

MODEL 41-256, CODE 121

SPECIFICATIONS

Model 41-256, Code 121 is a nine (9) tube alternating current (A. C.) operated superheterodyne radio incorporating Electric push-button and Manual Tuning, and the New Philco built-in American and Overseas loop aerial system. In addition these models are designed to receive the sound of a television program tuned in by special type Philco Television Radios.

Other features of design included in these models are: Three tuning ranges covering the frequencies listed below; continuously variable tone control; audio bass frequency compensation; push-pull pentode and illuminated push-button controls.

ELECTRIC PUSH-BUTTON TUNING: The automatic tuning mechanism of each model is identical and consists of eight (8) electric tuning push-buttons, seven (7) of the push-buttons are used for selecting broadcast stations, and one as the power control (On-Off switch).

The lowest frequency station push-button labeled "Television" can be adjusted for reception of the sound channel of a television program received by Philco television sets. This push-button may also be used in conjunction with a Philco Wireless Record Player. Instructions for adjusting the push-buttons are the same as that given for Model 41-280 in Radio Service Bulletin No. 352.

AERIAL CONNECTIONS: The built-in loop aerial system is designed to operate without an outside aerial or ground, and to give exceptionally high receiving performance of stations on standard and shortwave frequencies. Another feature is its noise-reducing character.

ALIGNING R. F. AND I. F. COMPENSATORS—The following procedure is the same for all models. EQUIPMENT REQUIRED

1. SIGNAL GENERATOR: Covering the frequency range of the receiver, such as Philco Models 070 or 177.
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

characteristic. The loop can be turned to the position in which it picks up a minimum amount of interference, or to the position where best reception is obtained.

To operate the radio in steel reinforced buildings and other shielded locations, where signal strength is weak, the Philco 1941 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 unit into the socket provided at the rear of the Radio chassis. This aerial can be obtained from your local Philco distributor. A ground connection is not required with either type of installation.

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

These models can also be operated on 25 cycle current. To do this it is necessary to replace the power transformer with a 25 cycle unit as indicated in the parts lists.

POWER CONSUMPTION: 60 watts.

FREQUENCY TUNING RANGES: 540 to 1720 K. C.; 9 to 12 M. C.; 15 to 18 M. C.

INTERMEDIATE FREQUENCY: 455 K. C.

AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: XXL, R. F. mixer; XXL, oscillator; 2 7B7, I. F. amplifiers; 7A6, 2nd detector; 7C6, 1st audio, A. V. C.; two 41 audio output, and an 84 rectifier.

CABINET DIMENSIONS:

Model	Height	Width	Depth
	10 $\frac{3}{4}$ "	19 $\frac{3}{8}$ "	13 $\frac{3}{8}$ "

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. 3 terminal loop panel	455 K. C.	560 K. C.	Vol. Max. Range Switch "S. W." Positions	15A, 15B 38A, 43A	
2	Use loop on generator	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Broadcast	27, 7A	Note A
3	Use loop on generator	580 K. C.	580 K. C.	Vol. Max. Range Switch Broadcast	25	Roll Tuning Condensers Note B
4	Use loop on generator			Perform operation No. 2 again		
5	Use loop on generator	12 M. C.	12 M. C.	Range Switch "SW-1"	27B, 8A	Note C
6	Use loop on generator	18 M. C.	18 M. C.	Range Switch "SW-2"	27A, 8	Note D

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 the 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—Adjust compensator (27B) to first peak from closed position (maximum capacity). The aerial compensator (8A) must also be adjusted to maximum on the second signal peak by rolling the tuning condenser (See Note B).

NOTE D—Adjust compensator (27A) to the second signal peak from the closed position (maximum capacity). The aerial compensator (8) must also be adjusted to maximum on the first signal peak by rolling the tuning condenser (See Note B).

PRODUCTION CHANGES

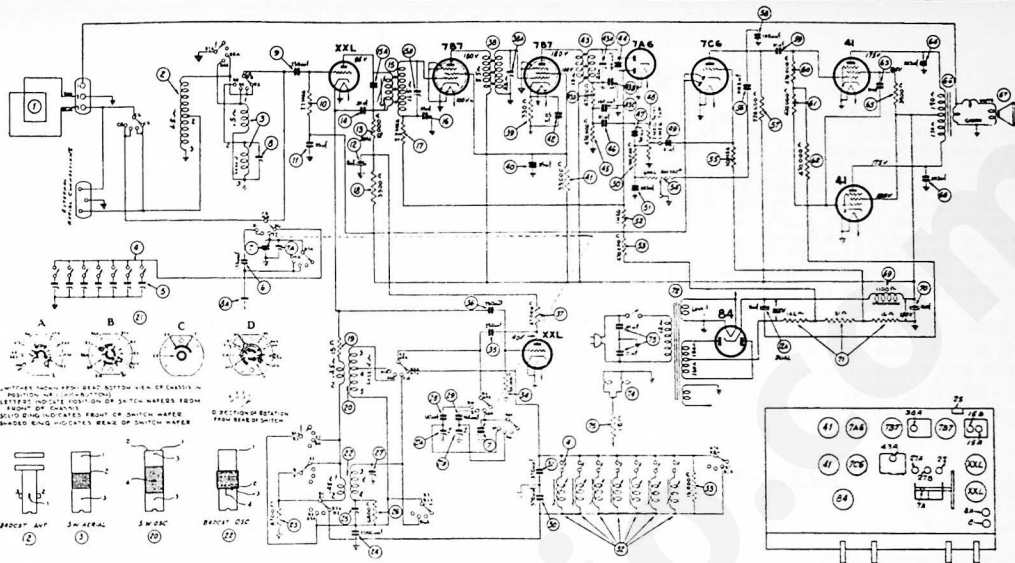
To improve the operating performance resistor (10) on diagram 2.2 megohms was changed to 4.7 megohms, Part No. 33-547339.

To improve Short Wave, padding compensator (8) on dia-

gram was changed from Part No. 31-6407 to 31-6418.

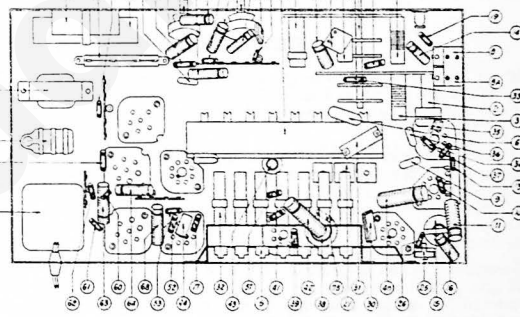
To operate Model 41-256 on 230 volts, 60 cycle current, power transformer (72) on diagram should be changed to Part No. 32-8142.

MODEL 41-256, CODE 121 (CONTINUED)



Replacement Parts — Model 41-256

No.	Description	Part No.
①	Loop Aerial	76-1229
②	Screws	W-2071
③	Aerial Transformer (Brdst)	32-3644
④	Clip	28-5002
⑤	Aerial Transformer (S.W.)	32-3641
⑥	Push-button Switch	42-1587
⑦	Push-button Compensator	31-6389
⑧	Mica Condenser (155 mmfd.)	30-1176
⑨	Tuning Condenser	31-2533
⑩	Tuning Shaft	76-1088
⑪	C Washer	28-2043
⑫	Spring Washer	28-1300
⑬	Spring Washer	50-1650
⑭	Drive Cord	31-2502
⑮	Spring (Drive Cord)	28-8913
⑯	Drum (Tuning Condenser)	38-0856
⑰	Compensator (S.W. Aerial)	31-6407
⑱	Compensator	Part of ⑳
㉑	Mica Condenser (250 Mmfd.)	60-125157
㉒	Resistor (2.2 megohms)	33-422339
㉓	Condenser (.05 mfd., 200 volts)	30-4519
㉔	Electrolytic Condenser (8-16 mfd.)	30-2475
㉕	Electrolytic Condenser (10 mfd.)	Part of ㉖
㉖	Resistor (10,000 ohms)	33-310339
㉗	Condenser (.01 mfd., 400 volts)	30-4572
㉘	First I. F. Transformer	32-3482
㉙	Condenser (.05 mfd., 200 volts)	30-4519
㉚	Resistor (2.2 megohms)	33-233339
㉛	Resistor (3,300 ohms)	33-233339
㉜	Resistor (15 ohms)	33-015339
㉝	Oscillator Transformer (S.W.)	32-3500
㉞	Clip	28-5002
㉟	Band Switch	42-1656
㊱	Oscillator Transformer (Brdst)	32-3642
㊲	Clip	28-5002
㊳	Resistor (1,700 ohms)	33-247339
㊴	Condenser (2,000 mmfd.)	60-220324
㊵	Compensator (750 K.C.)	31-6410
㊶	Resistor (6,800 ohms)	33-263339
㊷	Oscillator Compensator (1500 K.C.)	31-6400
㊸	Oscillator Compensator (18 M.C.)	Part of ㊹
㊹	Oscillator Compensator (12 M.C.)	Part of ㊺
㊻	Mica Condenser (145 mmfd.)	30-1177
㊼	Mica Condenser (162 mmfd.)	30-1178
㊽	Mica Condenser (370 mmfd.)	30-1110
㊾	Mica Condenser (370 mmfd.)	30-1110
㊿	Push-button Oscillator Transformers	
	Assembly	32-3643
	Transformers 1 to 5	32-3597
	Transformers 6 to 7	32-3041
	Iron Core	28-8916
①	Resistor (15,000 ohms)	33-315339
②	Resistor (100,000 ohms)	33-410339
③	Mica Condenser (250 mmfd.)	60-125157
④	Mica Condenser (370 mmfd.)	33-317339
⑤	Resistor (330 ohms)	32-3483
⑥	Condenser (.05 mfd., 200 volts)	30-4519
⑦	Resistor (53,000 ohms)	33-333339
⑧	Condenser (.05 mfd., 200 volts)	30-4444
⑨	Third I. F. Transformer	32-3484
⑩	Compensator	Part of ⑪
⑪	Condenser (100 mmfd.)	Part of ⑫



PART LOCATIONS — UNDERSIDE OF CHASSIS

Schem.	Description	Part No.
⑬	Condenser (100 mmfd.)	Part of ⑬
⑭	Resistor (47,000 ohms)	Part of ⑭
⑮	Mica Condenser (100 mmfd.)	60-110157
⑯	Resistor (470,000 ohms)	33-447339
⑰	Condenser (.01 mfd., 400 volts)	30-4572
⑱	Mica Condenser (50 mmfd.)	60-050137
⑲	Volume Control	33-5408
㉑	Condenser (.01 mfd., 400 volts)	30-4572
㉒	Resistor (100,000 ohms)	33-410339
㉓	Condenser (.003 mfd., 1,000 volts)	30-4469
㉔	Resistor (1 megohm)	33-510339
㉕	Resistor (470,000 ohms)	33-447339
㉖	Tone Control	33-5408
㉗	Resistor (10 megohms)	33-610339
㉘	Condenser (.005 mfd., 1,000 volts)	30-4469
㉙	Resistor (220,000 ohms)	33-422339
㉚	Mica Condenser (100 mmfd.)	60-110157
㉛	Condenser (.01 mfd., 400 mfd.)	30-4572
㉜	Resistor (470,000 ohms)	33-447339
㉝	Resistor (470,000 ohms)	33-447339
㉞	Resistor (470,000 ohms)	33-447339
㉟	Condenser (.01 mfd., 400 volts)	30-4572
㊱	Condenser (.003 mfd., 1,000 volts)	30-4469
㊲	Resistor (3,900 ohms)	33-233339
㊳	Output Transformer	32-8120
㊴	Cone Assembly (For Speaker 36-1519-3)	36-4166
㊵	Condenser (.003 mfd., 1,000 volts)	30-4469
㊶	Field Coil (Replace Speaker 36-1519)	30-2474
㊷	Electrolytic Condenser (12 mfd.)	
	Clamp	56-1848
	Blas Resistor (15.31, 146 ohms)	33-3393
	Power Transformer (115 volts, 60 cy.)	32-8121
	Power Transformer (115 volts, 25 cy.)	32-8147
	Power Line Condenser (.01-.01 mfd.)	30030 DC
①	Pilot Lamps (Dial)	34-2064
②	Pilot Lamps (Cabinet)	34-2210

Schem.	Description	Part No.
③	Resistor (1.8 ohms)	33-918339
	MISCELLANEOUS PARTS	
	Cabinet	10493 A
	Cable (Power)	L-1399
	Cable (Speaker)	41-3542
	Bezel	54-4038
	Screw	W-2073
	Dial Scale	27-5694
	Rubber Channel	54-4018
	Clamp	56-1317
	Scale Background	27-8800
	Spring (Background Plate)	28-8908
	Pointer	56-1516
	Drive Cord (Band Indicator Light)	31-2520
	Spring	28-8954
	Housing (Band Indicator Light)	76-1170
	Knobs (Tuning-Volume)	27-4888
	Knobs (Push-buttons)	54-4009
	Pulley (Band Indicator)	56-2035
	Mounting Bolt & Washer (Chassis Mounting)	318-1113
	Rubber Corner (Chassis)	54-4015
	Rubber Grommet	27-4396
	Socket Assembly (Pilot Lamp)	38-9607
	Socket Assembly (Dial Lamp)	76-1171
	Socket (84 Tube)	27-6167
	Socket (41 Tube)	27-6168
	Socket (Loktal, XXL Tube)	27-6129
	Socket (Loktal)	27-6138
	Socket (Aerial)	27-6145
	Speaker	36-1519
	Terminal Panel Loop	38-9870
	Tab (Television)	27-5648
	Tab (Off-On)	27-5647
	Tab (Power)	27-5629
	Tab Kit	40-6595