

Model 42-380, Code 121

SPECIFICATIONS

Model 42-380, Code 121, is an eight (8) tube A.C. operated superheterodyne radio employing manual and electric push-button tuning.

In addition this model incorporates the Philco low-impedance, rotatable loop aerial; provisions for an external aerial; Philco LOKTAL tubes; two intermediate frequency stages; two tone controls (one TREBLE, one BASS); Automatic Volume control; push-pull pentode audio output stage with screen phase inversion, and a 12-inch electrodynamic speaker.

INTERMEDIATE FREQUENCY: 455 K.C.

TUNING BAND FREQUENCIES: 540 to 1720 K.C.
2.3 to 7.0 MC.
9.0 to 15.5 MC.

AUDIO OUTPUT: 3 watts.

POWER CONSUMPTION: 65 watts.

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

The radio can also be operated on a 115 volt, 25 cycle A.C. power supply by changing the power transformer as indicated in the parts list.

PHILCO TUBES USED: One XXL converter; one XXL, oscillator; one 7B7, 1st I. F. stage; one 7B7, 2nd I. F. stage; one 7C6, 2nd detector 1st audio; two 41 audio output and a 6X5G rectifier.

CABINET DIMENSIONS: **HEIGHT** **WIDTH** **DEPTH**
39½" 28½" 13"

EXTERNAL AERIAL CONNECTIONS

The built-in low-impedance loop aerial system is designed to operate without an outside aerial or ground and to give maximum receiving performance under average conditions.

To operate the radio, however, in steel reinforced buildings and other shielded locations where signal strength is weak, the Philco outdoor aerial part No. 45-2817 is recommended for maximum receiving performance. The outdoor aerial can be easily connected to the radio by inserting the plug attached to the transformer (supplied with the aerial) into the socket provided at the rear of the radio. This aerial can be obtained from your local Philco distributor.

ELECTRIC PUSH-BUTTON TUNING ADJUSTMENTS

The electric push-button tuning mechanism consists of nine (9) push-buttons. Five of the push-buttons are used for selecting standard Broadcast stations, one for the power control (ON-OFF) and three (3) for selecting the standard, police and shortwave tuning bands.

Viewing the front of the cabinet from left to right the first push-button is the power control (ON-OFF); the next five (5) push-buttons for standard broadcast stations, and the seventh, eighth and ninth for selecting the standard, police and shortwave tuning bands, respectively.

When setting up stations on the push-buttons the lowest frequency station is set up for reception on the second push-button from the left and the remaining stations according to increasing frequency in the next four push-buttons. The push-buttons are adjusted by the padders located on the rear of the chassis. The frequency range covered by each push-button and the procedure for adjusting is listed in the adjacent tabulation. The second push-button from the left can also be adjusted for reception of the sound channel of a television program received by special Philco television radios. This push-button may also be used in conjunction with a Philco wireless Record Player. The

procedure for setting up these models is included in the instructions supplied with each model.

Padders right to left from rear	Circuit	Buttons left to right from front	Frequency Range
		1	ON-OFF
1	Ant. }	2	540 to 1000 KC
2	Osc. }		
3	Ant. }	3	600 to 1200 KC
4	Osc. }		
5	Ant. }	4	650 to 1300 KC
6	Osc. }		
7	Ant. }	5	850 to 1500 KC
8	Osc. }		
9	Ant. }	6	900 to 1600 KC
10	Osc. }		
		7	Standard Band
		8	Police Band
		9	Shortwave Band

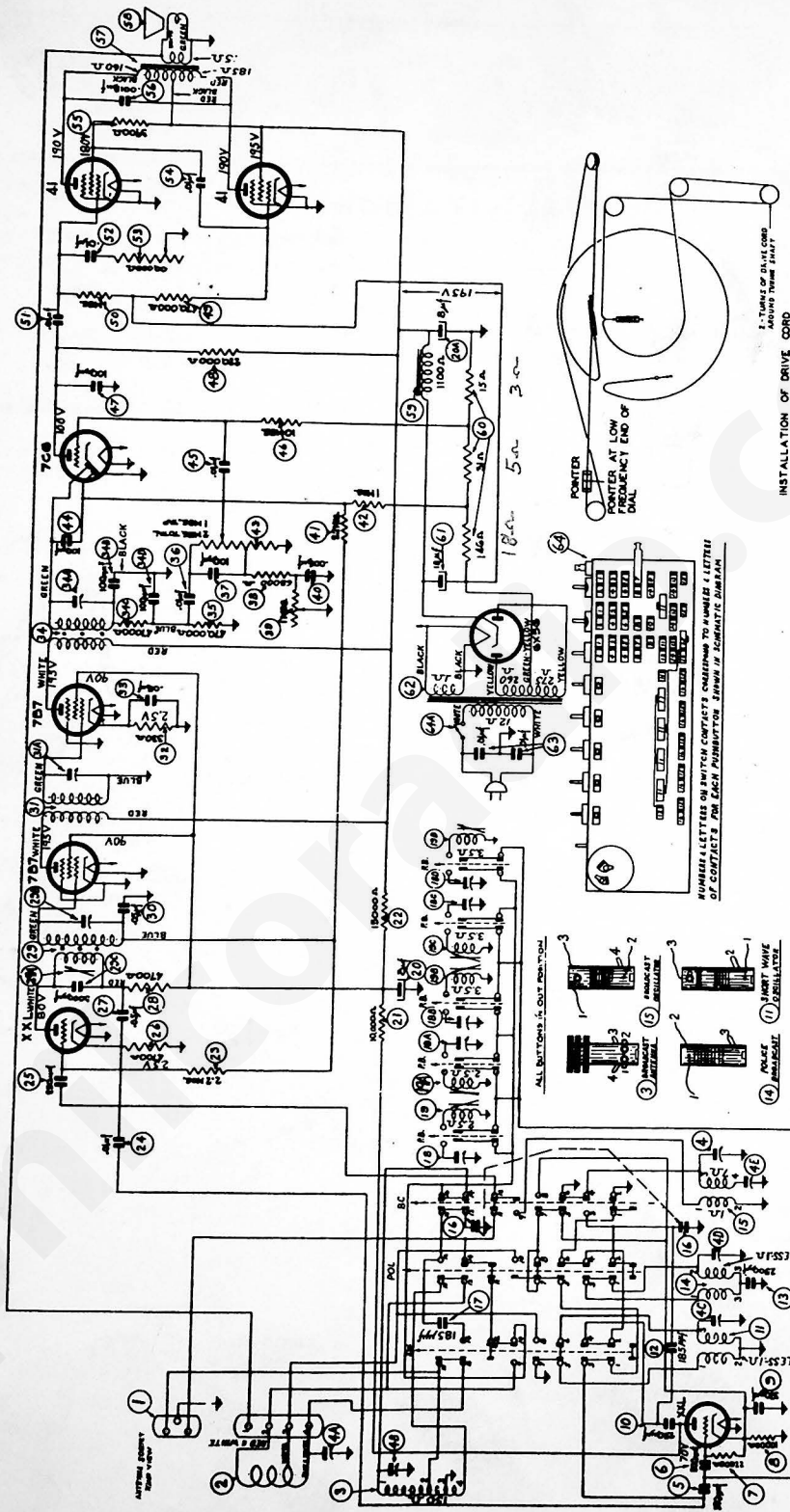


FIG. 1—SCHEMATIC DIAGRAM—MODEL 42-380, CODE 121
 The voltages indicated at the tube elements above were measured with a 1000 ohms per volt voltagemeter, Philco Model 027, line voltage 117 volts, A. C. bond switch (broadcast). No station being received.

REPLACEMENT PARTS

Model 42-380

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1.	External Aerial Socket	27-6145	19a.	Push-button Oscillator Coil (850 to 1500KC)	32-3779	53.	Tone Control (Audio Treble)	33-5461
	Mtg. Rivets	W-207FA5					Mtg. Nut	W-2157
2.	Loop Aerial	76-1307	19b.	Push-button Oscillator Coil (650 to 1300 KC)	32-3780	54.	Condenser (.01 mfd., 400 volts)	33-226339
	Terminal Panel	38-8870	19c.	Push-button Oscillator Coil (500 to 1200 KC)	32-3780	55.	Resistor (3000 ohms)	33-226339
	Mtg. Rivet	W-207FA5	19d.	Push-button Oscillator Coil (540 to 1000 KC)	32-3780	56.	Condenser (.0015 mfd., 600 volts)	36-4621
	Mtg. Screw	W-280FE11	20.	Electrolytic Condenser (8-8 mfd., 475 volts)	30-2513	57.	Output Transformer	32-8120
	Mtg. Sleeve	28-3806FA3	20a.	Electrolytic Condenser (8 mfd., 475 volts)	Part of 20	58.	Speaker	36-1514-2 or 36-1514-4
	Mtg. Sleeve	56-1545FA3	21.	Resistor (10,000 ohms)	33-310339		36 Assembly (for Speaker	
	Spring Washer	28-4186FA3	22.	Resistor (15,000 ohms)	33-315339		36-1514-2)	36-4173
3.	Aerial Transformer	32-3746	23.	Resistor (2.2 megohms)	33-522339		36 Assembly (for Speaker	
	Mtg. Clip	28-5002	24.	Condenser (.01 mfd., 400 volts)	30-4572		36-1514-4)	36-4170
4.	Compensator (Broadcast Osc.)	31-6433	25.	Condenser (250 mmfd.)	60-125257		Mtg. washer	27-7467
4a.	Compensator (S. W. Aerial) Part of 4		26.	Resistor (4700 ohms)	33-247339		Mtg. nut	W-124FA3
4b.	Compensator (Broadcast Aerial) Part of 4		27.	Condenser (.05 mfd., 400 volts)	30-4518		Cable	41-3610
4c.	Compensator (S. W. Osc.) Part of 4		28.	Resistor (4700 ohms)	33-247339	59.	Field coil (Replace speaker, 36-1514)	
4d.	Compensator (Police Osc.) Part of 4		29.	1st I. F. Transformer	32-3742	60.	Bias Resistor (15-31,146 ohms)	33-3393
4e.	Compensator (Broadcast Osc., 580 KC) Part of 4		29a.	Primary Compensator (Iron Core)	Part of 29	61.	Electrolytic Condenser (18 mfd., 475 volts)	36-2517
5.	Mica Condenser (370 mmfd.)	30-1157	29b.	Secondary Compensator	Part of 29		Mtg. clamp	56-1848
6.	Mica Condenser (500 mmfd.)	60-150157	29c.	Mica Condenser (3000 mmfd.)	Part of 29	62.	Power Transformer (115 volts, 60 cycle)	32-8177
7.	Resistor (22,000 ohms)	33-322339					Power Transformer (115 volts, 25 cycle)	39983-0-DG
8.	Resistor (10,000 ohms)	33-310339		Mtg. Nut	W-1949	63.	Line Filter Condenser (.01-.01 mfd.)	
9.	Mica condenser (370 mmfd.)	30-1157	30.	Condenser (.05 mfd., 400 volts)	30-4518	64.	Push-button Switch and Power Switch	42-1681
10.	Mica condenser (250 mmfd.)	60-125157	31.	2nd I. F. Transformer	32-3743		Mtg. screw	W-523
11.	Oscillator transformer (S. W.)	32-3749	31a.	Secondary Compensator	Part of 31	64a.	Power Switch	Part of 64
	Mtg. clip	28-5002						
12.	Mica Condenser (185 mmfd.)	30-1187	32.	Resistor (330 ohms)	33-133336	MISCELLANEOUS PARTS		
13.	Mica condenser (2500 mmfd.)	60-225324	33.	Condenser (.05 mfd., 400 volts)	30-4518	Base	54-4099	
14.	Oscillator transformer (Police)	32-3748	34.	3rd I. F. Transformer	32-3744	Mtg. screw	W-2671FB26	
	Mtg. clip	28-5002	34a.	Secondary Compensator	Part of 34a	Cabinet	18571A	
15.	Oscillator Transformer (Broadcast)	32-3747	34b.	Mica Condenser (100 mmfd.)	Part of 34a	Cord & Plug (Power supply)	L-3199	
	Mtg. Clip	28-5002	34c.	Resistor (47,000 ohms)	33-347339	Dial Scale	27-5734	
16.	Tuning Condenser	31-2578	34d.	Mica Condenser (100 mmfd.)	Part of 34a	Deal background plate	27-9984	
	Drive Cord (Pointer)	31-2576	35.	Resistor (470,000 ohms)	33-447339	Mtg. spring	28-6751	
	Spring	28-8953	36.	Condenser (.01 mfd., 400 volts)	30-4572	Pointer	56-2331	
	Drive Cord (Condenser Drive)	31-2577	37.	Mica Condenser (100 mmfd.)	60-119157	Rubber channel	54-4018	
	Spring	28-8751	38.	Resistor (68,000 ohms)	33-386339	Mtg. clamp	56-2227	
	Tuning Drum	76-1293	39.	Tone Control (Audio Bass)	33-5460	Screw	W-1874	
	Tuning Shaft	56-6152		Mtg. Nut	W-2157	Knob (Push-button)	54-4144	
	"C" Washer	28-2043	40.	Condenser (.006 mfd., 400 volts)	30-4591	Spring assembly	76-1294	
	Mtg. Screw	W-2002	41.	Resistor (2.2 megohms)	33-522339	Knob (Tuning, volume)	54-4105	
	Mtg. Grommet	27-4596	42.	Resistor (1 megohm)	33-510339	Rubber Grommet	27-4571	
	Mtg. Sleeve	56-1505	43.	Volume Control	33-5459	Screw (Chassis Mtg.)	W-1345FA3	
17.	Mica Condenser (185 mmfd.)	30-1197		Mtg. Nut	W-2157FA3	Socket assembly (Dial lights)	76-1295	
18.	Push-Button Padder (900 to 1600KC)	31-6439	44.	Mica Condenser (100 mmfd.)	60-119157	Socket (41 tubes)	27-6168	
18a.	Push-Button Padder (850 to 1500KC)	Part of 18	45.	Condenser (.01 mfd., 400 volts)	30-4572	Mtg. rivet	W-1468	
18b.	Push-Button Padder (650 to 1300KC)	Part of 18	46.	Resistor (10 megohms)	33-610339	Socket (6x5G tubes)	27-6174	
18c.	Push-Button Padder (600 to 1200KC)	Part of 18	47.	Condenser (100 mmfd.)	60-119157	Socket (Lokalt tubes)	27-6177	
18d.	Push-Button Padder (540 to 1000KC)	Part of 18	48.	Resistor (220,000 ohms)	33-422339	Mtg. rivets	W-239FA3	
	Mtg. Screw	W-2150	49.	Resistor (470,000 ohms)	33-447339	Tab Kit	40-6663	
19.	Push-button Oscillator Coil (900 to 1600 KC)	32-3779	50.	Resistor (one megohm)	33-510339	Tab (Broadcast)	27-5738	
			51.	Condenser (.01 mfd., 400 volts)	30-4572	Tab (Shortwave)	27-5748	
			52.	Condenser (.01 mfd., 400 volts)	30-4572	Tab (on-off)	27-5742	
						Tab (Police)	27-5748	
						Cover	27-5743	
						Washer (Chassis Mtg.)	28-5114	

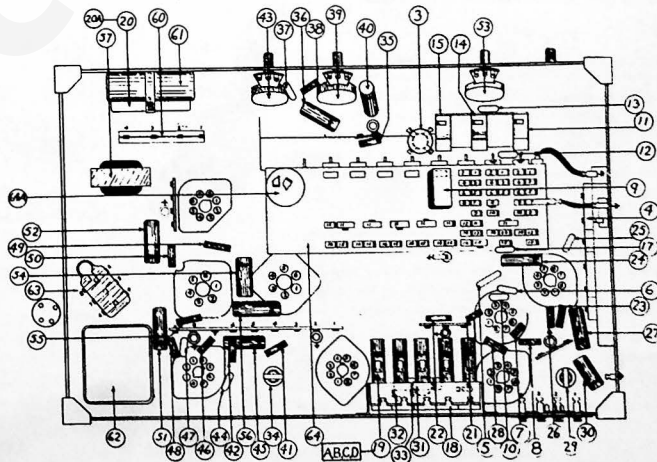


FIG. 2—PART LOCATIONS—UNDER CHASSIS—MODEL 42-380

ALIGNING R. F. AND I. F. COMPENSATORS

EQUIPMENT REQUIRED

1. **Signal Generator:** Covering the frequency range of the receiver, such as Philco Model 070.
2. **Aligning Indicator:** Either a vacuum tube voltmeter or an audio

output meter may be used as an aligning indicator. Philco Models 027 and 028. Circuit testers contain both these meters.

3. **Tools:** Philco Fiber Screw Driver, Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

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 Settings	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." Positions	34A, 31A 29A, 29B	
2	Use loop on generator	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Broadcast	4, 4B	Note A
3	Use loop on generator	580 K. C.	580 K. C.	Vol. Max. Range Switch Broadcast	4E	Roll Tuning Condensers Note B
4	Use loop on generator	Perform operation No. 2 again				
5	Use loop on generator	6 M. C.	6 M. C.	Range Switch "Police"	4D	
6	Use loop on generator	15 M. C.	15 M. C.	Range Switch "S. W."	4C, 4A	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 the schematic.

NOTE B—When adjusting the low frequency compensator of Range One (Broadcast) or the aerial padders of the high frequency tuning range; 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—To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator (4C) to the maximum capacity position (clockwise). From this position slowly turn the compensator counter-clockwise until a second peak is obtained on the output meter. Adjust the compensator for maximum output at this second peak.

If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the signal generator dial 910 KC above the frequency being used on any high frequency range.

The aerial padder (4A) must be adjusted to maximum by rolling the tuning condenser. If two signal peaks occur when turning the padder, adjust to maximum output on the first signal peak from the tight position (screw all the way down) of the padder.

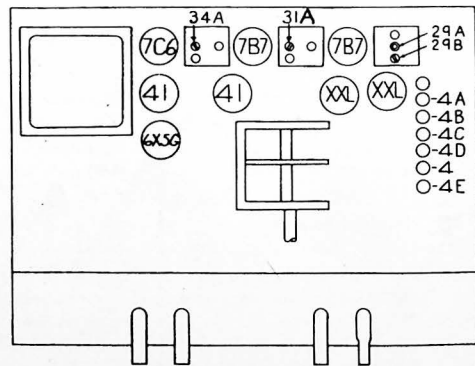


FIG. 3—LOCATIONS OF COMPENSATORS—TOP OF CHASSIS