Philco Radio & Television Corp.

Model: 42-854	**Chassis:**	**Year:** Pre 1945
Power:	**Circuit:**	**IF:**
Tubes:		
Bands:		

Resources
Riders Volume 14 - PHILCO 14-78
Riders Volume 14 - PHILCO 14-79, 80
Riders Volume 14 - PHILCO 14-81
Riders Volume 14 - PHILCO 14-143

MODEL 42-842 (122)
MODELS 42-842, 42-843, 42-844 PHILCO RADIO & TELEVISION CORP.
MODELS 42-853, 42-854

PRODUCTION CHANGES

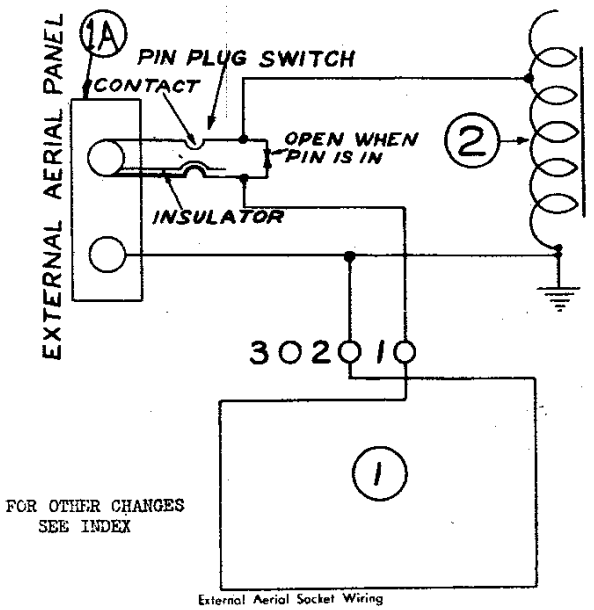
Model 42-842, Code 122 is similar to code 121 with the exception of the external aerial input panel, auxiliary plug-in loop aerial, cabinet and several parts. The schematic diagram, aligning instructions and specifications in service bulletin 391 for 42-842, code 121 applies to 42-842, code 122 with the parts and aerial panel change shown below. The Philco auxiliary plug-in loop aerial part No. 45-2935 should be used with this model when an outside aerial is required. This loop aerial is a low impedance type.

REPLACEMENT PARTS—MODEL 42-842, CODE 122.

SCHEM. No.	DESCRIPTION	PART No.
1.	Loop Aerial	76-1429
	Screw (Loop Mtg.)	W-2073
1A.	External Loop Terminal Socket	27-6183
2.	Aerial Transformer	32-3622
	Clip	28-5002
3.	Mica Condenser (250 mmfd.)	60-125187
4.	Tuning Condenser	31-2538
	Rubber Grommet (Mtg.)	27-4596
	Spacers (Mtg.)	28-2806
	Swing (Drive Cord)	26-6882
	Tuning Shaft	96-6132
	"E" Washer	29-5990
	Drive Cord	31-2380
5.	Mica Condenser (886 mmfd.)	60-180137
6.	Condenser (.05 mfd., 200 volts)	30-4519
7.	Oscillator Transformer	32-3665
	Iron Core	57-2325
8.	Resistor (150,000 ohms)	33-415339
9.	Resistor (2.2 megohms)	33-522339
10.	Mica Condenser (100 mmfd.)	60-110157
11.	Resistor (4.7 megohms)	33-547339
12.	Condenser (.05 mfd., 200 volts)	30-4519
13.	Oscillator Choke	32-3645
14.	Filament Choke	32-3632
15.	1st I. F. Transformer	32-3620
	Painut (Mtg.)	W-1949
16.	Resistor (27,000 ohms)	33-327339
17.	Condenser (.2 mfd.)	30-4587
18.	Condenser (.05 mfd., 200 volts)	30-4519
19.	Condenser (.05 mfd., 200 volts)	30-4519
20.	Resistor (1,500 ohms)	33-215339
21.	Resistor (1 megohm)	33-510339
22.	Condenser (.05 mfd., 200 volts)	30-4519
23.	Condenser (.2 mfd.)	30-4587
24.	Resistor (4.7 megohms)	33-547339
25.	2nd I. F. Transformer	32-3621
	Painut (Mtg.)	W-1949
26.	3rd I. F. Transformer	32-3631
	Painut (Mtg.)	W-1949
27.	Condenser (.05 mfd., 200 volts)	30-4519
28.	Resistor (1,000 ohms)	33-210339
29.	Resistor (1,000 ohms)	33-210339
30.	Volume Control	33-5436
	Painut (Mtg.)	W-2157
30A.	Switch	(Part of 30)
31.	Resistor (1,000 ohms)	33-210339
32.	Resistor (1,000 ohms)	33-210339
33.	Condenser (.004 mfd., 400 volts)	30-4578
34.	Resistor (4.7 megohms)	33-547339
35.	Condenser (.004 mfd., 400 volts)	30-4578
36.	Mica Condenser (100 mmfd.)	60-110157
37.	Resistor (1 megohm)	33-510339
38.	Resistor (2.2 megohms)	33-522339
39.	Condenser (.005 mfd., 1,000 volts)	30-4469
40.	Output Transformer	32-6169
41.	Cone Assembly (for Speaker 36-1540)	36-4201
42.	Condenser (.05 mfd., 200 volts)	30-4519
43.	Battery Plug and Cable	41-3570
44.	Automatic Power Change Over Switch	42-1050
	Spacer	57-0194
45.	Condenser (.2 mfd.) & Choke Assy.	76-1227
46.	Resistor (1,500 ohms)	33-215339
47.	Electrolytic Condenser	30-2498
	Clamp	34-1452
48.	Resistor (1,500 ohms)	33-215339
49.	Resistor (1,200 ohms)	33-3424
50.	Condenser (.05 mfd., 400 volts)	30-4518
51.	Resistor (500 ohms)	33-150339
52.	Battery Cable	41-3570

MISCELLANEOUS PARTS

Cabinet (42-842)		108330
Cable Power		L-3299
Clamp (Battery)		56-2178
Screw (Clamp)		W-527
Nut (Clamp)		W-2261
Dial Scale		27-5699
Screw		W-453
Washers		W-848
Dial Pointer		27-4868
Knob		27-4970
Speaker		36-1540
Socket		27-6177
Socket		27-6174
Grommet (Mtg. Socket)		54-4965
Adapter Plate		56-2112
Screw (Chassis Mtg.)		W-2030
Washer (Chassis Mtg.)		W-410
External Low Impedance Loop Aerial		45-2935



FOR OTHER CHANGES SEE INDEX

External Aerial Socket Wiring
Model 42-842, Code 122

Filament Resistor Change in Models 42-842, 843, 844, 853, 854

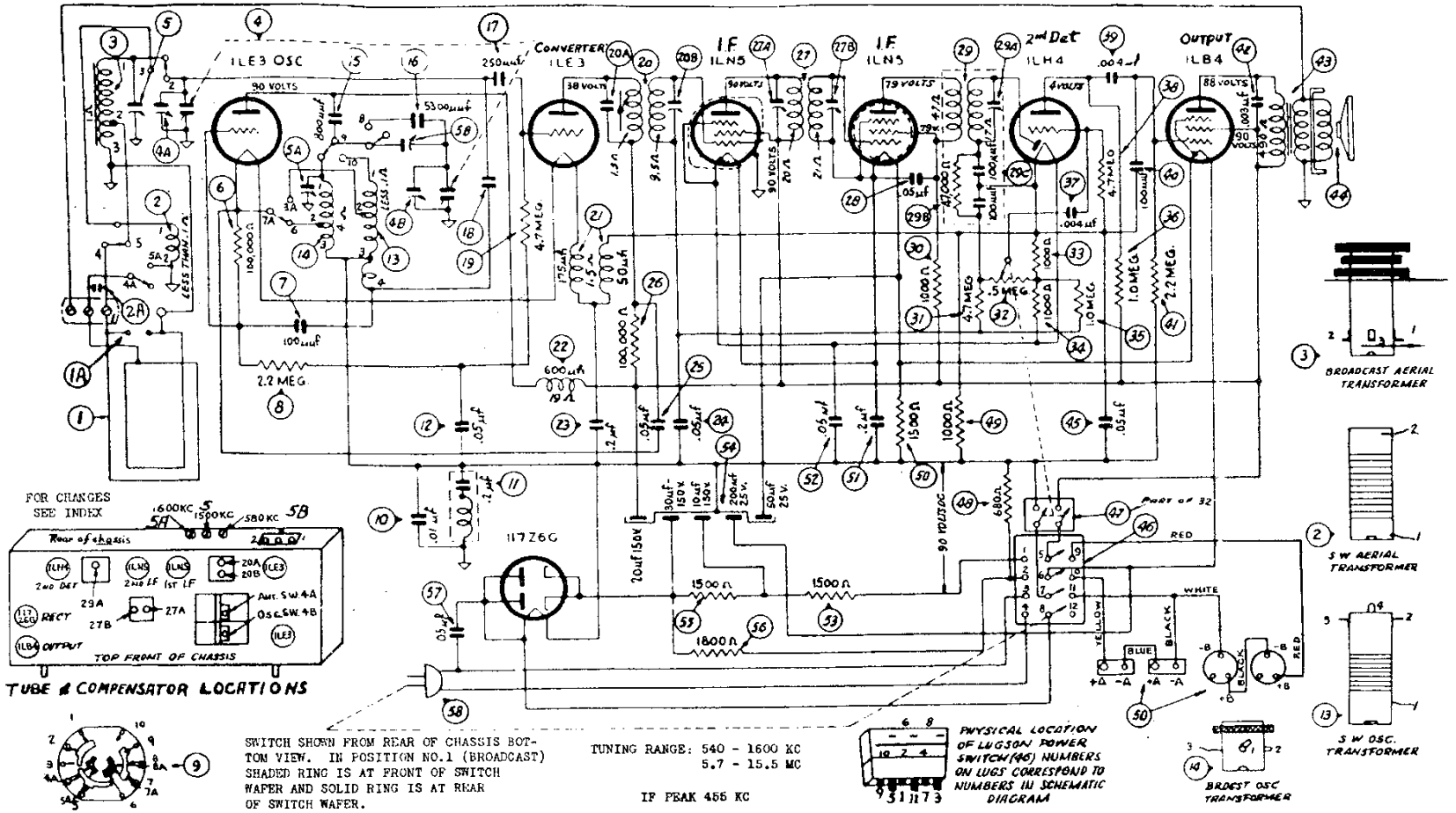
In the above listed models, complaints may be received of a complete set of tubes testing weak. Replacement of the tubes restores normal operation for only a short time after which the same condition re-occurs.

The condition is caused by the overheating of the series filament resistor shown as No. 49 in Service Bulletin No. 391 and as No. 56 in Service Bulletin No. 388. When the overheating takes place, the resistor breaks down, its resistance value decreases, thus allowing an increased filament current to the tubes with resulting damage to the filaments.

An entirely new replacement resistor is available — Part No. 33-3424. This resistor is considerably longer than the one now in the set and is equipped with a protecting cover. The resistor is mounted vertically over one of the original holes in the chassis with a suitable drive screw. The tab on the cover is soldered to the chassis. The longer leads which are required for the installation and which should be fireproof, and not ordinary rubber covered, are brought down through the large hole in the chassis. The other large hole should be plugged up with a spring button, such as Philco Part No. W2232.

Although the Service Bulletin parts listing calls for resistor No. 33-218339, the number of the resistor which has been used is 33-3410. If a replacement is necessary, however, the new resistor No. 33-3424 should be used.

PHILCO RADIO & TELEVISION CORP



SWITCH SHOWN FROM REAR OF CHASSIS BOTTOM VIEW. IN POSITION NO.1 (BROADCAST) SHADED RING IS AT FRONT OF SWITCH WAFER AND SOLID RING IS AT REAR OF SWITCH WAFER.

TUNING RANGE: 540 - 1600 KC
5.7 - 15.5 MC

IF PEAK 455 KC

PHYSICAL LOCATION OF LUGSON POWER SWITCH(46) NUMBERS ON LUGS CORRESPOND TO NUMBERS IN SCHEMATIC DIAGRAM

SCHE. No.	DESCRIPTION	PART No.
1.	Loop Aerial (42-853)	76-1278
	Mtg. Screw	W-2071
1A.	External Loop Aerial Socket	27-6175
2.	Aerial Transformer (S. W.)	32-3716
	Mtg. Clip	28-5002
2A.	Mica Condenser 15 mmfd.	60-015137
3.	Aerial Transformer (Broadcast)	32-3717
	Mtg. Clip	23-5007
4.	Tuning Condenser	31-2556
	Mtg. Spacer	28-5663
	Mtg. Grommet	27-5498
	Tuning Shaft	96-6136
	"C" Washer	28-5980
	Pointer (Dial)	27-4884
	Spring (Cond. Drive)	28-5982
	Drive Cord	31-2545
	Washer Mtg. Cond.	W-151
	Lockwashers Mtg. Cond.	W-304
	Scr. - Mtg. Cond.	W-523
	Nuts Mtg. Cond.	W-1543
5.	Compensator (Brdcst. Aerial Trans.)	31-8427
6.	Resistor (180,000 ohms)	33-410339
7.	Mica Condenser (100 mmfd.)	60-101057
8.	Resistor (2.2 megohms)	33-522339
9.	Band Switch	42-1670
	Mtg. Nut	W-2157
10.	Condenser (.01 mfd., 400 volts)	30-4572
11.	Condenser (.2 mfd. and R. F. choke)	76-1277
12.	Condenser (.05 mfd., 200 volts)	30-4519
13.	Oscillator Transformer (S. W.)	32-3720
14.	Oscillator Transformer (Brdcst.)	32-3719
15.	Mica Condenser (400 mmfd.)	60-101157
16.	Mica Condenser (5300 mmfd.)	60-253723
17.	Mica Condenser (250 mmfd.)	60-125157
18.	Condenser, Consisting of a lug mounted on contact 2, Band Switch	
19.	Resistor (4.7 megohms)	33-547339
20.	1st I. F. Transformer	32-3620
21.	Filament Choke	32-3632
22.	Oscillator Plate Choke	32-3615
23.	Condenser (.2 mfd., 200 volts)	30-4519
24.	Condenser (.05 mfd., 200 volts)	30-4519
25.	Condenser (.05 mfd., 200 volts)	30-4519
26.	Resistor (100,000 ohms)	33-410339
27.	2nd I. F. Transformer	32-3621
	Mtg. Nut	W-1949
28.	Condenser (.05 mfd., 200 volts)	30-4519
29.	3rd I. F. Transformer	32-3631
29A.	Compensator part of 29	
29B.	Resistor 47,000 ohms part of 29	33-347339
29C.	Condenser (100 mmfd.) part of 29	
30.	Resistor (1,000 ohms)	33-210339
31.	Resistor (4.7 megohms)	33-547339
32.	Volume Control	31-3438
	Mtg. Nut	W-2157
33.	Resistor (1,000 ohms)	33-210339
34.	Resistor (1,000 ohms)	33-210339
35.	Resistor (1 megohm)	33-510339
36.	Resistor (1 megohm)	33-510339
37.	Condenser (.004 mfd., 400 volts)	30-4578
38.	Resistor (4.7 megohms)	33-547339
39.	Condenser (.004 mfd., 400 volts)	30-4578
40.	Mica Condenser (100 mmfd.)	60-101157
41.	Resistor (2.2 megohms)	33-522339
42.	Condenser (.003 mfd., 1,000 volts)	30-4469
43.	Output Transformer	32-3169
44.	Cone Assembly (for speaker 36-1540-3)	36-4205
45.	Cohdenser (.05 mfd., 200 volts)	30-4519
46.	Battery and Powerline Changeover Switch	42-1650
	Mtg. Spacers	57-0194
	Screws	W-1383
	Spacers	57-0194
47.	OFF-O-M Switch (part of 32)	33-547339
48.	Resistor (680 ohms)	33-168336
49.	Resistor (1,500 ohms)	33-215339
50.	Resistor (1,500 ohms)	33-215339
51.	Condenser (.2 mfd., 200 volts)	30-4587
52.	Condenser (.05 mfd., 200 volts)	30-4519
53.	Resistor (1,500 ohms)	33-215339
54.	Electrolytic Condenser 10 mfd.-150 volts; 20 mfd.-150 volts 30 mfd.-150 volts; 50 mfd.- 25 volts 200 mfd.-25 volts	30-2484
	Clamp (Mtg. Elect. Cond.)	56-1452
55.	Resistor (1,500 ohms)	33-215339
56.	Resistor (1,800 ohms)	33-218339
57.	Condenser (.05 mfd., 400 volts)	30-4578
58.	Power Cord (A.C.-D.C.)	41-3795
59.	Battery Cable	41-3570

MISCELLANEOUS

Cabinet 42-853	105378
Cabinet 42-854	105388
Clamp (Battery)	56-2178
Screw	W-327
Nut	W-2261
Dial Scale	27-5729
Washer	3003
Screws	W-453
Knobs	27-4878
Lock (42-853 Cabinet)	45-6184
Key	45-6203
Socket (Tubes)	27-6177
Rivets	W-238
Socket (1st I. F. Tube)	27-5174
Rubber Washer (Mtg. socket)	27-4162
Rubber Grommets	27-4707
Adapter Plate (Mtg. Socket)	56-2112
Stud	56-6428
Speaker	36-1540

POWER SUPPLY: For battery operation two Philco "A" batteries type P-100 and two Philco "B" batteries type P-200 are required. When operating these radios with the batteries wrap the power line cord around its holder clamp on the back of the cabinet and insert the plug and into the socket provided on the chassis. To operate on a 115 volt A.C. or D.C. power supply, remove the power line cord plug from the socket on the chassis and insert it into a power receptacle.

PHILCO RADIO & TELEVISION CORP.

MODELS 42-842, 42-843, 42-844
MODELS 42-853, 42-854

CONNECTING ALIGNING INSTRUMENTS

AUDIO OUTPUT METER: If an audio output meter is used, connect it across the plate and screen terminals of the output tubes. Adjust the meters to use the 0 to 10 scale. Terminal No. 1 on the rear of the chassis which connects to the speaker is also provided for connecting the audio output meter. If this terminal is used, the lowest scale of the meter should be used when aligning.

VACUUM TUBE VOLTMETER: If a vacuum tube voltmeter is used as an aligning indicator, the negative (—) terminal is connected to the A. V. C. circuit of the receiver through a 2 megohm resistor. The positive (+) terminal is connected to the chassis or ground.

SIGNAL GENERATOR: When adjusting the "I. F." padders the high side of the signal generator is connected through a .1 mfd. condenser to the loop tuning condenser stator lug which connects to the grid of the first detector tube. The ground or low side of the signal generator is connected to the chassis of the receiver.

When aligning the R. F. padders of the portable models a loop aerial is made from a few turns of wire and connected to the signal generator output terminals. The signal generator is then placed a few feet from the set. The loop aerial of the receiver should be assembled in the cabinet together with the battery when adjusting the R. F. padders.

MODELS 42-842, 42-843, 42-844

These models may be adjusted when operated by battery or 115 volts A.C.-D.C. power.

Operations In Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	See Paragraph on Signal Generator above	465 K.C.	540 K.C.	Vol. Max.	26A, 25A, 25B, 15A, 15B	Note A
2	Use Loop on Generator as above	1500 K.C.	1500 K.C.	Vol. Max.	4B, 4A	
3	Use Loop on Generator as above	580 K.C.	580 K.C.	Vol. Max.	7A, Note B	Roll Tuning Condenser to Max.
4	Use Loop on Generator as above	Repeat Operation 2	Repeat Operation 2	Repeat Operation 2		

NOTE A: DIAL CALIBRATION — Before adjusting the R. F. padders the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser in the closed position (maximum capacity), set the dial pointer on the small dot below 540 K.C.

NOTE B — Roll tuning condenser as compensator 7A is being adjusted until maximum output is indicated on output meter.

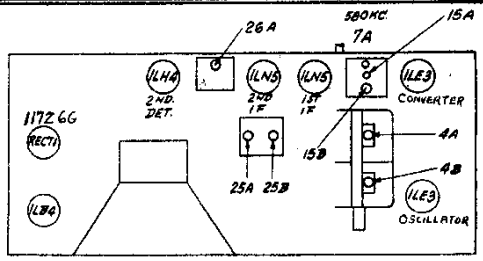


FIG. 1. LOCATIONS OF COMPENSATORS.

MODELS 42-853, 42-854

These models may be adjusted when operated by battery or 115 volts A.C.-D.C. power.

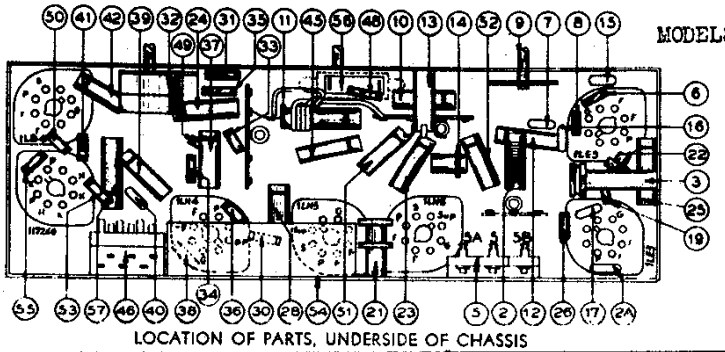
Operations In Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1.	See paragraph on Signal Generator above	455 K.C.	540 K.C.	Vol. Max. Band—Broadcast	20A, 20B, 27A, 27B, 29A	Note A
2.	Loop on Generator	15 mc.	15 mc.	Band—S.W.	4B, 4A	Note B
3.	Loop on Generator	1600 K.C.	1600 K.C.	Band—Broadcast	5A	
4.	Loop on Generator	1500 K.C.	1500 K.C.	Band—Broadcast	5	Note C
5.	Loop on Generator	580 K.C.	580 K.C.	Band—Broadcast	5B	Roll Tuning Condenser
	Repeat operation 3					

NOTE A: DIAL CALIBRATION — Before adjusting the R. F. padders the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser in the closed position (maximum capacity), set the dial pointer on the small dot below 540 K.C.

NOTE B: When adjusting the S. W. oscillator compensator be sure to tune in the fundamental signal (15 mc.) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning the signal generator dial 910 mc. below the fundamental signal which will be 14.090 mc.

NOTE C: To adjust the aerial compensator (5) to maximum, first set signal generator to 1500 K.C., then tune in this signal on the radio. The aerial compensator is then adjusted to maximum output.

MODELS 42-853, 42-854

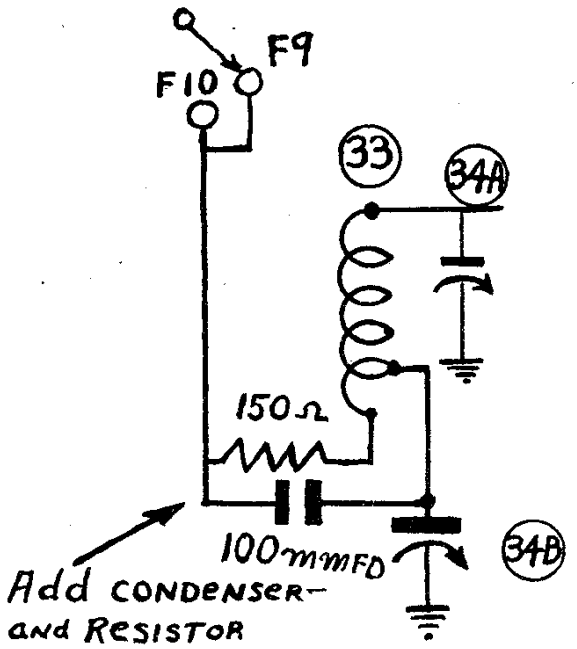


LOCATION OF PARTS, UNDERSIDE OF CHASSIS

PHILCO RADIO & TELEVISION CORP.

61	CONDENSER (.006 mfd.)	30-4591 400 volts	30-4610
70	CONDENSER (.05 mfd.)	30-4519 200 volts	30-4609 200 volts
84	CONDENSER (.003 mfd.)	30-4582 (600 volts)	30-4608

If trouble is experienced in padding the 22 M.C. normal tuning range (compensator 38A), the installation of a 150 ohm resistor Part No. 33-115339 and a 100 mmfd. condenser will improve the operation. These parts are installed in the circuit as shown in the diagram below.



MODELS 42-842, 42-843, 42-844

To improve the tuning operation of the oscillator circuit the oscillator transformer (7) was changed from Part No. 32-3633 to 32-3685. The iron core for both of these transformers is Part No. 57-2325.

Power cord changed from Part No. L-3199 to L-3299.

Correction: Resistor (49) shown as 33-218339 in the parts list should be changed to 33-3410.

MODELS 42-853, 42-854

Correction, Note B

The second line of this paragraph should read as follows: "adjusted, the image signal will be found by turning the signal generator 910 K.C. above the fundamental signal which will be 15.910 M.C."

MODEL 42-1001, CODE 121

CONVERTING THE PHONOGRAPH MOTOR FOR USE ON 50 CYCLE A.C. LINES

The motor in this model designed for operation on 60 cycle A.C. lines. The motor will operate satisfactorily on 50 cycle lines. The only change that needs to be made is to change the drive ratio between the motor pulley and the turntable drive pulley. This is accomplished by putting a coil spring, Part No. 28-8999, over the motor drive pulley. Screw it on the drive pulley counterclockwise with the long pig tail at the top. The pig tail can be cut off after the spring has been placed on the pulley.

MODEL 42-1002, CODE 121-122

CONVERTING THE PHONOGRAPH MOTOR FOR USE ON 50 CYCLE A.C. LINES

Follow instructions as for Model 42-1001

MODEL 42-1003, CODE 121-122

The light beam pick-up (9) of later production Code 122 chassis was changed from a metal tone arm Part No. 35-2517 to a plastic tone arm Part No. 35-2601. The counter-weight when using the plastic tone arm is Part No. 318-2863 (3 oz.). A new rubber bumper is also required Part No. 54-4167.

CONVERTING THE PHONOGRAPH MOTOR FOR USE ON 50 CYCLE A.C. LINES

Follow instructions as for Model 42-1001

MODEL 42-1004, CODE 121

To improve the operating performance of the rectifier circuit, the wiring of rectifier tube 50Y6GT socket was changed as follows:

Remove the bare wire between contacts 2 and 3. Connect a wire from contact 3 of the socket (see figure 3 in bulletin) to the lug of the filament resistor (43) to which condenser (40) is already attached. This change was incorporated in all chassis marked run 2. Sets prior to run 2 do not have this wiring change.

Beginning with chassis marked run 3 condenser (36) .01 mfd., 400 volts Part No. 30-4572 was changed to .006 mfd., 400 volts Part No. 30-4591. This change was made to improve the tone quality of the phonograph.

Loop Aerial (1) changed from Part No. 76-1368 to Part No. 76-1372.

CONVERTING THE PHONOGRAPH MOTOR FOR USE ON 50 CYCLE A.C. LINES

Follow instructions as for Model 42-1001

MODEL 42-1005, CODE 121-122

Two types of Photo Electric pickups (9) were used on Code 122 models. One consisted of a metal tone arm Part No. 35-2531 and the other a plastic arm Part No. 35-2602. When using the plastic tone arm a 3 oz. counter weight Part No. 318-2863 must be used in the supporting end of the arm. A new tone arm bumper Part No. 54-4167 is also required.

CONVERTING THE PHONOGRAPH MOTOR FOR USE ON 50 CYCLE A.C. LINES

Follow instructions as for Model 42-1001

MODEL 42-1006, CODE 122

Condenser (7) changed from Part No. 76-1161 to 76-1227. Values remain the same. Construction change only.

CONVERTING THE PHONOGRAPH MOTOR FOR USE ON 50 CYCLE A.C. LINES

Follow instructions as for Model 42-1001