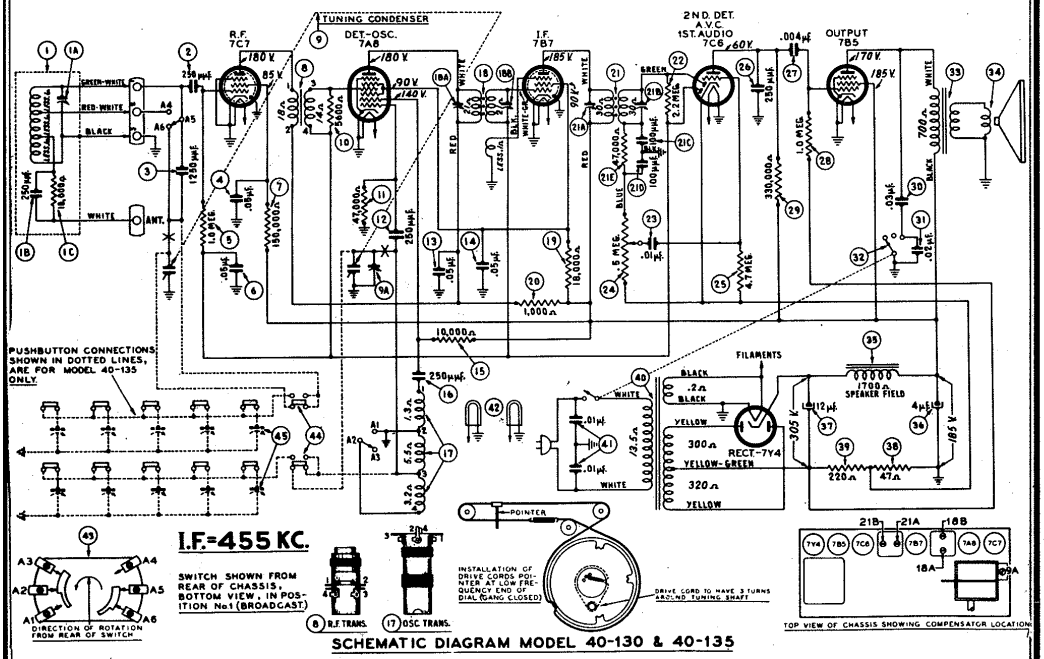
MODELS 40-503, 40-506,
MODEL 40-525
Chassis, Tuner

PHILCO RADIO & TELEV. CORP.

MODELS 40-130, 40-135
Schematic, Voltage, Tuner
Chassis, Trimmers



SCHEMATIC DIAGRAM MODEL 40-130 & 40-135

JUNE, 1939.

Replacement Parts — Models 40-130 and 40-135

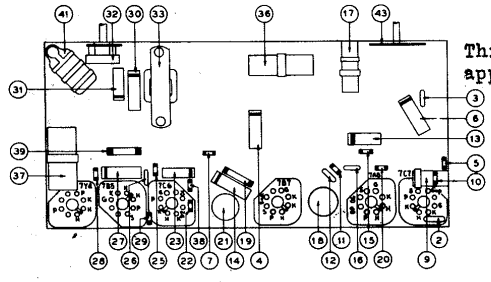
SCHE. No.	DESCRIPTION	PART No.
1	Loop Assembly	38-9891
1A	Compensator	31-6318
1B	Mica Cond. (250 mmfd.)	61-0033
1C	Resistor (10,000 ohms, ½ watt)	33-310339
2	Mica Cond. (250 mmfd.)	61-0033
3	Mica Cond. (1250 mmfd.)	5886
4	Tubular Cond. (.05 mfd.)	30-4518
5	Resistor (1.0 meg., ½ watt)	33-510339
6	Tubular Cond. (.05 mfd.)	30-4518
7	Resistor (150,000 ohms, ½ watt)	33-415339
8	R. F. Transformer	32-3282
9	Tuning Condenser	31-2374
10	Resistor (5600 ohms, ½ watt)	33-356339
11	Resistor (47,000 ohms, ½ watt)	33-347339
12	Mica Cond. (250 mmfd.)	61-0033
13	Tubular Cond. (.05 mfd.)	30-4518
14	Tubular Cond. (.05 mfd.)	30-4518
15	Resistor (10,000 ohms, ½ watt)	33-310339
16	Mica Cond. (250 mmfd.)	61-0033
17	Oscillator Transformer	32-3212
18	1st I. F. Trans. Assy.	32-3210
19	Resistor (18,000 ohms, 1 watt)	33-318439
20	Resistor (1,000 ohms, ½ watt)	33-210339
21	2nd I.F. Trans. Assy.	32-3281
22	Resistor (2.2 meg., ½ watt)	33-522339
23	Tubular Cond. (.01 mfd.)	30-4572
24	Volume Control (.5 meg.)	33-5332
25	Resistor (4.7 meg., ½ watt)	33-547339
26	Mica Cond. (250 mmfd.)	61-0033
27	Tubular Cond. (.004 mfd.)	30-4578
28	Resistor (1.0 meg., ½ watt)	33-510339
29	Resistor (330,000 ohms, ½ watt)	33-433339
30	Tubular Cond. (.03 mfd.)	30-4449
31	Tubular Cond. (.02 mfd.)	30-4481
32	Tone Control and On-Off Switch	49-1520
33	Output Transformer	32-8063
34	Cone and Voice Coil Assy. (Spkr., Part No. 36-1478-3)	36-4085
35	Field Coil (Replace Spkr. Part No. 36-1478)	
36	Electrolytic Cond. (4 mfd., 400 V.)	30-2401
37	Electrolytic Cond. (12 mfd., 400 V.)	30-2409
38	Resistor (47 ohms, ½ watt)	33X47331
39	Resistor (220 ohms, ½ watt)	33-122431
40	Power Trans. (115 V., 50-60 cycles)	32-8068
41	Sakelite Cond. (.01-.01 mfd.)	3903-DG
42	Pilot Lamps	34-2064
43	Wave Switch	42-1494
44	Pushbutton Switch (Model 40-135 only)	42-1528
45	Padder Strip (Model 40-135 only)	31-6315

MISCELLANEOUS PARTS

Cabinet (Model 40-130)	10394A
Cabinet (Model 40-135)	103948
Cable and Plug (Power Supply)	L-3189

SCHE. No.	DESCRIPTION	PART No.
	Clip (R. F. and Osc. Trans. Mtg.)	28-5002
	Dial	27-5306
	Drive Cord Assy. (Pointer)	31-2390
	Drive Cord Assy. (Tuning Cond.)	31-2400
	Escutcheon (Pushbutton) (Model 40-135)	28-5742
	Escutcheon Pin (Model 40-135)	W-1074
	Insulating Bushing (Insulate Drive Shaft)	27-9437
	Knobs (Tuning, Tone, Volume and Wave Switch)	27-4332
	Knobs (Pushbutton, Model 40-135)	27-4824
	Pilot Lamp Socket Assy.	38-9904
	Pointer	56-1532

SCHE. No.	DESCRIPTION	PART No.
	Rubber Bushing (Tuning Cond. Drive)	27-9432
	Spring (Drive Cord, Tuning Cond.)	28-8751
	Spring (Drive Cord, Pointer)	28-8953
	Spring (Tuning Shaft Assy.)	28-8955
	Speaker	36-1478
	Socket (Loktal, all tubes)	55-0575
	Tuning Shaft	56-6052
	Tuning Drive Drum Assy.	38-9883
	Tab (Dial, Model 40-135)	27-5326
	Tab (Television, Model 40-135)	27-9450
	Tab Kit (Model 40-135)	40-6473
	Washer "C" Type, Tuning Shaft)	28-2043



This parts layout applies to Models 40-130, 40-135, 40-503, 40-506, and 40-525.

FIG. 1. PART LOCATIONS, UNDERSIDE OF CHASSIS.

Model 40-130 is dial tuned and assembled in cabinet type "T".

* Model 40-135 is equipped with six electric push buttons for automatically selecting stations in addition to dial tuning. Five push buttons are used for stations one of which can be used in combination with Special type PHILCO TELEVISION receivers for reception of television sound programs. The sixth push button selects dial tuning. The push buttons in this model cover frequency ranges as follows:

540 to 1030 K. C. 740 to 1300 K. C.
650 to 1100 K. C. 900 to 1470 K. C.
1160 to 1600 K. C.

The procedure for adjusting the push buttons for reception of stations is similar to the method described in volume ten the only difference being that the frequency range of each button is different.

Philco television sets and record players contain instructions for setting up and adjusting the push-button in model 40-135.

TUNING RANGES: 540 to 1550 K. C.; 1.5 to 3.3 M. C.
INTERMEDIATE FREQUENCY: 455 K. C.
POWER SUPPLY: 115 volts A. C., 60 cycles.
POWER CONSUMPTION: 35 watts.

See Philco page 10-16.

*NOTE: Push button data and tuning ranges apply for Models 40-503, 40-506 and 40-525 also.

MODELS 40-130,40-135
MODEL 40-165
MODELS 40-503,40-506
MODEL 40-525

PHILCO RADIO & TELEV. CORP.

Alignment

40-503, 40-506,40-130, 40-135, 40-525

ALIGNMENT OF COMPENSATORS

EQUIPMENT REQUIRED

(1) **Signal Generator:** Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 36,000 K. C. is the correct instrument for this purpose.

(2) **Aligning Indicator:** Philco Models 027 or 028 Vacuum Tube Voltmeters and Circuit Testers incorporate sensitive vacuum tube voltmeters and audio output meters and are recommended.

(3) Philco Fiber Handle Screw Driver, Part No. 45-2610. Aligning adaptor Part No. 45-2767, when using the vacuum tube voltmeter for alignment.

CONNECTING ALIGNING METERS

Audio Output Meter: Philco Model 027 or 028 Audio Output Meters is connected to the voice coil terminals of the speaker or the plate and screen of the 7B5 tube and adjusted for the 0 to 10 volt A. C. scale.

Vacuum Tube Voltmeter: To use the Vacuum Tube Voltmeter as an alignment indicator make the following connections:

(1) **Adjusting I. F. Circuit:** Remove the 7C7 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.

(2) **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 Fig. 1. 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 Settings	Adjust Compensators in Order	
1	No. 1 Ter. on Panel Note B	455 K. C.	580 K. C.	Vol. Cont. Max. Range Switch "Brdcst"	21B, 21A, 18B, 18A	Dial Push-Button "In" Model 40-125
2	Loop Note C	1500 K. C.	1500 K. C.	Vol. Cont. Max. Range Switch "Brdcst"	9A, 1A Note D	Note A

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. a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed two or three feet from the loop in the cabinet.

NOTE D — Oscillator compensator (9A) is located on top of the tuning condenser. Antenna compensator (1A) is located on the loop. When adjusting the "ANT" compensators the receiver loop should be held in place against the back of the cabinet.

Model 40-165

Signal Generator: When adjusting the I. F. padders, the high side of the signal generator 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 signal generator is connected to the chassis of the receiver.

When aligning the R. F. padders a loop antenna is made from a few turns of wire and connected to the signal generator output terminals; the generator is then placed two or three feet from the loop in the cabinet. Do not remove the receiver loop from the cabinet. It is necessary when adjusting the padders, that the receiver be left in the cabinet.

Operations in Order	SIGNAL GENERATOR		RECEIVER			Special Instructions
	Output Connections to Receiver	Frequency Setting	Dial Setting	Control Settings	Adjust Compensators	
1	High Side to No. 1 Ter. Loop Panel	455 K. C.	580 K. C. No Signal	Range Switch "Brdcst." Vol. Max. Dial Push-Button "In"	37A, 37B, 34A, 34B	See paragraph on signal generator above
2	Use Loop on Generator	18.0 M. C.	18.0 M. C.	Range Switch "SW"	61A	Note A. Image should be 910 K.C. below 18 M.C.
3	Use Loop on Generator	1500 K. C.	1500 K. C.	Range Switch Brdcst.	26, 25	
4	Use Loop on Generator	580 K. C.	580 K. C.	Range Switch Brdcst.	26A	Roll tuning condensor
5	Use Loop on Generator	1500 K. C.	1500 K. C.	Range Switch Brdcst.	26, 25	
6	Use Loop on Generator	18.0 M. C.	18.0 M. C.	Range Switch "SW"	2A	Note B, 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 Schematic Diagram.

NOTE B — Turn loop padder to closed position (maximum capacity), then adjust to the first signal peak from this position; at the same time roll the tuning condenser. See Note C.

NOTE C — When adjusting the low frequency compensator of Range One (Broadcast) or the antenna compensators of the high frequency tuning ranges; 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. Continue turning compensator in the direction that gives greatest signal 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 there is no further gain in output reading.

SEE MODELS BELOW

PHILCO RADIO & TELEVISION CORP.

SETTING AND OPERATING ELECTRIC PUSH-BUTTON TUNING

In order to adjust the electric automatic tuning push-button accurately for reception of broadcast stations, a signal generator, such as Philco Model 077, and a padding screw driver, Philco Part No. 45-2610, are required. With this equipment at hand, proceed as follows: —

1 — Select five (5); seven (7) or eight (8) of the most popular stations received in the locality (depending on the number of push-buttons on the model to be adjusted). Insert the station call letters into the windows above the buttons. The station with the lowest frequency is placed in the first button on the left and the highest frequency station in the extreme right button. Each push-button is adjusted by two set screws. These set screws are located on the rear of the chassis or push-button unit. Each set of screws is numbered and covers a frequency range as follows: —

FREQUENCY RANGES OF PUSH-BUTTONS

Models 40-100, 40-110

Push-Button	Frequency Range
1	540-1030 K. C.
2	650-1100 K. C.
3	650-1100 K. C.
4	740-1240 K. C.
5	1160-1600 K. C.
6	Dial

Models 40-105, 40-200

Push-Button	Frequency Range
1, 2, 3	540-1030 K. C.
4, 5	670-1160 K. C.
6, 7, 8	900-1600 K. C.

Models 40-160, 40-165

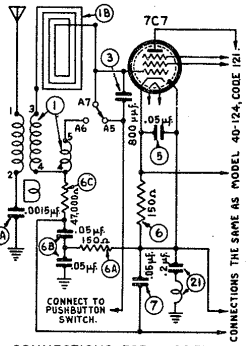
Push-Button	Frequency Range
1	540-1000 K. C.
2	650-1100 K. C.
3	740-1300 K. C.
4	900-1500 K. C.
5	1100-1600 K. C.

Models 40-124, 40-125, 40-135, 40-145, 40-503, 40-506, 40-507, 40-525 (121), 40-526 (121)

Push-Button	Frequency Range
1	540-1030 K. C.
2	650-1100 K. C.
3	740-1240 K. C.
4	900-1470 K. C.
5	1160-1600 K. C.
6	Dial

Models 40-150, 40-155, 40-180, 40-185, 40-190, 40-508, 40-509

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



CONNECTIONS FOR MODEL 40-124 CODE 122.

Looking at the front of the cabinet, the first button on the left is adjusted by "Osc." and Ant." set screws No. 1; the next push-button by "Osc." and "Ant." set screws No. 2, and the remaining push-buttons in order.

2 — Turn the receiver "on" and set the "Tuning Range Selector" or push-button for "Dial" tuning.

3 — Set up the Model 077 signal generator about 3 feet from 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".

4 — Manually tune in on the radio the first station to be set up; (usually No. 1 push-button first). 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.

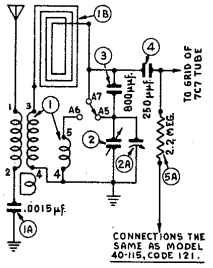
5 — Turn the receiver tuning range selector to "push-button" and press in No. 1 button. (Models without a tuning range selector, simply press in push-button to be set up). Using the insulated screw driver, turn the No. 1 "Osc." screw until the broadcast station identified by the signal generator is heard; then turn signal generator indicator off the frequency of the station.

6 — Readjust No. 1 "Osc." and "Ant." screws until the station is heard clearly and distinctly. The adjustment of No. 1 push-button is then complete. After setting up the first station the same procedure as outlined above is used for the remaining stations.

While the above procedure is satisfactory in setting up push-buttons for stations, a very accurate adjustment can be obtained with a vacuum tube voltmeter. The instructions for using a vacuum tube voltmeter will be found on page 10 under "Using Vacuum Tube Voltmeter for Aligning Compensators and Adjusting Push-Buttons."

When any of these models are to be set up to receive the sound of a television program, tuned in by special type Philco television sets, or if they are to be used in conjunction with a Philco Record Player, push-button No. 1 should be used. To adjust the push-button on these instruments, the same procedure as outlined above is used.

Further details for setting up this receiver for operation with Philco Television sets and Record Players are supplied with the instruments.



CONNECTIONS FOR MODEL 40-115 CODE 122.

FEBRUARY, 1940.

MODEL 40-115, CODE 122

Model 40-115, Code 122, is similar to Code 121 with the addition of a loop aerial mounted inside the cabinet and several part changes in the aerial circuit. These changes are shown in the following circuit diagram and parts list. The service information in RIDER MANUAL VOL. XI for Model 40-115, Code 121, with these changes, applies to Model 40-115, Code 122.

SCHEMATIC NUMBER	DESCRIPTION	PART No. CODE 122
1	Antenna Transformer	32-3404
1A	Tubular Condenser (.0015 mfd.)	30-4555
1B	Loop Assembly	32-3405
2	Tuning Condenser	31-2450
3	Mica Condenser (800 mmfd.)	30-1135
	Cabinet	10432B

MODEL 40-124, CODE 122

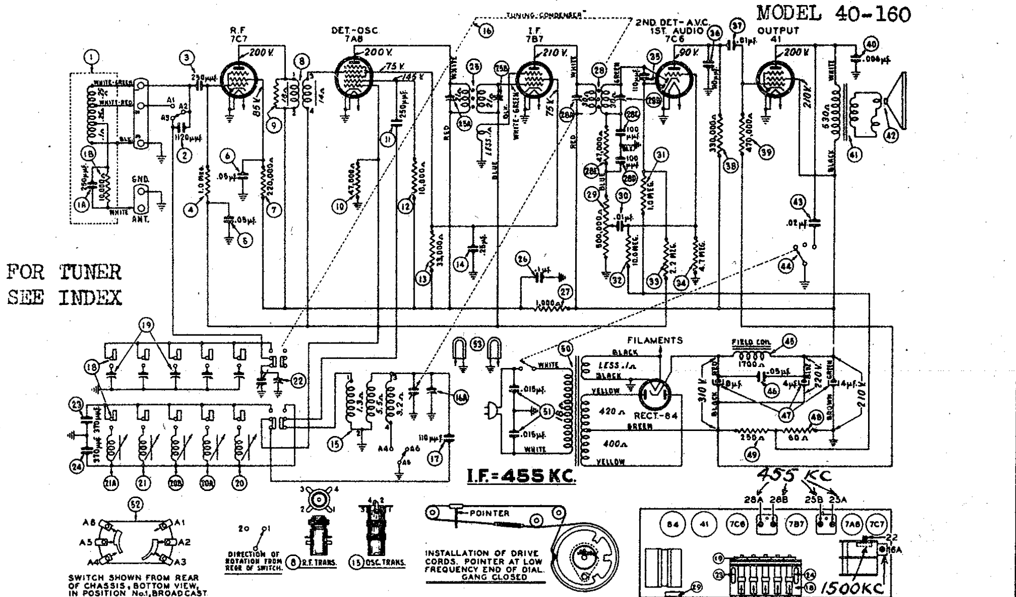
Model 40-124, Code 122, is similar to Code 121 with the addition of a loop aerial mounted inside the cabinet and several part changes in the aerial circuit. These changes are shown in the following circuit diagram and parts list. The service information in RIDER'S VOLUME XI, for Model 40-124, Code 121, with these changes, applies to Model 40-124, Code 122.

SCHEMATIC NUMBER	DESCRIPTION	PART No. CODE 122
1	Antenna Transformer	32-3404
1A	Tubular Condenser (.0015 mfd.)	30-4555
1B	Loop Assembly	32-3411
2	Tuning Condenser	31-2450
3	Mica Condenser (800 mmfd.)	30-1135
4	Not used.	
5	Tubular Condenser (.05 mfd.)	30-4519
6	Resistor (150 ohm, ½ watt)	33-115336
6A	Resistor (150 ohm, ½ watt)	33-115336
6B	Tubular Condenser (.05, .05 mfd.)	30-4522
6C	Resistor (47,000 ohms, ½ watt)	33-347339
7	Tubular Condenser (.05 mfd.)	30-4519
21	Choke and Condenser Assembly (.2 mfd.)	76-1034

PHILCO RADIO & TELEVISION CORP.

MODELS 40-130, 40-135, 40-170CS
MODEL 40-140, 40-145
MODEL 40-160

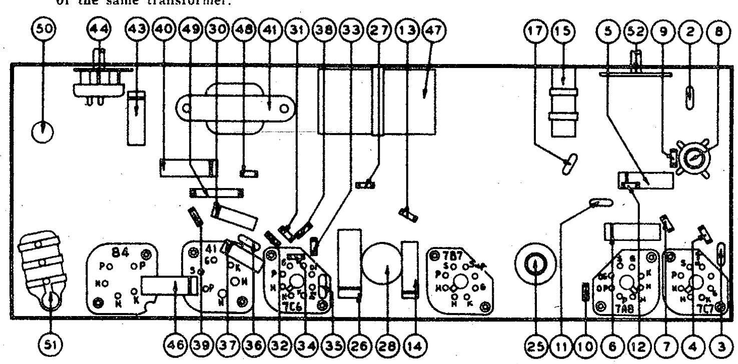
FOR TUNER
SEE INDEX



SCHEMATIC DIAGRAM MODEL 40-160

Run 3 — To prevent oscillation on push-button tuning, resistors (9) **Part No.** 33-268339 were removed from R. F. transformer (9) secondary. A new resistor Part No. 33-260339 is now added across primary winding of the same transformer.

CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOL.VIII



40-170CS

Models 40-135 and 40-170 are similar in design with the exception of the cabinets, speakers, and several circuit changes. The Service information for Model 40-135 covers the Model 40-170 with the exception of the part changes listed below.

Sche. No.	Description	Part No.
1	Loop Assembly	38-9985
3	Mica Condenser	30-1140
30	Tubular Condenser (.006 mfd., 600 V.)	30-4504
31	Tubular Condenser (.02 mfd., 600 V.)	30-4599
34	Cone and Voice Coil Assembly (For Speaker Part No. 36-1480-3)	36-4086
	Cable (A. C.)	L-3240
	Cabinet	10453A
	Speaker	36-1480

PRODUCTION CHANGES

MODELS 40-130 RUN 3, 40-135, 40-170CS

To prevent oscillation at the low end of the broadcast band and 2nd I. F. transformer (21) changed from Part No. 32-3281 to Part No. 32-3382.

MODEL 40-170CS

The speaker, Part No. 36-1480-3 and cone assembly, Part No. 36-4086 listed in No. 1 change notice for Model 40-170CS has been changed on later production receivers to speaker 36-1480-4. The cone assembly for this new speaker is 36-4136.

PRODUCTION CHANGES

MODEL 40-140

Dial Scale changed from Part No. 27-5507 to Part No. 27-5552.
Tone Control (27) changed from Part No. 42-1496 to 33-5333.

MODEL 40-145

Dial Scale changed from Part No. 27-5507 to Part No. 27-5552.
Tone Control (27) changed from Part No. 42-1496 to 33-5333.

MODELS 40-140, 40-145

Operating on 115 Volt, 25 Cycle and 220 Volt, 60 Cycle Current

To operate Model 40-140 and 40-145 on 115 volts, 25 cycle current the power transformer (52) Part No. 32-8064, 115 volts, 60 cycle listed in the Service Bulletin, must be changed to Part No. 32-8075, 115 volts, 25 cycle. In addition, Electrolytic Condenser (49) Part No. 30-2409, 12 mfd., 400 volts must be changed to Part No. 30-2438, 20 mfd., 400 volts.

Model 40-140 can be operated on 220 volts, 60 cycle current by changing the power transformer (52), Service Bulletin 328, from Part No. 32-8064, 115 volts, 60 cycle to Part No. 32-8093, 220 volts, 60 cycle. The new transformer Part No. 32-8093 can be operated on either 115 or 220 volts, 60 cycle current by connecting the primary wiring as listed below:

Power Supply: 220 Volts—Red and Yellow to White. 110 Volts—Red to White.
Connect together: 220 Volts—Black and White to Red. 110 Volts—Black and White to Re and Yellow.

To prevent oscillation at the low end of the broadcast band the 2nd I. F. transformer (33) changed from Part No. 32-3281 to Part No. 32-3382.

The cabinet and B. C. loop assembly was changed on late production receivers as follows:

Model 40-140	Original Part No.	New Part No.	Model 40-145	Original Part No.	New Part No.
Cabinet	10395A	10464A	Cabinet	10395B	10464B
B. C. Loop	38-9892	76-1009	B. C. Loop	38-9892	76-1009

PHILCO . . . . RADIO SERVICE BULLETIN No. 327

RADIO MANUFACTURERS SERVICE — Your Guarantee of Best Radio Service — A PHILCO SERVICE PLAN

Models 40-130, 40-135

SPECIFICATIONS

TYPE OF CIRCUIT: Models 40-130 and 40-135 are six (6) tube alternating current operating superheterodyne receivers employing the new Philco built-in aerial system which eliminates an outside aerial and reduces local interference to a minimum. One feature of the built-in super aerial system is that a statically shielded loop is used. This permits the receiver to be turned to the position where the minimum amount of interference is picked up or, if interference is not present, the receiver may be set in the position where best reception is obtained.

In addition, other features of design are: Two tuning ranges; Philco high efficiency Loktal tubes; special high gain R. F. stage; automatic volume control, tone control and a Beam power audio output stage. In general, these models are similar but differ in their tuning mechanisms and cabinets.

Model 40-130 is dial tuned and assembled in cabinet type "T".

Model 40-135 is equipped with six electric push buttons for automatically selecting stations in addition to dial tuning. Five push buttons are used for stations one of which can be used in combination with Special type PHILCO TELEVISION receivers for reception of television sound programs. The sixth push button selects dial tuning. The push buttons in this model cover frequency ranges as follows:

540 to 1030 K. C.	740 to 1300 K. C.
650 to 1100 K. C.	900 to 1470 K. C.
1160 to 1600 K. C.	

The procedure for adjusting the push buttons for reception of stations is similar to the method described in Service Bulletin No. 325, the only difference being that the frequency range of each button is different.

Philco television sets and record players contain instructions for setting up and adjusting the push-button in model 40-135.

TUNING RANGES: 540 to 1550 K. C.; 1.5 to 3.3 M. C.

INTERMEDIATE FREQUENCY: 455 K. C.

POWER SUPPLY: 115 volts A. C., 60 cycles.

POWER CONSUMPTION: 35 watts.

AUDIO OUTPUT: 1½ watts.

PHILCO TUBES USED: 7C7, R. F.; 7A8, Oscillator and Detector; 7B7, I. F.; 7C6, Second Detector, First Audio; 7B5, Output; 7Y4, Rectifier.

CABINET DIMENSIONS: Height, 10⅜"; Width, 14½"; Depth, 8⅛".

ALIGNMENT OF COMPENSATORS

EQUIPMENT REQUIRED

(1) **Signal Generator:** Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 36,000 K. C. is the correct instrument for this purpose.

(2) **Aligning Indicator:** Philco Models 027 or 028 Vacuum Tube Voltmeters and Circuit Testers incorporate sensitive vacuum tube voltmeters and audio output meters and are recommended.

(3) Philco Fiber Handle Screw Driver, Part No. 45-2610. Aligning adaptor Part No. 45-2767, when using the vacuum tube voltmeter for alignment.

CONNECTING ALIGNING METERS

Audio Output Meter: Philco Model 027 or 028 Audio Output Meters is connected to the voice coil terminals of the speaker or the plate and screen of the 7B5 tube and adjusted for the 0 to 10 volt A. C. scale.

Vacuum Tube Voltmeter: To use the Vacuum Tube Voltmeter as an alignment indicator make the following connections:

(1) **Adjusting I. F. Circuit:** Remove the 7C7 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.

(2) **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 Fig. 1. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

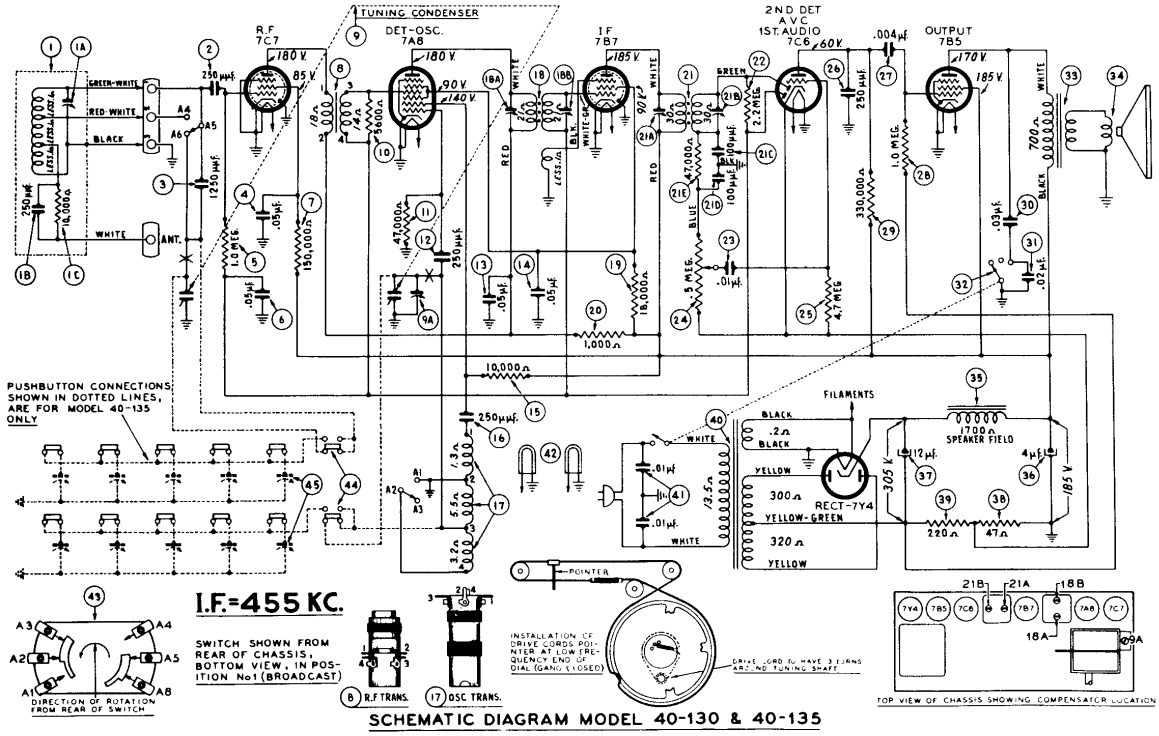
Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	No. 1 Ter. on Panel Note B	455 K. C.	580 K. C.	Vol. Cont. Max. Range Switch "Brdcst"	21B, 21A, 18B, 18A	Dial Push-Button "In" Model 40-125
2	Loop Note C	1500 K. C.	1500 K. C.	Vol. Cont. Max. Range Switch "Brdcst"	9A, 1A Note D	Note A

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. a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed two or three feet from the loop in the cabinet.

NOTE D — Oscillator compensator (9A) is located on top of the tuning condenser. Antenna compensator (1A) is located on the loop. When adjusting the "ANT" compensators the receiver loop should be held in place against the back of the cabinet.



SCHEMATIC DIAGRAM MODEL 40-130 & 40-135

Replacement Parts — Models 40-130 and 40-135

SCHE. No.	DESCRIPTION	PART No.
1	Loop Assembly	38-9801
1A	Compensator	31-6318
1B	Mica Cond. (250 mmfd.)	61-0033
1C	Resistor (10,000 ohms, ½ watt)	33-310339
2	Mica Cond. (250 mmfd.)	61-0033
3	Mica Cond. (1250 mmfd.)	5886
4	Tubular Cond. (.05 mfd.)	30-4518
5	Resistor (1.0 meg., ½ watt)	33-510339
6	Tubular Cond. (.05 mfd.)	30-4518
7	Resistor (150,000 ohms, ½ watt)	33-415339
8	R. F. Transformer	32-3283
9	Tuning Condenser	31-2374
10	Resistor (5600 ohms, ½ watt)	33-256339
11	Resistor (47,000 ohms, ½ watt)	33-347339
12	Mica Cond. (250 mmfd.)	61-0033
13	Tubular Cond. (.05 mfd.)	30-4518
14	Tubular Cond. (.05 mfd.)	30-4518
15	Resistor (10,000 ohms, ½ watt)	33-310339
18	Mica Cond. (250 mmfd.)	61-0033
17	Oscillator Transformer	32-3212
18	1st I. F. Trans. Assy.	32-3210
19	Resistor (18,000 ohms, 1 watt)	33-318439
20	Resistor (1,000 ohms, ½ watt)	33-210339
21	2nd I. F. Trans. Assy.	32-3281
22	Resistor (2.2 meg., ½ watt)	33-522339
23	Tubular Cond. (.01 mfd.)	30-4572
24	Volume Control (.5 meg.)	33-5332
25	Resistor (4.7 meg., ½ watt)	33-547339
26	Mica Cond. (250 mmfd.)	61-0033
27	Tubular Cond. (.004 mfd.)	30-4578
28	Resistor (1.0 meg., ½ watt)	33-510339
29	Resistor (330,000 ohms, ½ watt)	33-433339
30	Tubular Cond. (.03 mfd.)	30-4449
31	Tubular Cond. (.02 mfd.)	30-4481
32	Tone Control and On-Off Switch	42-1520
33	Output Transformer	32-8063
34	Cone and Voice Coil Assy. (Spkr. Part No. 38-1478-3)	38-4085
35	Field Coil (Replace Spkr. Part No. 36-1478)	
36	Electrolytic Cond. (4 mfd., 400 V.)	30-2401
37	Electrolytic Cond. (12 mfd., 400 V.)	30-2409
38	Resistor (47 ohms, ½ watt)	33-047331
39	Resistor (220 ohms, 1 watt)	33-122431
40	Power Trans. (115 V., 50-60 cycles)	32-8084
41	Bakelite Cond. (.01-.01 mfd.)	3903-DG
42	Pilot Lamps	34-2084
43	Wave Switch	42-1494
44	Pushbutton Switch (Model 40-135 only)	42-1528
45	Padder Strip (Model 40-135 only)	31-6315

MISCELLANEOUS PARTS

Cabinet (Model 40-130)	10394A
Cabinet (Model 40-135)	10394B
Cable and Plug (Power Supply)	L-3199

SCHE. No.	DESCRIPTION	PART No.
	Clip (R. F. and Osc. Trans. Mtg.)	28-5002
	Dial	27-5508
	Drive Cord Assy. (Pointer)	31-2399
	Drive Cord Assy. (Tuning Cond.)	31-2400
	Escutcheon (Pushbutton) (Model 40-135)	28-5742
	Escutcheon Pin (Model 40-135)	W-1074
	Insulating Bushing (Insulate Drive Shaft)	27-9437
	Knobs (Tuning, Tone, Volume and Wave Switch)	27-4332
	Knobs (Pushbutton, Model 40-135)	27-4824
	Pilot Lamp Socket Assy.	38-9904
	Pointer	56-1532

SCHE. No.	DESCRIPTION	PART No.
	Rubber Bushing (Tuning Cond. Drive)	27-9432
	Spring (Drive Cord, Tuning Cond.)	28-8751
	Spring (Drive Cord, Pointer)	28-8953
	Spring (Tuning Shaft Assy.)	28-8955
	Speaker	36-1478
	Socket (Loktal, all tubes)	55-0575
	Tuning Shaft	56-6052
	Tuning Drive Drum Assy.	38-9883
	Tab (Dial, Model 40-135)	27-5526
	Tab (Television, Model 40-135)	27-9450
	Tab Kit (Model 40-135)	40-6473
	Washer "C" Type, Tuning Shaft)	28-2043

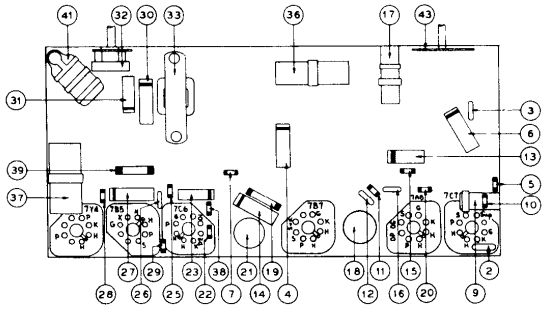


FIG. 1. PART LOCATIONS, UNDERSIDE OF CHASSIS.

MANY OF THE PARTS IN THIS PHILCO SUCH AS CONDENSERS AND RESISTORS, ARE HELD TO MUCH CLOSER TOLERANCE THAN STANDARD REPLACEMENT PARTS. GENUINE PHILCO REPLACEMENT PARTS MUST BE USED TO OBTAIN SATISFACTORY PERFORMANCE OF THIS MODEL.

PHILCO RADIO & TELEVISION CORP.

Parts and Service Division
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