

Models 39-30, 31 and 39-35, Code 121

PHILCO

TYPE OF CIRCUIT:

Models 39-30 and 39-35 code 121 are similar with the exception of the type of Cabinets, Speakers and Power Transformers. These differences are shown on the Replacement Parts list and circuit diagram.

Models 39-31XF and 39-31XK are identical to Model 39-35, Code 121 with the exception of cabinets.

The Model 39-35, code 121 specifications, diagram and replacement parts listed below and on the following pages apply to Models 39-31XF and XK.

A.C. operated; superheterodyne circuit with two tuning ranges, covering standard broadcast (540 K.C. to 1720 K.C.) and short-wave (4.9 M.C. to 18.0 M.C.) frequencies; Automatic Volume Control; and pentode output.

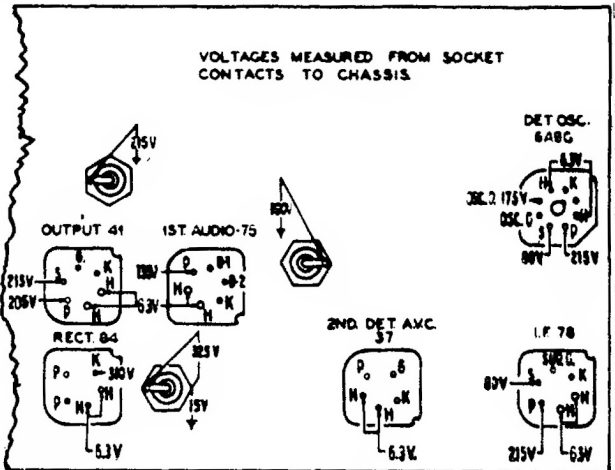
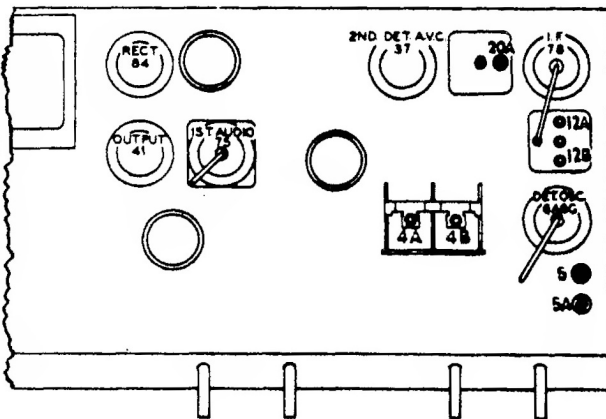
POWER SUPPLY:

Voltage, 115 volts. Frequency, 50-60 cycles.
Power consumption 45 watts.

INTERMEDIATE FREQUENCY: 470 K.C.

TUNING RANGES:

540 K.C. to 1720 K.C.; 4.9 M.C. to 18.0 M.C.



Alignment of Compensators

EQUIPMENT REQUIRED:

- (1) Signal Generator; philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 30,000 K.C. is the correct instrument for this purpose.
- (2) Output meter, Philco Model 027 Circuit Tester, incorporates a sensitive output meter and is recommended.
- (3) Philco Fiber Handle Screw Driver, Part No. 27-7059, and Fiber Wrench, Part No. 3184.

OUTPUT METER:

Two indicating devices for aligning of the receiver can be used; either an audio output meter or a vacuum tube voltmeter. The method of connecting the audio output meter is given in the next paragraph. The procedure for connecting the vacuum tube voltmeter as an aligning indicator will be found on Page 4, where greater accuracy of the various tuned circuits is desired, the vacuum tube voltmeter is recommended as an aligning device.

The Philco 027 Output Meter is connected to the plate and cathode terminals of the type 41 tube. After connecting the output meter, adjust compensators in the order as given below.

Operations	Signal Generator			Receiver		
	Output Connections To Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control settings	Adjust Compensators in Order
1	6ABG Grid	.1 mf.	470 K.C.	580 K.C.	Vol. Cont. Max.	(20A) (12B) (12A)
2	Ant. Ter.	100 mf.	18.0 M.C.	18.0 M.C.	Vol. Cont. Max.	(4B)
3	Ant. Ter.	100 mf.	1550 K.C.	1550 K.C.	Vol. Cont. Max.	(5) (4A)
4	Ant. Ter.	100 mf.	580 K.C.	580 K.C.	Vol. Cont. Max.	(5A)
5	Ant. Ter.	100 mf.	1550 K.C.	1550 K.C.	Vol. Cont. Max.	(5)

A--The "Dummy Antenna" consists of a condenser connected in series with the signal generator output lead (high side). Use the capacity as specified in each step of the above procedure.

B--DIAL CALIBRATION: In order to adjust the re-

ceiver correctly the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser closed, set the dial pointer on the extreme left index line at the low frequency end of the scale.

Setting Push-Buttons on Models: --

39-25 39-30 39-31 39-35 39-40 39-45

Circuits	Frequency Range
1 and 2	540 to 1030 kilocycles
3 and 4	670 to 1160 kilocycles
5 and 6	900 to 1470 kilocycles
7 and 8	1170 to 1600 kilocycles

(C) Turn the receiver Tuning Range Selector to position two ("Manual Tuning") and tune the receiver to the station to be set on the first button.

(D) Plug the output leads of the Station Setter into the "High" and "Gnd" jacks, and turn the output controls to maximum. Turn the modulation control to "Modulation Off." Connect the output lead of the Station Setter to the "ANT" and "GND" terminals of the receiver and tune to the frequency of the station being received. As the indicator is slowly tuned through the frequency of the station there will be two points at which a high pitched swish will be heard, one above and one below the frequency of the station. When the indicator is on the frequency of the station, minimum high pitched swish will be heard.

(E) Set the modulation control of the Station Setter for "Modulation On." The modulated signal of the Station Setter will then be heard through the receiver.

(F) Turn the receiver Tuning Range Selector to position one (Automatic Tuning) and push in the first button. Using the Part No. 45-2610 Insulated Screw Driver, turn the number 1 "OSC" screw until the modulated signal of the Station Setter is tuned in to maximum volume. Then adjust the number 1 "ANT" screw for maximum signal.

(G) Remove the output lead of the Philco Station Setter from the "ANT" terminal of the receiver and turn its indicator off the frequency of the station. The program of the desired station will then be heard on the receiver.

(H) With the volume of the receiver low, slowly turn the number 1 "OSC" back and forth until maximum output is received. Repeat the same procedure for the number 1 "ANT" screw.

After setting up the first station, the same procedure given under (C) to (H) is used for the other stations.