

PHILCO-TROPIC... Model 39-770, Code 121

Specifications

The Philco-Tropic radio is particularly recommended for locations where super reception of short wave is necessary and where the radio and the cabinet are exposed to extreme conditions. The receiver is especially constructed to withstand decay, spoilage and deterioration caused by extreme conditions of humidity, heat, salt air and cold; and to stand up under the most severe tropic weather conditions.

The chassis is heavily plated, making it impervious to salt air, rust and corrosion.

The various parts, such as coils, condensers, chokes and transformers, are treated with special wax that will withstand very high temperatures. In addition the wax is treated with chemicals which repel rodents and insects.

The cabinet is treated with a special sealing compound which protects it against moisture and heat.

TYPE CIRCUIT: Model 39-770 is an eleven (11) tube A.C. operated superheterodyne circuit with four (4) tuning ranges covering the frequencies listed below. Provisions are also provided for connecting a high impedance phonograph pick-up. In addition other features of design are: Tuning Light Indicator; Continuously Variable Tone Control with Variable Bass Compensation; Amplified Automatic Volume Control; Push-Pull Pentode Audio Output; and Special Compensation in all circuits to prevent frequency drift.

POWER SUPPLY: 115 or 220 V. 50 to 60 Cycle A.C. 115 Watts. To operate the receiver on either of the above voltages, insert the plug on top of power transformer as indicated on the transformer. Special Power Transformers for operation on 25 cycle current are available.

TUNING RANGES: 530 to 1720 K.C.: 1.7 M.C. to 5.6 M.C. 5.5 M.C. to 11.6 M.C.; 11.6 M.C. to 22.0 M.C.

I.F. FREQUENCY: 470 K.C.

PHILCO TUBES USED: 6K7G, R.F. Amplifier; 6J8G, Converter Oscillator; 6K7G, I.F. Amplifier; 6H6G, Second Detector; 6J5G, A.V.C. First Audio; 6J5G, Second Audio; 6J5G, Inverter; 6J5G, Tuning Light Control; two 6F6G, Audio Output and a 5Y4G, Rectifier.

Several of the above tubes are interchangeable with "E" type Tubes; refer to schematic diagram for locations.

AUDIO OUTPUT: 7.5 Watts.

AERIAL AND GROUND: To obtain maximum performance from this receiver, the Philco Safety Aerial, Part No. 40-6370, should be used together with a good ground connection to the nearest water pipe or any other good ground source.

CABINET DIMENSIONS:

	Height	Width	Depth
Type T	18 $\frac{1}{2}$	23 $\frac{3}{4}$	12 $\frac{3}{4}$
Type XX	36 $\frac{3}{4}$	34 $\frac{3}{4}$	14 $\frac{3}{4}$

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) 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. 3164.

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 5. 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 terminals of the type 42 tubes and adjusted for the 0 to 30 V.A.C. scale. After connecting the output meter, adjust the compensators in the order as shown in the tabulation below. Locations of the compensators are shown on page 70. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations	SIGNAL GENERATOR			RECEIVER			Special Instructions
	Output Connections to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	6J8G Grid	.1 mfd.	470 K.C.	580 K.C.	Tone-Treble Vol.—Max. Range Switch "Brdst."	35B, 35A, 34C, 34A	Turn 34B "IN" full
2	6J8G Grid	.1 mfd.	470 K.C.	580 K.C.	Tone-Treble Vol.—Max. Range Switch "Brdst."	34B	TO MAX. OUTPUT
3	Ant. & Gnd. Panel	200 mmfd.	1500 K.C.	1500 K.C.	Tone-Treble Vol.—Max. Range Switch "Brdst."	27, 20B, 20A	Note B
4	Ant. & Gnd. Panel	200 mmfd.	580 K.C.	580 K.C.	Tone-Treble Vol.—Max. Range Switch "Brdst."	28	Roll Gang
5	Ant. & Gnd. Panel	200 mmfd.	5.0 M.C.	5.0 M.C.	Tone-Treble Vol.—Max. Range Switch "SWC"	27A	Roll Gang Note C
6	Ant. & Gnd. Panel	400 ohms	11 M.C.	11 M.C.	Tone-Treble Vol.—Max. Range Switch "SWB"	30, 14, 6	Note D Roll Gang on 14 and 6 Image above 11.0 M.C.
7	Ant. & Gnd. Panel	400 ohms	6.0 M.C.	6.0 M.C.	Tone-Treble Vol.—Max. Range Switch "SWB"	30A, 14A, 6A	Note E Roll Gang on 14A and 6A Image above 6.0 M.C. Repeat Operation 6
8	Ant. & Gnd. Panel	400 ohms	20.0 M.C.	20.0 M.C.	Tone-Treble Vol.—Max. Range Switch "SWA"	30B, 14C, 6C	Note D Roll Gang on 14C and 6C Image above 20.0 M.C.
9	Ant. & Gnd. Panel	400 ohms	12.0 M.C.	12.0 M.C.	Tone-Treble Vol.—Max. Range Switch "SWA"	30C, 14B, 6B	Note D Roll Gang on 14B and 6B Image above 12.0 M.C. Repeat Operation 7

Replacement Parts—Models 39-770, Code 121

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Ant. Trans. (Brdest.)	32-2588	44	Resistor (490,000 ohms, 1 watt)	33-449439	82	Resistor (20,000 ohms, 1 watt)	33-320439
2	Ant. Trans. (S.W. C)	32-3105	45	Resistor (1.0 megohm, 1 watt)	33-510439	83	Resistor (99,000 ohms, 1 watt)	33-399439
3	Ant. Trans. (S.W. B)	32-3108	46	Resistor (51,000 ohms, 1 watt)	33-351439	84	Resistor (1.0 megohm, 1 watt)	33-510439
4	Ant. Trans. (S.W. A)	32-3111	47	Electrolytic Cond. (.3 mfd., 150 V.)	30-2367	85	Tubular Cond. (.05 mfd.)	30-4588
5	Mica Cond. (5 mmfd.)	30-1120	48	Resistor (70,000 ohms, 1 watt)	33-370439	86	Power Trans. 100/130 or 200/260 V., 50 to 60 cycles.	32-8008
6	Compensators (4 section)	31-6284	49	Resistor (20,000 ohms, 1 watt)	33-320439	87	Bakelite Cond. (.015 and .015 mfd.)	3793-ODG
7	R.F. Trans. (Brdest.)	32-2379	50	Resistor (120,000 ohms, 1 watt)	33-412439	88	Pilot Lamps (Dial)	34-2064
8	R.F. Trans. (S.W. C)	32-3106	51	Resistor (490,000 ohms, 1 watt)	33-449439	89	Resistor (1.0 megohm, 1 watt)	33-510439
9	R.F. Trans. (S.W. B)	32-3109	52	Mica Cond. (250 mmfd.)	30-1119	90	Resistor (1.0 megohm, 1 watt)	33-510439
10	R.F. Trans. (S.W. A)	32-3112	53	Resistor (99,000 ohms, 1 watt)	33-399439	91	Resistor (1.5 megohms, 1 watt)	33-515439
11	Resistor (32,000 ohms, 1 watt)	33-351439	54	Tubular Cond. (.05 mfd.)	30-4519	92	Tubular Cond. (.2 mfd.)	30-4587
12	Mica Cond. (250 mmfd.)	30-1119	55	Resistor (1.5 megohms, 1 watt)	33-515439	93	Tuning Indicator Trans.	32-8009
13	Resistor (1.0 meg., 1 watt)	33-510439	56	Resistor (1.5 megohms, 1 watt)	33-515439	94	Pilot Lamp (Tuning Indicator)	34-2221
14	Compensators (4 section)	31-6284	57	Volume Control (1.0 megohm)	33-5302	95	Wave Switch	42-1476
15	Tubular Cond. (.1 mfd.)	30-4527	58	Resistor (2000 ohms, 1 watt)	33-220439		Bezel	56-1163
16	Resistor (5000 ohms, 1 watt)	33-250439	59	Tubular Cond. (.03 mfd.)	30-4585		Bezel Gasket	38-9734
17	Mica Cond. (250 mmfd.)	30-1119	60	Tubular Cond. (.006 mfd.)	30-4591		Cable (Power)	L-3180
18	Resistor (1.0 megohm)	33-510439	61	Resistor (99,000 ohms, 1 watt)	33-399439		Coupling (Tuning Cond. to Drive)	31-2291
19	Tubular Cond. (.25 mfd.)	30-4588	62	Tubular Cond. (.003 mfd.)	30-4580		Disc (Volume Control)	27-4765
20	Tuning Cond.	31-2326	63	Tone Control (3.0 megohms)	33-5287		Disc (Range Switch)	27-4767
21	Tubular Cond. (.25 mfd.)	30-4588	64	Tubular Cond. (.03 mfd.)	30-4593		Disc (Tuning)	27-4798
22	Resistor (32,000 ohms, 1 watt)	33-332439	65	Resistor (3000 ohms, 1 watt)	33-230439		Disc (Tone Control)	27-4802
23	Osc. Trans. (Brdest.)	32-2120	66	Tubular Cond. (.15 mfd.)	30-4517		Dial	27-5448
24	Osc. Trans. (S.W. C)	32-3107	67	Tubular Cond. (.006 mfd.)	30-4591		Dial Pointer	56-1033
25	Osc. Trans. (S.W. B)	32-3110	68	Resistor (1.0 megohm, 1 watt)	33-510439		Dial Cord Spring	28-8913
26	Osc. Trans. (S.W. A)	32-3113	69	Resistor (70,000 ohms, 1 watt)	33-370439		Drive Cord (Pointer)	31-2352
27	Compensator	31-6288	70	Resistor (70,000 ohms, 1 watt)	33-370439		Drive Cord (Tuning Drum)	31-2350
28	Compensator	31-6289	71	Resistor (330,000 ohms, 1 watt)	33-433439		Drum Assembly (Tuning Cond.)	38-9716
29	Semi-Fixed Cond. (1330 mmfd.)	31-6286	72	Resistor (330,000 ohms, 1 watt)	33-433439		Range Switch Operating Arm and Link Assembly	38-9756
30	Compensators (4 section)	31-6285	73	Tubular Cond. (.03 mfd.)	30-4517		Socket (7 prong—6K7G R.F. Tube)	27-6099
31	Mica Cond. (250 mmfd.)	30-1119	74	Resistor (70,000 ohms, 1 watt)	33-370439		Socket (6 prong)	27-6121
32	Resistor (20,000 ohms, 1 watt)	33-320439	75	Tubular Cond. (.003 mfd.)	30-4582		Socket (8 prong—6J8G)	27-6120
33	Tubular Cond. (.25 mfd.)	30-4589	76	Output Trans.	32-8020		Socket Assembly (Dial Lamp)	38-9694
34	1st I.F. Trans. Assy.	32-3114	77	Cone and Voice Coil Assy. (Spkr. Pt. No. 36-1460-3)	36-4105		Socket Assembly (Dial Lamp)	38-9695
35	2nd I.F. Trans. Assy.	32-3115	77A	Cone and Voice Coil Assy. (Spkr. Pt. No. 36-1459-2)	36-4106		Socket Assembly (Bullseye XX Cabinet)	38-9696
36	Resistor (20,000 ohms, 1 watt)	33-320439	78	Electrolytic Cond. (40 mfd., 300 V.)	30-2366		Station Card	27-5446
37	Tubular Cond. (.05 mfd.)	30-4519	79	Electrolytic Cond. (18 mfd.)	30-2368		Station Card Shield	27-5447
38	Resistor (15,000 ohms, 2 watt)	33-315539	80	Field Coil (Replace Spkr. 36-1459-2 in "T" Cabinet and Replace Spkr. 36-1460-3 in "XX" Cabinet).			Spring (Retaining Station Card)	56-1294
39	Mica Cond. (110 mmfd.)	30-1118	81	Resistor (400 ohms, wire wound)	33-3365		Speaker (XX Cabinet)	36-1460-3
40	Resistor (490,000 ohms, 1 watt)	33-449439					Speaker (T Cabinet)	36-1459-2
41	Tubular Cond. (.5 mfd.)	30-4590						
42	Resistor (99,000 ohms, 1 watt)	33-399439						
43	Tubular Cond. (.2 mfd.)	30-4587						

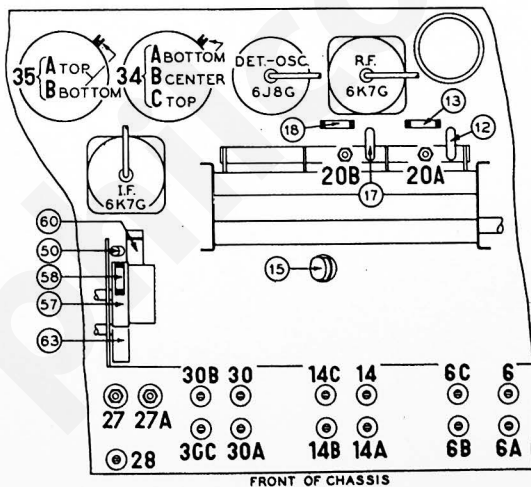
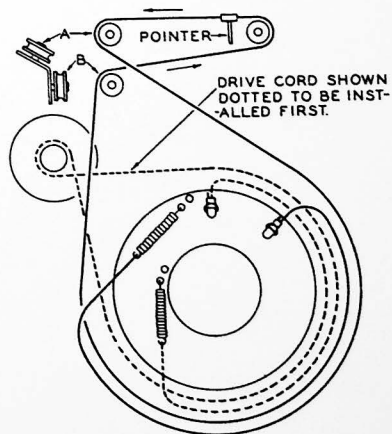


Fig. 2—Compensator Locations: Top, Front View of Chassis.



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

Fig. 3—Installing Drive Cords.

