



Philco Radio & Television Corp.

	Model: 38-1	Chassis:	Year: Pre October 1937
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		
Resources			
Riders 8 (VIII) PHILCO 8-52			
Riders 8 (VIII) PHILCO 8-53			
Riders 8 (VIII) PHILCO 8-54			

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

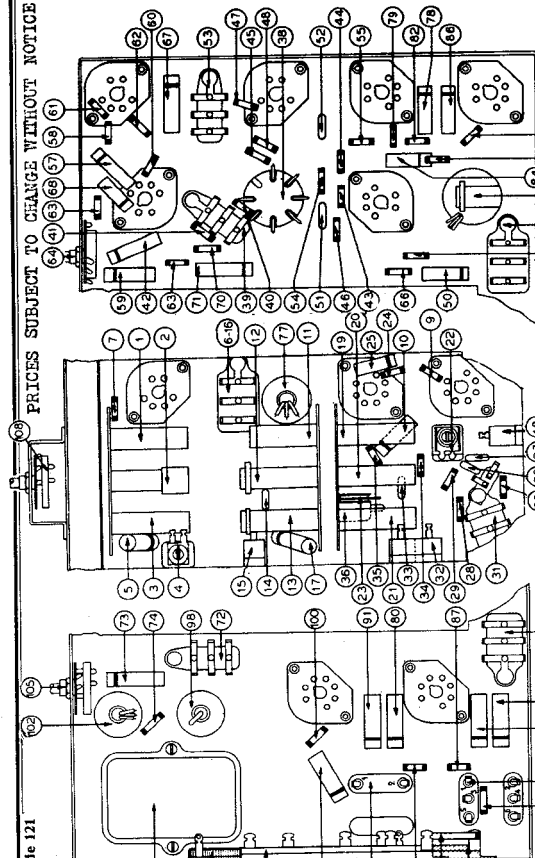
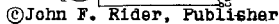


Fig. 3. Part Locations, Underside of Chassis

Schem.	Description	Part No.	Price	Sum.	Description	Part No.	Price	Sum.	List	Schem.	Description	Part No.	Price	Sum.	Net
46	Resistor (1.0 meg., 1/2 watt)	33-510338			Condenser (.25 μ l. tubular)	33-531543			0.25	46	Knob (From Volume)	27-45333			27-45333
47	Resistor (1.0 meg., 1/2 watt)	33-510338			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	47	Knob (From Volume)	27-45333			27-45333
48	Resistor (1.0 meg., 1/2 watt)	33-510338			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	48	Knob (From Volume)	27-45333			27-45333
49	Resistor (1.0 meg., 1/2 watt)	33-510338			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	49	Knob (From Volume)	27-45333			27-45333
50	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	50	Knob (From Volume)	27-45333			27-45333
51	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	51	Knob (From Volume)	27-45333			27-45333
52	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	52	Knob (From Volume)	27-45333			27-45333
53	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	53	Knob (From Volume)	27-45333			27-45333
54	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	54	Knob (From Volume)	27-45333			27-45333
55	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	55	Knob (From Volume)	27-45333			27-45333
56	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	56	Knob (From Volume)	27-45333			27-45333
57	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	57	Knob (From Volume)	27-45333			27-45333
58	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	58	Knob (From Volume)	27-45333			27-45333
59	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	59	Knob (From Volume)	27-45333			27-45333
60	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	60	Knob (From Volume)	27-45333			27-45333
61	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	61	Knob (From Volume)	27-45333			27-45333
62	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	62	Knob (From Volume)	27-45333			27-45333
63	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	63	Knob (From Volume)	27-45333			27-45333
64	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	64	Knob (From Volume)	27-45333			27-45333
65	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	65	Knob (From Volume)	27-45333			27-45333
66	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	66	Knob (From Volume)	27-45333			27-45333
67	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	67	Knob (From Volume)	27-45333			27-45333
68	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	68	Knob (From Volume)	27-45333			27-45333
69	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	69	Knob (From Volume)	27-45333			27-45333
70	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	70	Knob (From Volume)	27-45333			27-45333
71	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	71	Knob (From Volume)	27-45333			27-45333
72	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	72	Knob (From Volume)	27-45333			27-45333
73	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	73	Knob (From Volume)	27-45333			27-45333
74	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	74	Knob (From Volume)	27-45333			27-45333
75	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	75	Knob (From Volume)	27-45333			27-45333
76	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	76	Knob (From Volume)	27-45333			27-45333
77	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	77	Knob (From Volume)	27-45333			27-45333
78	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	78	Knob (From Volume)	27-45333			27-45333
79	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	79	Knob (From Volume)	27-45333			27-45333
80	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	80	Knob (From Volume)	27-45333			27-45333
81	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	81	Knob (From Volume)	27-45333			27-45333
82	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	82	Knob (From Volume)	27-45333			27-45333
83	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	83	Knob (From Volume)	27-45333			27-45333
84	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	84	Knob (From Volume)	27-45333			27-45333
85	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	85	Knob (From Volume)	27-45333			27-45333
86	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	86	Knob (From Volume)	27-45333			27-45333
87	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	87	Knob (From Volume)	27-45333			27-45333
88	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	88	Knob (From Volume)	27-45333			27-45333
89	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	89	Knob (From Volume)	27-45333			27-45333
90	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	90	Knob (From Volume)	27-45333			27-45333
91	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	91	Knob (From Volume)	27-45333			27-45333
92	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	92	Knob (From Volume)	27-45333			27-45333
93	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	93	Knob (From Volume)	27-45333			27-45333
94	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	94	Knob (From Volume)	27-45333			27-45333
95	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	95	Knob (From Volume)	27-45333			27-45333
96	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	96	Knob (From Volume)	27-45333			27-45333
97	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	97	Knob (From Volume)	27-45333			27-45333
98	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	98	Knob (From Volume)	27-45333			27-45333
99	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	99	Knob (From Volume)	27-45333			27-45333
100	Condenser (.01 μ l. tubular)	33-4455			Resistor (100,000 Ω , 1/2 watt)	33-531543			0.25	100	Knob (From Volume)	27-45333			27-45333

*These Automatic Tuning Mechanism parts differ from those shown in Service Bulletin 273.



MODEL 38-1, Code 121
Alignment, Trimmers
Voltage

PHILCO RADIO & TELEV. CORP.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator, having a fundamental frequency range covering the intermediate and tuning frequencies of the receiver. Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 30000 K.C. is the correct instrument for this purpose; (2) Output Meter, Philco Model 026 Circuit Tester incorporates a sensitive output meter and is recommended; (3) Philco Fiber Handle Screw Driver, part number 27-7059 and Fibre Wrench, part number 3166.

OUTPUT METERS: The 026 Output Meter is connected to the plate and cathode terminals of one of the 6P6C tubes. Adjust the meter to use the (0-30) vol scale and advance the attenuator control of the generator until a readable indication is noted on the output meter after signal is applied to stage being adjusted.

DIAL CALIBRATION: In order to adjust the compensators of this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this proceed as follows:

1. Loosen the set screws on the shaft coupling of the tuning condenser. Then turn the tuning condenser until the plates are in the maximum capacity position. Now turn the dial until the glowing beam indicator is on the INDEX LINE at the low frequency end of Range 2. See Fig. 4. With dial and tuning condenser in this position tighten set screws.
2. Turn the tuning condenser control until the indicator is on the 2.2 M. C. mark.
3. With the dial in this position, loosen the shaft coupling set screws. Then turn the dial until the indicator is again on the INDEX LINE. Tighten the set screws in this position.

NOTE: Be careful when turning the dial that the position of the tuning condenser is not disturbed.

INTERMEDIATE FREQUENCY CIRCUIT

A. Set the receiver and signal generator controls as follows:

1. Range Switch (Broadcast Position)
2. Volume Control (Maximum)
3. Magnetic Tuning Switch "Off"
4. Tone Control First Position
5. Signal Generator Dial 470 K.C.

B. Connect the signal generator output cable through a .1 mf. condenser to the grid of the 6A6C Diode. Osc. tube and connect the cableground to the receiver chassis. Set the generator "attenuator" for maximum output. Adjust the I. F. compensators as follows:

1. Turn compensator (37C) in until the output meter reading decreases almost to zero.
2. Now adjust the compensators, (37B) and (37A), for maximum output; then readjust (37C) for maximum output.
3. Turn compensator (38C) in about three turns; then adjust compensators (38B) and (38A) for maximum output. The adjustment of compensator 38C is given in the "Magnetic Tuning Circuit Adjustments" below.

RADIO FREQUENCY CIRCUIT

1. Set the controls as given under "Intermediate Frequency Circuit" 1 to 4 and set the range switch, signal generator and receiver dials as given under the adjustment of each tuning range in the following procedure.

Connect the Signal Generator output cable into the "Mod" jack of the generator panel and connect the other end through a .1 mf. condenser to the "Red" terminal of the receiver aerial panel (rear of chassis). The ground connection of the cable should be connected to the "Blk" terminal.

2. Adjust the "R. F." compensators for maximum output as follows:

Tuning Range: 530 to 1720 K. C.

Range Switch Signal Generator and Receiver Dial

- 1 1550 K. C.
- 1 580 K. C.
- 1 1550 K. C.

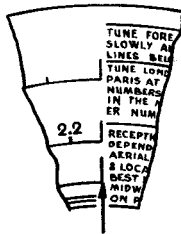
Tuning Range 2.3 to 7.4 M. C.

Range Switch Signal Generator and Receiver Dial

- 2 6.0 M. C.
- 2 7.35 to 22.0 M. C.
- 3 18.0 M. C.

Range Switch Signal Generator and Receiver Dial

- 3 18.0 M. C.



INDEX LINE

Fig. 4. Dial Calibration

Compensators in Order	Compensators in Order	Compensators in Order
(18), (8B), and (8A)	(32), Roll Tuning Condenser. See Note B.	(32A), (15), (4)
(18), (8B), (8A)		Roll tuning condensers when adjusting (18) and (4). See Note B, check image at 17,000. See Note A.

MAGNETIC TUNING CIRCUIT ADJUSTMENTS

1. Set the Magnetic Tuning Switch in the "out" position.
2. Turn the signal generator indicator to 1000 K. C. and adjust the "Attenuator" control for a weak signal.
3. Adjust volume control for a readable indication on the output meter.
4. Now tune the receiver dial for maximum output at 1000 K. C. The dial must be tuned very accurately to the 1000 K. C. signal in order to make the following adjustment correctly.

5. Turn the Magnetic Tuning Switch "In" and adjust compensator (38C) for maximum output.

The above adjustments are now checked for accuracy as follows:

FREQUENCY TEST:

With the 1000 K. C. signal tuned for maximum output turn the Magnetic Tuning control back and forth; that is, from the "out" to "in" position. The reading of the output meter should not change in either position. If the output meter reading changes, the above magnetic tuning circuit adjustments should be repeated.

A further check on the magnetic tuning adjustment is to very carefully tune in a broadcasting station and turn the switch from the "out" to the "in" position. With the switch in either position, the tone of the station being received should not change. If a change of tone or him develops repeat the above Magnetic Tuning Adjustments.

SENSITIVITY TEST:

1. To check the magnetic tuning circuit for sensitivity, turn the magnetic tuning switch to the "off" position, and tune in the 1000 K. C. signal. Then adjust the "attenuator" control of the signal generator for a good audible signal. Approximately 20 volts on the output meter.

2. Now detune the signal (first above and then below the 1000 K. C. mark) to a point at which the signal is weakly heard. At each point turn the magnetic tuning control "on". When the control is turned on the signal should return to normal output strength. If the magnetic tuning circuit does not pull the signal into resonance, the compensator (38C) should be carefully readjusted.

NOTE "A": To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator to the maximum capacity position (clockwise). From this position slowly turn the compensator counter-clockwise until a second maximum peak is obtained on the output meter. Adjust the compensator for maximum output using this second peak. The first peak from maximum capacity position of the compensator is the image signal and must not be used in adjusting the compensator.

If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the receiver dial 900 K. C. below the frequency being used on any high frequency range.

NOTE "B": When adjusting the low frequency compensator of Range One (Broadcast) or the antenna and R. F. compensators 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 about the frequency dial mark. Now turn the compensator slightly to the right or left and vary the receiver tuning condenser in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.

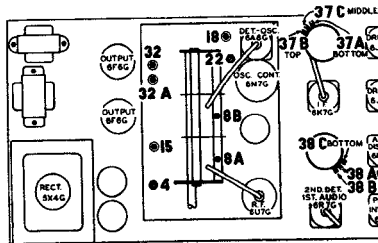


Fig. 5. Compensator Locations

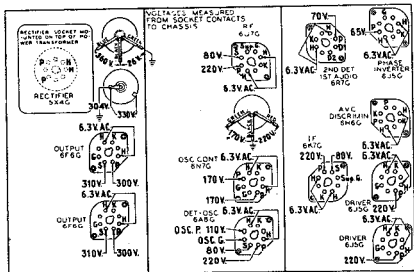


Fig. 1. Underside View of Chassis showing Socket Voltages

The voltages indicated by the arrows were measured with a Philco 026 Circuit Tester, which contains a sensitive voltmeter. Line voltage 115 A. C. - Volume control minimum - Dial set at point where no signal is present - Range Switch in broadcast position.