

MODEL 40-81(121,122)
 MODEL 40-88(121)
 MODELS 40-140,40-145,
 40-507

PHILCO RADIO & TELEV. CORP.

Alignment

Models 40-140, 40-145, 40-507.

ALIGNMENT OF COMPENSATORS

EQUIPMENT REQUIRED

1. **Signal Generator** with a frequency range from 116 to 36,000 K. C., such as Philco Model 077.
2. **Aligning Indicator**, Philco Model 027 or 028, vacuum tube voltmeter and circuit tester incorporates sensitive audio output

- meters and vacuum tube voltmeters. Either of these instruments can be used as an aligning indicator.
3. **Fibre Handle Screw Driver**, Philco Part No. 45-2610. When using the vacuum tube voltmeter for aligning the receiver, an aligning adaptor Part No. 45-2767 is required.

CONNECTING ALIGNING METERS

1. **Audio Output Meter:** If the Philco Models 027 and 028 audio output meters are used, they are connected to the speaker voice coil terminals or the plate and screen terminals of the 7B5 tube. Adjust the meter to use the 0 to 10 volt A. C. scale.

2. **Vacuum Tube Voltmeter:** To use the vacuum tube voltmeter as an aligning indicator make the following connections:

Adjusting I. F. Circuit: Remove the 1223 R. 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 light colored wire which protrudes from the side of the adaptor. Attach the positive terminal of the vacuum tube voltmeter to the black wire of the adaptor.

Adjusting R. F. Circuit: To adjust the R. F. circuit, the aligning adaptor is inserted in the 7C6 second detector tube socket. The vacuum tube voltmeter remains connected to the adaptor as given in the paragraph above. With the voltmeter connected in this manner, a very sensitive indication of the A. V. C. voltage is obtained when the padders are adjusted.

After connecting the aligning adaptors, adjust the compensators as shown in the tabulation below. Locations of the compensators are shown in Schematic Diagram. If the aligning 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	Dial Setting	Dial Setting	Control Settings	Adjust Compensators	
1	No. 1 Ter. on Loop Panel Note B	455 K. C.	580 K. C.	Vol. Cont. Max. Range Switch "Brdcat"	33A, 33B, 28A, 28B	Dial Push-Button "In" Model 40-145
2	Use Loop, Note C	18.0 M. C.	18.0 M. C.	Vol. Cont. Max. Range Switch "S.W."	27A, 2A, Note D	Check Image at 17,000 K. C.
3	Use Loop, Note C	1500 K. C.	1500 K. C.	Range Switch "Brdcat"	25A, 1A	Note A
4	Use Loop, Note C	580 K. C.	580 K. C.	Range Switch "Brdcat"	25	Roll Tuning Condenser
5	Use Loop, Note C	1500 K. C.	1500 K. C.	Range Switch "Brdcat"	25A, 2A	
6	Use Loop, Note C	18.0 M. C.	18.0 M. C.	Range Switch "S.W."	2A, Note D	Roll Tuning Condenser & Adjust Padder to First Peak from Tight Position

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 — When adjusting the I. F. padders the high side of the signal generator output is connected through a .1 mfd. condenser to terminal No. 1 of the loop terminal panel at the rear of the chassis. The ground or low side of the generator is connected to the chassis of the receiver.

NOTE C — When aligning the R. F. Circuits a loop is made from a few turns of wire and connected to the generator output terminals; the signal generator is then placed two or three feet from the loop in the cabinet.

NOTE D — S. W. Oscillator compensator (27A) is located on top of the tuning condenser. Antenna compensators (1A) and (2A) are located on the loop. When adjusting the "Ant" compensators, the receiver loop should be held in place against the back of the cabinet.

Models 40-81, Codes 121, 122

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	See Paragraph on Signal Generator above	455 K. C.	580 K. C.	Vol. Max.	17A, 9B, 9A	See Paragraph on Signal Generator above
2	Use Loop on Generator	1500 K. C.	1500 K. C.	Vol. Max.	8B, 8A	Padder location Fig. 1 Note A

Model 40-88, Code 121

1	See Signal Generator Paragraph above	455 K. C.	580 K. C.	Vol. Max.	21A, 20B, 20A	
2	Use Loop on Generator	18 M. C.	18 M. C.	Vol. Max. Range Switch "S. W."	8B	Note A
3	Use Loop	1400 K. C.	1400 K. C.	Range Switch "Brdcat"	12, Screw, 8A	
4	Use Loop	580 K. C.	580 K. C.	Range Switch "Brdcat"	12A, Nut	Roll Tuning Condenser
5	Use Loop	1400 K. C.	1400 K. C.	Range Switch "Brdcat"	12, Screw, 8A	
6	Use Loop	18 M. C.	18 M. C.	Range Switch "S. W."	3	See Paragraph on Signal Generator above

NOTE A — DIAL CALIBRATION: Before adjusting the R. F. padders the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser in the closed position (maximum capacity) set the dial pointer on the small dot below 550 K. C.

BATTERY CURRENT:
 "A" Battery, 200 M. A. Model 40-81 Battery, 5.6 M. A.

BATTERY CURRENT:
 "A" Battery, 250 M. A. Model 40-88 "B" Battery, 8 M. A.