter. Connect the positive (+) terminal of the vacuum tube voltmeter to the antenna section of the tuning capacitor. Connect the R.F. paddler 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 antenna.

When adjusting the meter, switch the lamp socket in the position of the call letters of the generator or from the plate of the 1B5 tube to the chassis. Adjust the meter for 10 to 15 millivolts RMS. To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative lead of the A.V.C. voltmeter to the positive (+) terminal of the vacuum tube voltmeter. Connect the positive (+) terminal of the vacuum tube voltmeter to the antenna section of the tuning capacitor. Connect the R.F. paddler 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 antenna.

When adjusting the meter, switch the lamp socket in the position of the call letters of the generator or from the plate of the 1B5 tube to the chassis. Adjust the meter for 10 to 15 millivolts RMS. To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative lead of the A.V.C. voltmeter to the positive (+) terminal of the vacuum tube voltmeter. Connect the positive (+) terminal of the vacuum tube voltmeter to the antenna section of the tuning capacitor. Connect the R.F. paddler 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 antenna.



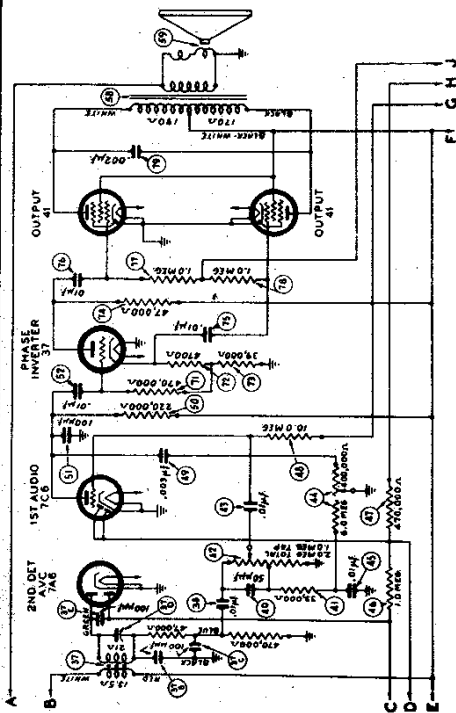
MODEL 41-246  
SIGNAL GENERATOR: When adjusting the I.F. paddler, the high side of the signal generator is connected to the antenna section of the tuning capacitor. Connect the ground or low side of the generator to the chassis.

MODEL 41-244

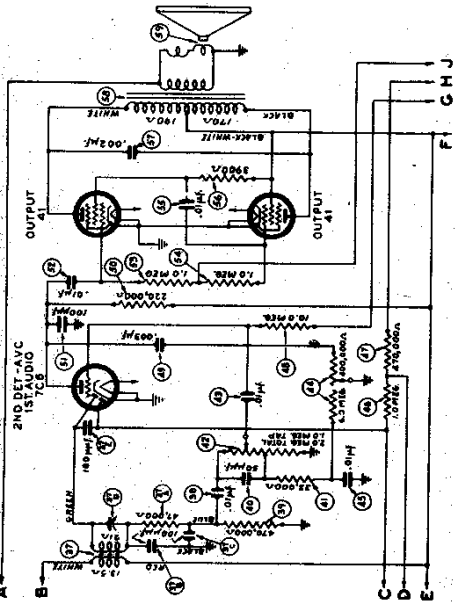
Order	Signal Generator	Receiver	Special Instructions
1	Antenna Section of Tuning Capacitor	Antenna Section of Tuning Capacitor	None A
2	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
3	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
4	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B
5	Loop to Radio Loop See Sig. Gen. Above	Range Switch "Radio"	None B

NOTE: A. Connectors (28A) must be adjusted before (28B), and should be done in the following manner: Turn 28A all the way up then slowly turn down and adjust the first I.F. pad. Pad 28B is now adjusted to maximum. NOTE B. DIAL CALIBRATION: In order to align the receiver correctly, the dial must be in the same position (paddler fully extended). With the generator in this position, set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale. NOTE C. Adjust paddler (12A) to the first signal peak from the right position (maximum capacity). NOTE D. Adjust paddler (12B) to the second signal peak from the right position (maximum capacity).

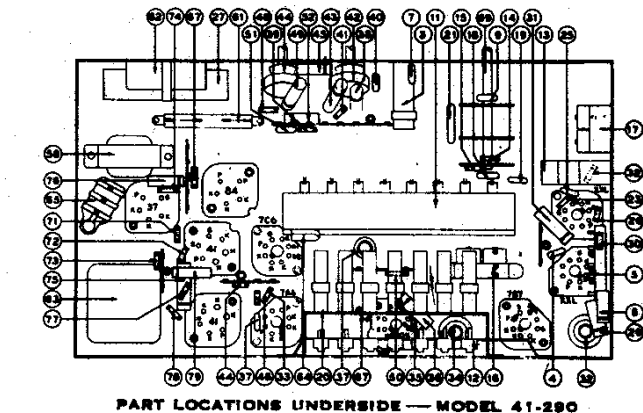
MODELS 41-280, 41-285 PHILCO RADIO & TELEVISION CORP.  
41-287, 41-290



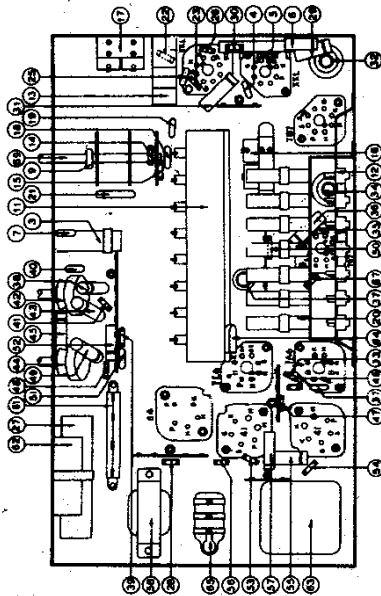
AUDIO CIRCUIT — MODEL 41-290



SECOND DETECTOR CIRCUIT — MODEL 41-280

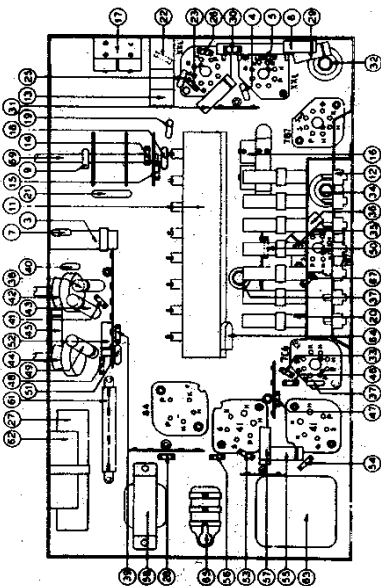


PART LOCATIONS UNDERSIDE — MODEL 41-290



PART LOCATIONS UNDERSIDE — MODELS 41-285-287

FOR ALIGNMENT  
AND TUNER  
SEE INDEX



PART LOCATIONS UNDERSIDE — MODEL 41-280

In general, these models are similar with the exception of the audio circuits, number of tubes used and cabinets. Model 41-280 is an eight (8) tube radio; Models 41-285 and 41-287 are nine (9) tube radios employing the same chassis but assembled in different cabinets, and Model 41-290 consists of a ten (10) 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 at low volume; push-button pentode audio output circuit with screen Phase Inversion; No. 12 type (12) twelve inch speaker and illuminated push button indicators.

POWER CONSUMPTION: Model 41-280, 41-285-287, 41-290, 60  
watts.

FREQUENCY TUNING RANGES: 510 to 1720 K. C.; 2.3 to 7.0  
M. C.; 9.0 to 12.0 M. C.

PHILCO RADIO & TELEVISION CORP.

MODELS 41-280, 41-285, 41-287, 41-290(121)

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in order	
1	High side to No. 4 terminal loop panel.	455 K. C.	580 K. C.	Vol. Max. Range Switch "S. W." Positions	32A, 32B 34A, 37D	
2	Use loop on generator	1500 K. C.	1800 K. C.	Vol. Max. Range Switch Broadcast	16, 10	Note A
3	Use loop on generator	580 K. C.	580 K. C.	Vol. Max. Range Switch Broadcast	17	Roll Tuning Condensers Note B
4	Use loop on generator	Perform operation No. 2 again				
5	Use loop on generator	6 M. C.	6 M. C.	Range Switch "Police"	16A	
6	Use loop on generator	12 M. C.	12 M. C.	Range Switch "S. W."	17A, 2	Note C

**NOTE A—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 in this position is shown in the schematic.

**NOTE B—** When adjusting the low frequency compensator of Range One (Broadcast) or the aerial padders of the high frequency tuning range; the receiver Tuning Condenser must be adjusted (rolled) as follows: First tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first

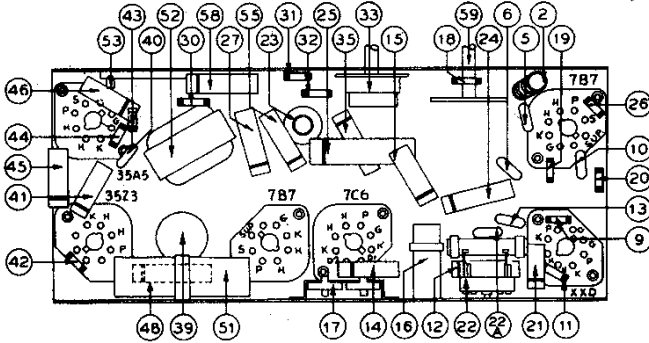
setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

**NOTE C—** To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator (17A) to the maximum capacity position (clockwise). From this position slowly turn the compensator counter-clockwise until a first peak is obtained on the output meter. Adjust the compensator for maximum output at this first peak.

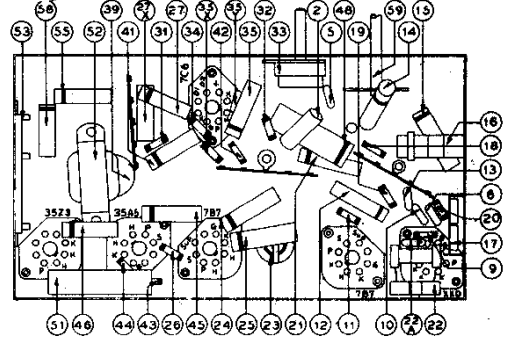
If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the receiver dial 910 K. C. above the frequency being used on any high frequency range.

The aerial padder (2) must be adjusted to maximum by rolling the tuning condenser. If two signal peaks occur when turning the padder, adjust to maximum output on the second signal peak from the tight position (screw all the way down) of the padder.

MODELS 41-603, 41-604, 41-605, 41-607



MODELS 41-603  
PART LOCATIONS—UNDERSIDE OF CHASSIS



MODELS 41-604, 41-605, 41-607  
PART LOCATIONS—UNDERSIDE OF CHASSIS

**Audio Output Meter:** If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the 35A5 tube to the chassis. Adjust the meter for the 0 to 10 volt scale.

**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.

**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.

The receiver can be adjusted in the cabinet or removed from the cabinet.

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 schematic diagram.

If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

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	455 K. C.	540 K. C. Tuning Cond. Closed	Vol Max. Range Switch Brdcat.	39A, 23A, 23B, 22A, 22B	
2	Loop see above instructions	1600 K. C.	1600 K. C.	Vol Max. Range Switch Brdcat.	17A	Note A
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol Max. Range Switch Brdcat.	8	
4	Loop see above instructions	12 M. C.	12 M. C.	Range Switch "S. W."	17, 4	Roll (8) for Max. Note B

**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 small dot below 550 K. C.

**NOTE B—** When adjusting oscillator compensator 17A, tune for maximum on the first signal peak from Tight position (compensator closed). First tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.