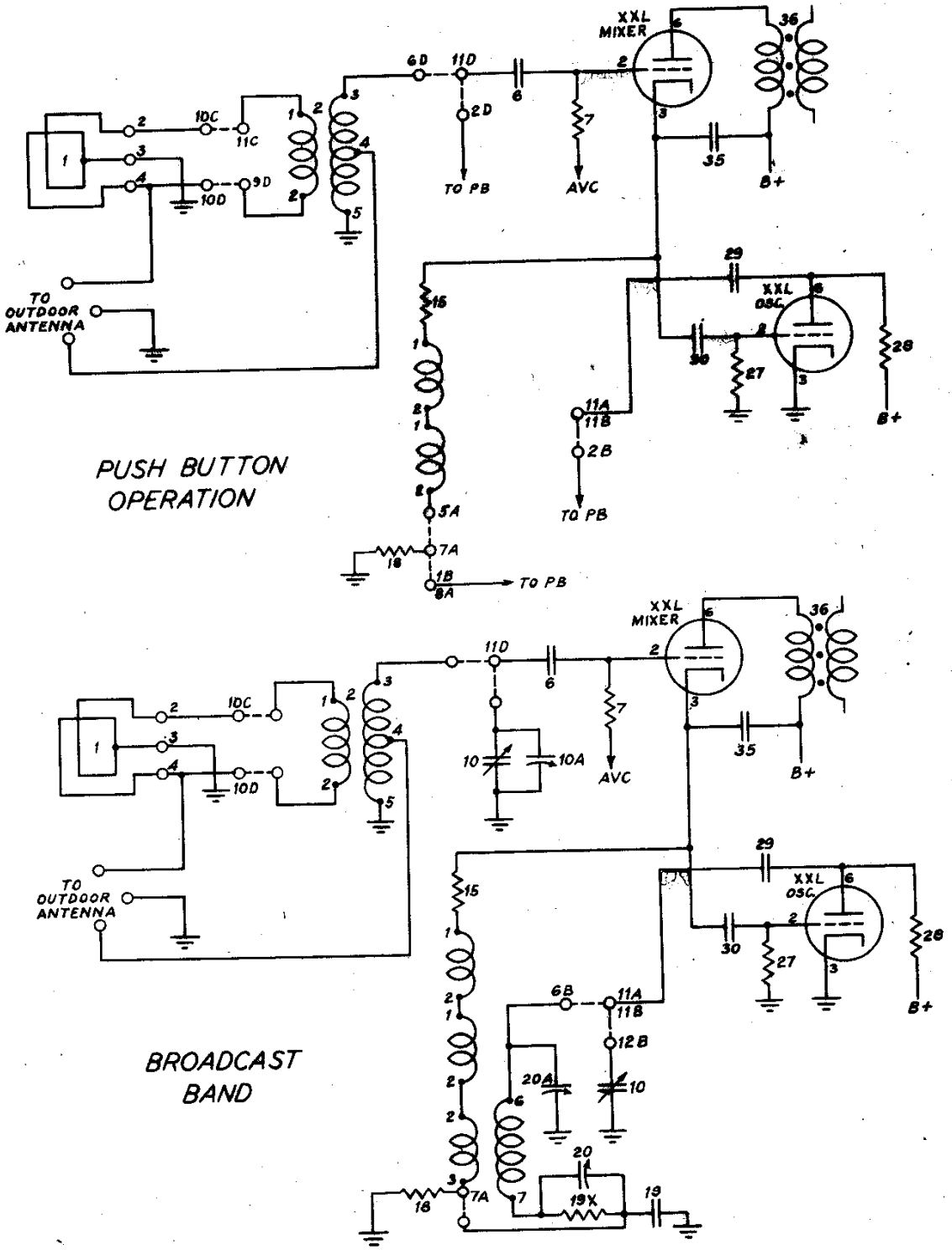
# Philco Radio & Television Corp.

| | | |
|---|---|---|
| Model: 41-300 | Chassis: | Year: Pre April 1941 |
| Power: | Circuit: | IF: |
| Tubes: | | |
| Bands: | | |

| Resources |
|---|
| Riders Volume 12 - CLARIFIED - PHILCO 12-6 |
| Riders Volume 12 - CLARIFIED - PHILCO 12-7 |
| Riders Volume 12 - PHILCO 12-61 |
| Riders Volume 12 - PHILCO 12-65 |
| Riders Volume 12 - PHILCO 12-66 |

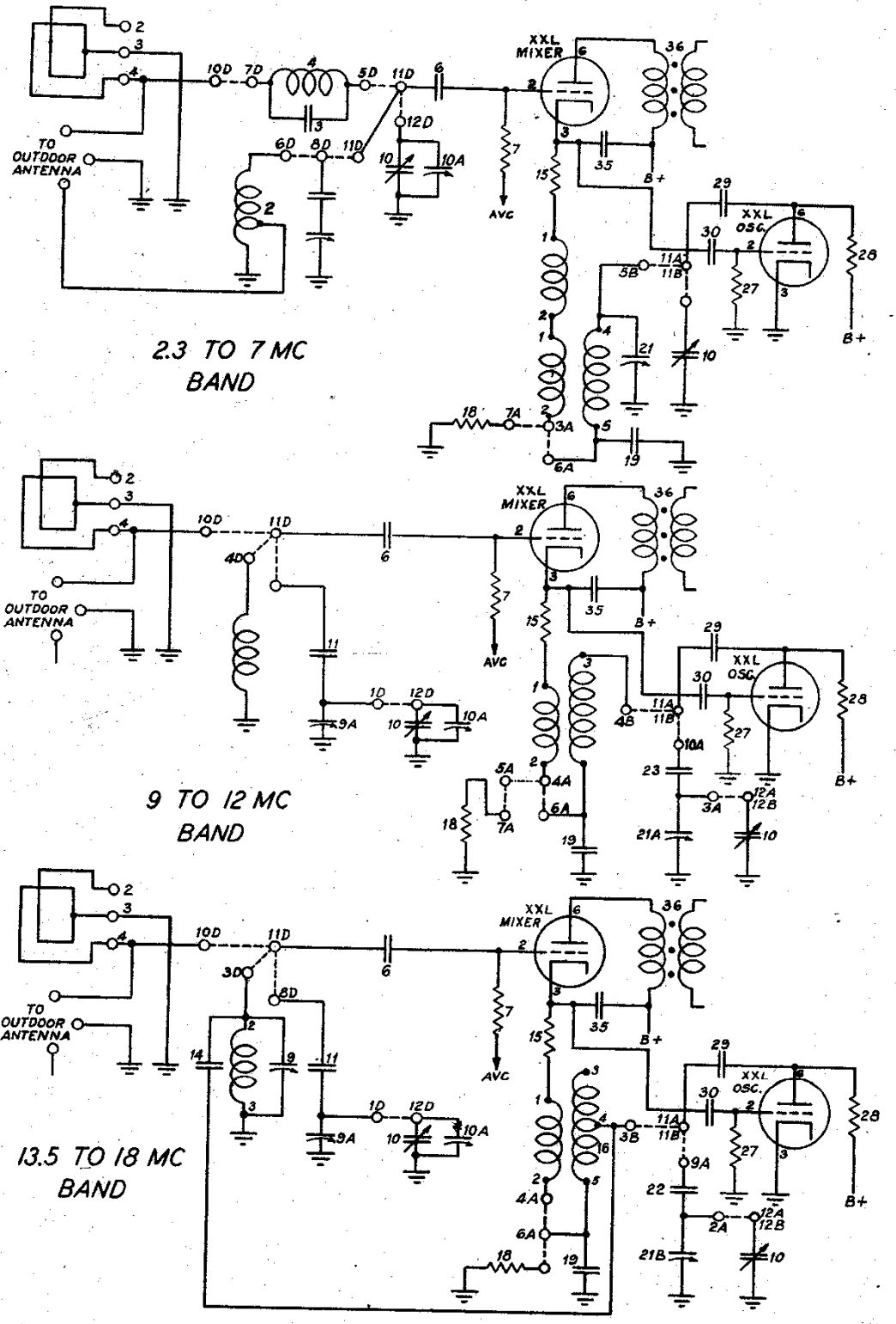
PHILCO RADIO & TELEV. CORP. MODELS 41-295, 41-300

See Philco Page 12-8



MODELS 41-295, 41-300 PHILCO RADIO & TELEV. CORP.

See Philco Page 12-65



**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. 45-2825, Model 41-260; and Part No. 45-2826, Model 41-265, will be required. This scale is placed underneath the pointer on the metal dial plate.

## Model 41-260

| Operations in Order | SIGNAL GENERATOR: Output Connections to Receiver | SIGNAL GENERATOR: Dial Setting | RECEIVER: Dial Setting | RECEIVER: Control Setting | RECEIVER: Adjust Compensators in Order | SPECIAL INSTRUCTIONS |
|---|---|---|---|---|---|---|
| 1 | Ant. Section of Tuning Cond. | 455 K. C. | Tuning Cond. Closed | Vol. Max. Range Switch "Brdcst" | 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 "Brdcst" | 6A | Note B |
| 3 | Loop to Radio Loop See Sig. Gen. Above | 1500 K. C. | 1500 K. C. | Vol. Max. Range Switch "Brdcst" | 14 | |
| 4 | Loop to Radio Loop See Sig. Gen. Above | 580 K. C. | 580 K. C. | Vol. Max. Range Switch "Brdcst" | 14A | Rock Comp. to "Max." Recheck Operations Nos. 2, 3 |
| 5 | Loop to Radio Loop See Sig. Gen. Above | 12 M. C. | 12 M. C. | Range Switch S. W. | 6, 13 | Note C |

## Model 41-265

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Ant. Section of Tuning Cond. | 455 K. C. | Tuning Cond. Closed | Vol. Max. Range Switch "Brdcst" | 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 "Brdcst" | 6A | Note B |
| 3 | Loop to Radio Loop See Sig. Gen. Above | 1500 K. C. | 1500 K. C. | Vol. Max. Range Switch "Brdcst" | 14 | |
| 4 | Loop to Radio Loop See Sig. Gen. Above | 580 K. C. | 580 K. C. | Vol. Max. Range Switch "Brdcst" | 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, 13 | Note C |

NOTE A — Compensator (22A) Model 41-260, must be adjusted before (22B) Model 41-260, 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. This procedure applies also to Model 41-265.
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 right position of both padders. Rail padder (13) Model 41-260; (1B) Model 41-265, slowly to maximum on the first peak.

# ADJUSTING ELECTRIC PUSH BUTTON TUNING

## MODELS 41-280, 41-285, 41-287, 41-290(121), 41-250, 41-255, 41-256, 41-295, 41-300

To adjust the electric push buttons accurately for reception of broadcast stations, a vacuum tube voltmeter such as Philco Models 027 and 028 should be used. In addition, an insulated padding screw driver, Part No. 45-2610, and Loktal aligning adapter, Part No. 45-2767, are required. With this equipment at hand proceed as follows:

Select seven 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 on the left and the highest frequency is placed in the eighth 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:

| Push Button | Frequency Range | Frequency Range |
|---|---|---|
| 1, 2, 3 | 540-1060 K. C. | 540-1030 K. C. |
| 4, 5 | 650-1110 K. C. | 650-1160 K. C. |
| 6, 7 | 920-1600 K. C. | 900-1600 K. C. |

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

1. Remove the 7C6 A. F. tube from its socket and insert the aligning adaptor, then replace the tube in the adaptor. Connect the negative terminal of the vacuum tube voltmeter to the wire which protrudes from the side of the adaptor. Attach the positive terminal of the voltmeter to the chassis.

2. Press in "Off-On" push button. Turn "Bands" knob to broadcast.

3. Set up the Model 077 Station Setter near the receiver and connect a loop aerial (made from a few turns of wire 12 inch 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."

4. Manually tune in the station to be set up on the first push button. After doing this set the indicator of the 077 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.

5. Turn "Bands" knob to push button position. Using the insulated screw driver, turn the "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 for maximum deflection of the vacuum tube voltmeter pointer. The push button is adjusted properly to the station at this point.

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 this receiver for operation with Philco Television Sets or Record Players are supplied with the instruments.



# PROCEDURE FOR SETTING AND OPERATING THE ELECTRIC PUSH BUTTON TUNING

The automatic tuning mechanism of each model is identical and 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 (On-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 | On-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 | | |

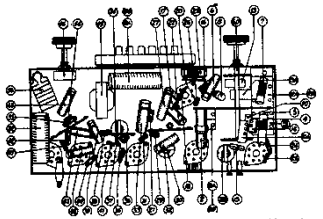
The second button from the left looking at the front of the cabinet corresponds to the two right-hand padder screws looking at the rear and covers the lowest frequency range.

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. This push button may also be used in conjunction with a Philco Wireless Record Player.

## MODEL 41-246



SIGNAL GENERATOR: When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the aerial section (stator plates) of the tuning condenser. Connect the ground or low side of the generator to the 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 7B5 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.

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 for each model below. Locations of the compensators are shown in the schematic diagram. If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator.

## MODEL 41-244

| Operations in Order | SIGNAL GENERATOR: Output Connections to Receiver | SIGNAL GENERATOR: Dial Setting | RECEIVER: Dial Setting | RECEIVER: Control Settings | RECEIVER: Adjust Compensators in Order | SPECIAL INSTRUCTIONS |
|---|---|---|---|---|---|---|
| 1 | Ant. Section of Tuning Condenser | 455 K. C. | Tuning Cond. closed | Vol. Max. Range Switch "Brdcst" | 34A, 30A 28A, 28B | Note A |
| 2 | Loop to Radio Loop See Sig. Gen. above | 1500 K. C. | 1500 K. C. | Vol. Max. Range Switch "Brdcst" | 11A, 9B | Note B |
| 3 | Loop to Radio Loop See Sig. Gen. above | 580 K. C. | 580 K. C. | Vol. Max. Range Switch "Brdcst" | 11B | Rock Comp. to "max." Recheck Operation No. 2 |
| 4 | Loop to Radio Loop See Sig. Gen. above | 12 M. C. | 12 M. C. | Range Switch "S. W." | 12A, 9A | Note C |
| 5 | Loop to Radio Loop See Sig. Gen. above | 18 M. C. | 18 M. C. | Range Switch "S. W." | 12B | Note D |

NOTE A—Compensator (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 select the first I. F. peak. Padder 28B 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—Adjust padder (12A) to the first signal peak from the tight position (maximum capacity).

NOTE D—Adjust padder (12B) to the second signal peak from the tight position (maximum capacity).



SEE MODELS BELOW

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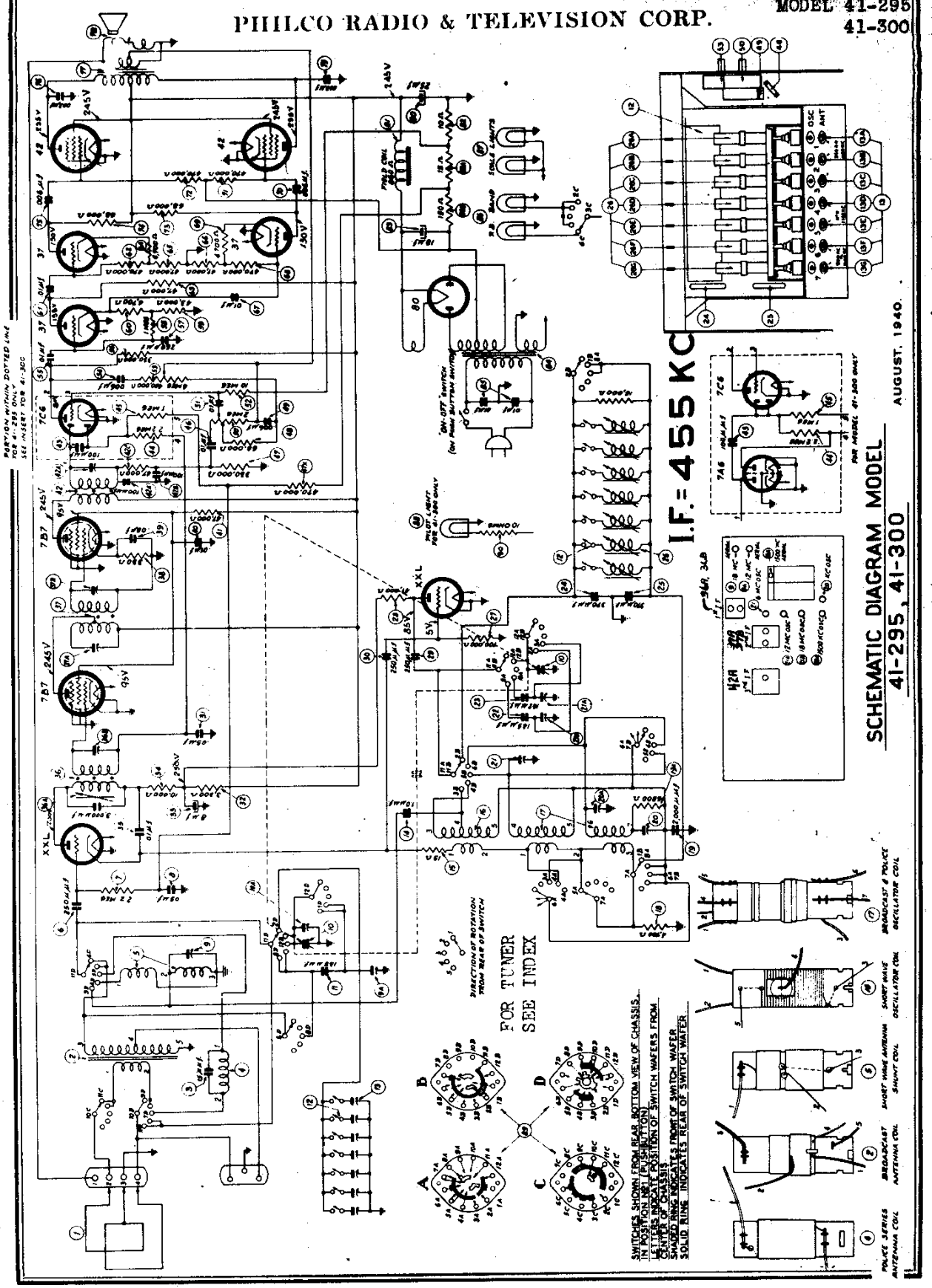
# PHILCO RADIO & TELEVISION CORP.

MODEL 41-295
41-300



MODELS 41-295
41-300

# PHILCO RADIO & TELEVISION CORP.

**Either a vacuum tube voltmeter or an audio output meter may be used as a signal indicator when adjusting the receiver.**

**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 terminal 4 of the loop aerial terminal panel at the rear of the chassis. The ground or low side of the signal generator is connected to the ground of the receiver.

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 loop is then placed two or three feet from the loop in the cabinet. Do not remove the receiving loop from the cabinet. It is necessary when adjusting the padders, that the receiver be left in the cabinet.

After connecting the aligning indicator, adjust the compensators in the order shown in the tabulation below. Locations of the compensators are shown on the schematic diagram. If the output 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 Setting | 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.1" Position | 36A, 36B, 37A, 37B, 42A | |
| 2 | Use Loop on Generator | 1500 K. C. | 1500 K. C. | Vol. Max. Range Switch "Brdcst" | 20A, 10A | Note A |
| 3 | Use Loop on Generator | 580 K. C. | 580 K. C. | Vol. Max. Range Switch "Brdcst" | 20 | Roll Tuning Condenser Note B |
| 4 | Use Loop on Generator | Repeat Operation No. 2 | | | | |
| 5 | Use Loop on Generator | 6 M. C. | 6 M. C. | Range Switch "Police" | 21 | Note C |
| 6 | Use Loop on Generator | 12 M. C. | 12 M. C. | Range Switch "S. W. 1" | 21A, 9A | Note D |
| 7 | Use Loop on Generator | 18 M. C. | 18 M. C. | Range Switch "S. W. 2" | 21B, 9 | Note E |

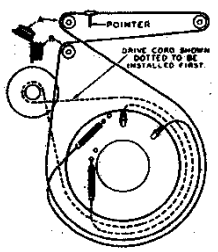
**NOTE A — DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale. The arrangement of the drive cable in this position is shown in the schematic.

**NOTE B — When adjusting the compensator 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 — Adjust compensator (21) to the Second signal peak from the tight (closed) position.** The tuning condenser should also be Rolled when the padder is being adjusted on this peak. See Note B on how to Roll the Condenser.

**NOTE D — Adjust compensator (21A) to the First signal peak from the tight (closed) position.** If the compensator is correctly adjusted the image signal will be weakly heard by leaving the receiver dial at 12 M. C. and turning the signal generator to 11.090 M. C.

**NOTE E — Adjust compensator (21B) to the Second signal peak from the tight (closed) position.** If the compensator is correctly adjusted the image signal will be weakly heard by leaving the receiver at 18 M. C. and turning the signal generator to 18.910 M. C. When adjusting compensator (9) roll the tuning condenser. See Note B on how to roll the condenser.




(POINTER AT LOW FREQUENCY END OF DIAL.) TUNING CONDENSER MAXIMUM CAPACITY (FULLY CLOSED)

INSTALLATION OF DRIVE CORD