



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
39 1/2"	28 3/8"	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

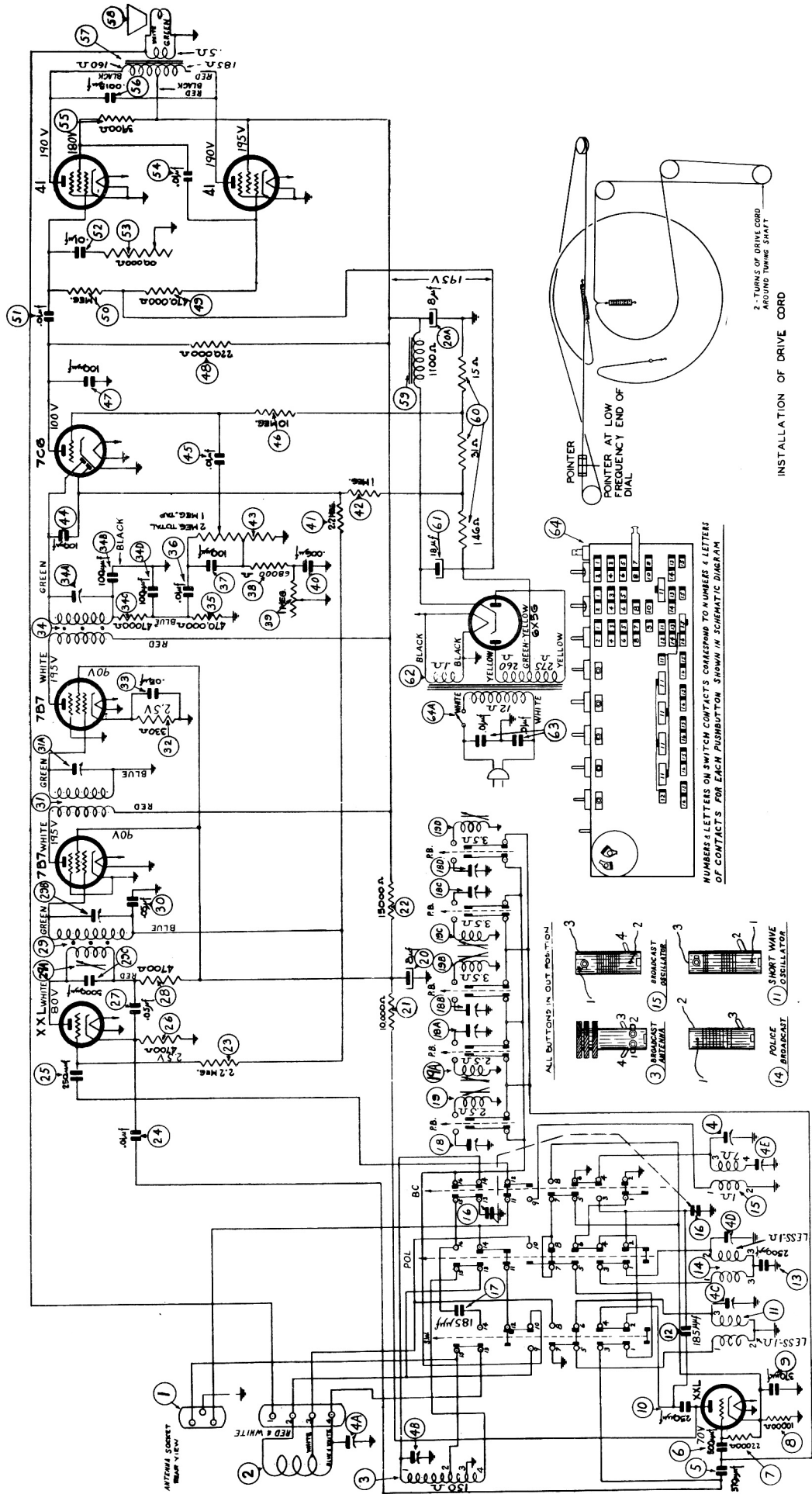


FIG. 1—SCHEMATIC DIAGRAM—MODEL 42-380, CODE 121

The voltages indicated at the tube elements above were measured with a 1000 ohms per volt voltmeter. Philco Model 027, line voltage 117 volts, A. C. band 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)	30-4572
	Terminal Panel	38-9870				55.	Resistor (3900 ohms)	33-239339
	Mtg. Rivet	W-207FA5	19c.	Push-button Oscillator Coil (600 to 1200 KC)	32-3780	56.	Condenser (.0015 mfd., 600 volts)	30-4621
	Mtg. Screw	W-288FE11	19d.	Push-button Oscillator Coil (540 to 1000 KC)	32-3780	57.	Output Transformer	32-8120
	Mtg. Sleeve	28-3806FA3				58.	Speaker	36-1514-2 or 36-1514-4
	Mtg. Sleeve	56-1545FA3	20.	Electrolytic Condenser (8-8 mfd., 475 volts)	30-2513		Cone assembly (for Speaker)	36-4173
	Spring Washer	28-4186FA3					Cone Assembly (for Speaker)	36-4170
3.	Aerial Transformer	32-3746	20a.	Electrolytic Condenser (8 mfd., 475 volts)	Part of 20		Mtg. washer	27-7467
	Mtg. Clip	28-5002					Mtg. nut	W-124FA3
4.	Compensator (Broadcast Osc.)	31-6433	21.	Resistor (10,000 ohms)	33-310339		Cable	41-3610
4a.	Compensator (S. W. Aerial)		22.	Resistor (15,000 ohms)	33-315339	59.	Field coil (Replace speaker, 36-1514)	
	Part of 4		23.	Resistor (2.2 megohms)	33-522339	60.	Bias Resistor (15-31-146 ohms)	33-3393
4b.	Compensator (Broadcast Aerial)		24.	Condenser (.01 mfd., 400 volts)	30-4572	61.	Electrolytic Condenser (18 mfd., 475 volts)	30-2517
	Part of 4		25.	Condenser (250 mmfd.)	60-125257		Mtg. clamp	56-1848
4c.	Compensator (S. W. Osc.)		26.	Resistor (4700 ohms)	33-247339	62.	Power Transformer (115 volts, 60 cycle)	32-8177
	Part of 4		27.	Condenser (.05 mfd., 400 volts)	30-4518		Power Transformer (115 volts, 25 cycle)	39003-ODG
4d.	Compensator (Police Osc.)		28.	Resistor (4700 ohms)	33-247339	63.	Line Filter Condenser (.01-.01 mfd.)	42-1681
	Part of 4		29.	1st I. F. Transformer	32-3742	64.	Push-button Switch and Power Switch	W-523
4e.	Compensator (Broadcast Osc., 580 KC)		29a.	Primary Compensator (Iron Core)	Part of 29	64a.	Power Switch	Part of 64
	Part of 4		29b.	Secondary Compensator	Part of 29			
5.	Mica Condenser (370 mmfd.)	30-1157	29c.	Mica Condenser (3000 mmfd.)	Part of 29			
6.	Mica Condenser (500 mmfd.)	60-150157		Mtg. Nut	W-1949			
7.	Resistor (22,000 ohms)	33-322339	30.	Condenser (.05 mfd., 400 volts)	30-4518			
8.	Resistor (10,000 ohms)	33-310339	31.	2nd I. F. Transformer	32-3743			
9.	Mica condenser (370 mmfd.)	30-1157	31a.	Secondary Compensator	Part of 31			
10.	Mica condenser (250 mmfd.)	60-125157		Mtg. Nut	W-1949			
11.	Oscillator transformer (S. W.)	32-3749	32.	Resistor (330 ohms)	33-133336			
	Mtg. clip	28-5002	33.	Condenser (.05 mfd., 400 volts)	30-4518			
12.	Mica Condenser (185 mmfd.)	30-1197	34.	3rd I. F. Transformer	32-3744			
13.	Mica condenser (2500 mmfd.)	60-225324	34a.	Secondary Compensator	Part of 34			
14.	Oscillator transformer (Police)	32-3748	34b.	Mica Condenser (100 mmfd.)	Part of 34a			
	Mtg. clip	28-5002	34c.	Resistor (47,000 ohms)	33-347339			
15.	Oscillator Transformer (Broadcast)	32-3747	34d.	Mica Condenser (100 mmfd.)	Part of 34a			
	Mtg. Clip	28-5002	35.	Resistor (470,000 ohms)	33-447339			
16.	Tuning Condenser	31-2578	36.	Condenser (.01 mfd., 400 volts)	30-4572			
	Drive Cord (Pointer)	31-2576	37.	Mica Condenser (100 mmfd.)	60-110157			
	Spring	28-8953	38.	Resistor (68,000 ohms)	33-368339			
	Drive Cord (Condenser Drive)	31-2577	39.	Tone Control (Audio Bass)	33-5460			
	Spring	28-8751		Mtg. Nut	W-2157			
	Tuning Drum	76-1293	40.	Condenser (.006 mfd., 400 volts)	30-4591			
	Tuning Shaft	56-6152	41.	Resistor (2.2 megohms)	33-522339			
	"C" Washer	28-2043	42.	Resistor (1 megohm)	33-510339			
	Mtg. Screw	W-2002	43.	Volume Control	33-5459			
	Mtg. Grommet	27-4596		Mtg. Nut	W-2157FA3			
	Mtg. Sleeve	56-1505	44.	Mica Condenser (100 mmfd.)	60-110157			
17.	Mica Condenser (185 mmfd.)	30-1197	45.	Condenser (.01 mfd., 400 volts)	30-4572			
18.	Push-Button Padder (900 to 1600KC)	31-6439	46.	Resistor (10 megohms)	33-610339			
18a.	Push-Button Padder (850 to 1500KC)	Part of 18	47.	Condenser (100 mmfd.)	60-110157			
18b.	Push-button Padder (650 to 1300KC)	Part of 18	48.	Resistor (220,000 ohms)	33-422339			
18c.	Push-button Padder (600 to 1200KC)	Part of 18	49.	Resistor (470,000 ohms)	33-447339			
18d.	Push-button Padder (540 to 1000KC)	Part of 18	50.	Resistor (one megohm)	33-510339			
	Mtg. Screw	W-2150	51.	Condenser (.01 mfd., 400 volts)	30-4572			
19.	Push-button Oscillator Coil (900 to 1600 KC)	32-3779	52.	Condenser (.01 mfd., 400 volts)	30-4572			

MISCELLANEOUS PARTS

	Bezel	54-4099
	Mtg. screw	W-2071FB26
	Cabinet	10571A
	Cord & Plug (Power supply)	L-3199
	Dial Scale	27-5734
	Deal background plate	27-9984
	Mtg. spring	28-8751
	Pointer	56-2331
	Rubber channel	54-4018
	Mtg. clamp	56-2227
	Screw	W-1974
	Knob (Push-button)	54-4144
	Spring assembly	76-1294
	Knob (Tuning, volume)	54-4105
	Rubber Grommet	27-4571
	Screw (Chassis Mtg.)	W-1345FA3
	Socket assembly (Dial lights)	76-1295
	Socket (41 tubes)	27-6168
	Mtg. rivet	W-1469
	Socket (6x5G tubes)	27-6174
	Socket (Lokalt tubes)	27-6177
	Mtg. rivets	W-239FA3
	Tab Kit	40-6663
	Tab (Broadcast)	27-5739
	Tab (Shortwave)	27-5740
	Tab (on-off)	27-5742
	Tab (Police)	27-5748
	Cover	27-5743
	Washer (Chassis Mtg.)	28-5114

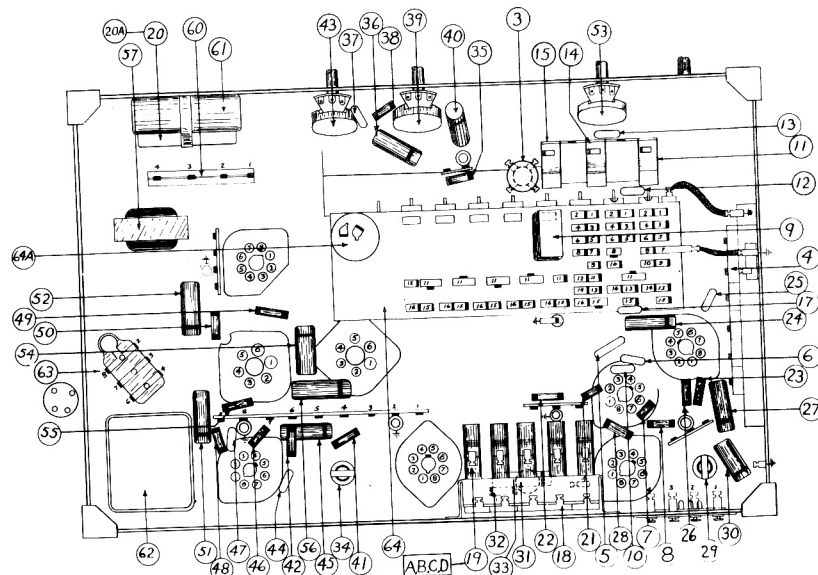


FIG. 2—PART LOCATIONS—UNDER CHASSIS—MODEL 42-380

ALIGNING R. F. AND I. F. COMPENSATORS

EQUIPMENT REQUIRED

- Signal Generator:** Covering the frequency range of the receiver, such as Philco Model 070.
- 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.

- 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.

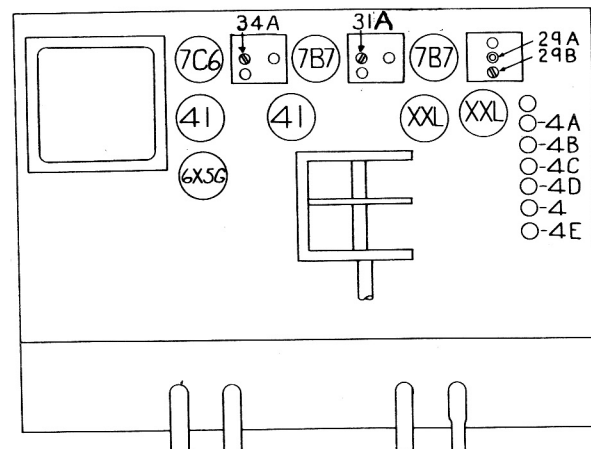


FIG. 3—LOCATIONS OF COMPENSATORS—TOP OF CHASSIS