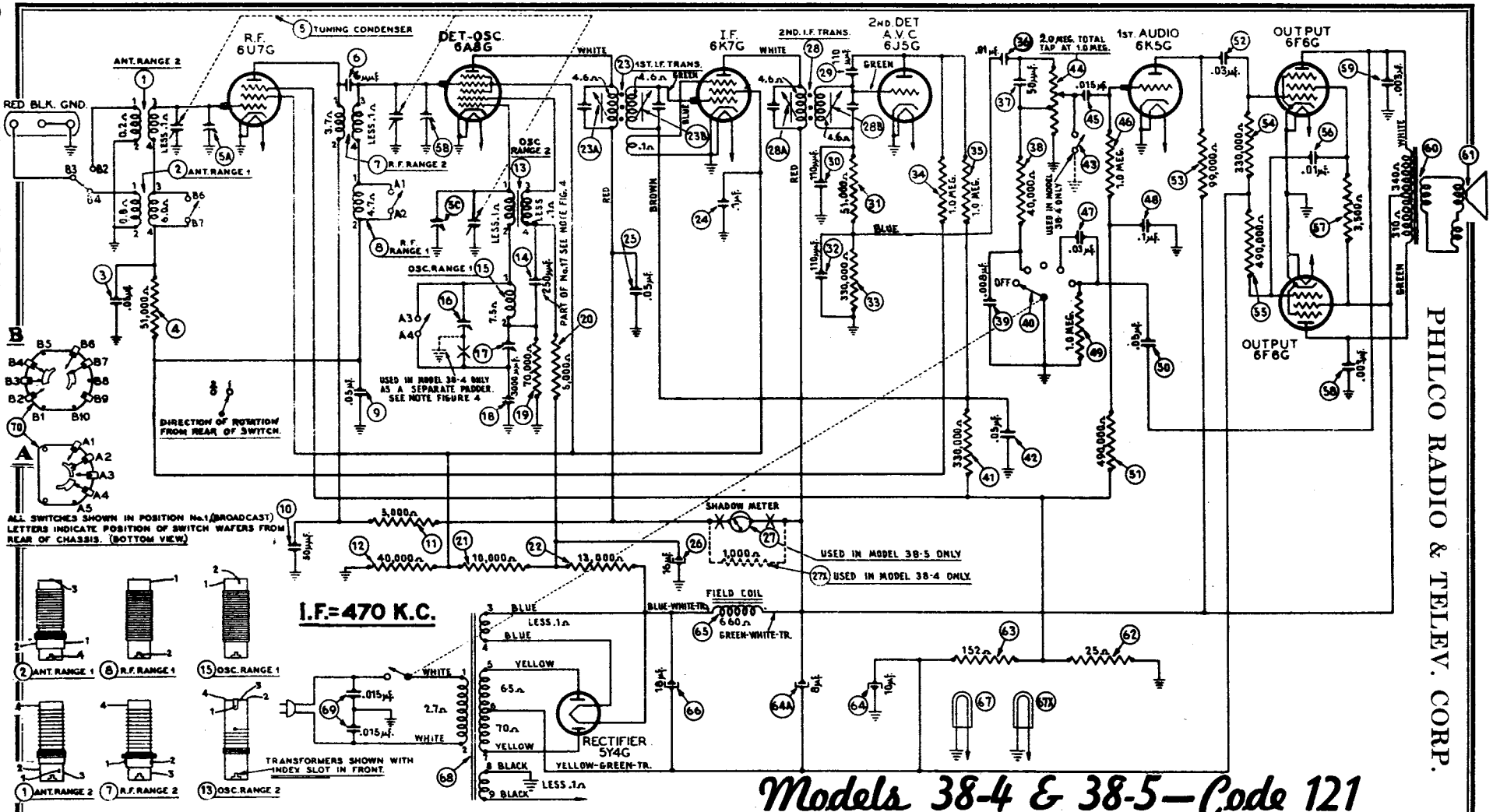
Philco Radio & Television Corp.

	Model: 38-5	**Chassis:**	**Year:** Pre October 1937
	Power:	**Circuit:**	**IF:**
	Tubes:		
	Bands:		

Resources
Riders 8 (VIII) PHILCO 8-61
Riders 8 (VIII) PHILCO 8-62
Riders 8 (VIII) PHILCO 8-63
Riders 9 (IX) CHANGES 9-3



PHILCO RADIO & TELEV. CORP.

Models 38-4 & 38-5—Code 121

Model 38-4 employs the **Philco Cone-Centric Automatic Tuning System**; Type "H29" dynamic speaker unit and is assembled in a console cabinet type "XX".

Model 38-5 differs from the 38-4 in the tuning mechanism. The tuning mechanism of this receiver is of the manually operated type with vernier control and incorporates a shadowmeter for visual tuning. The receiver is designed for a table model cabinet type "B" and a console cabinet type "X". The B cabinet utilizes a dynamic speaker type "K39" and the "X" cabinet a dynamic speaker type "H29"

TUNING RANGES: Two Range 1—540 to 1720 K. C.
Range 2—5.7 to 18.2 M. C.

INTERMEDIATE FREQUENCY: 470 K. C.

POWER SUPPLY:

Voltage	Frequency	Consumption
110	60 cycle	95 watts
110	25 to 40 cycle	95 watts
115/230	50 to 60 cycle	95 watts

Different transformers are required for operation on the frequencies listed above. The part numbers of these transformers are listed on page 3.

UNDISTORTED OUTPUT: 5 watts.

TONE CONTROL: Four positions.

SPEAKERS:

	38-4	38-5
B cabinet	—	K39
X cabinet	—	H29
XX cabinet	H29	—

May, 1937

MODELS 38-4, 38-5
Schematic, Notes
Code 121

MODELS 38-4,38-5 Code 121
Alignment,Parts

PHILCO RADIO & TELEV. CORP.

REPLACEMENT PARTS—Models 38-4, 38-5

Schem. No.	Description	Part No.	List Price
1	Antenna transformer (range 2)	32-2556	
2	Antenna transformer (range 1)	32-2529	
3	Condenser (.05 mfd. tubular	30-4444	$0.20
4	Resistor (51000 ohms, ½ watt)	33-351339	.20
5	Tuning Condenser assembly (Model 4).	31-2038	
	Tuning Condenser (Model 5)	31-2062	
6	Condenser (strip of copper foil, 6 mmd.)		
7	R. F. transformer (range 2)	32-2532	
8	R. F. transformer (range 1)	32-2530	
9	Condenser (.05 mfd., tubular)	30-4444	.20
10	Condenser (50 mmfd., mica)	30-1029	.20
11	Resistor (5000 ohms, ½ watt)	33-250339	.20
12	Resistor (40000 ohms, 1 watt)	33-340439	.20
13	Osc. transformer (range 2)	32-2533	1.25
14	Condenser (200 mmfd.) on compensator section. See Note fig. 4		
15	Osc. transformer (range 1)	32-2531	
16	Compensators (dual, 1500 and 580 K.C. Model 5)	31-6194	
	Compensators (air type, 1500 K.C. Model 4)	31-6196	
17	Compensator (580 K.C., Model 5; Part of 16)		
	Compensator (580 K.C. Model 4, condenser 14 is part of this unit	31-6199	
18	Condenser (3000 mmfd., mica)	30-1028	.45
19	Resistor (70,000 ohms, ½ watt)	33-370339	.20
20	Resistor (5000 ohms, ½ watt)	33-250339	.20
21	Resistor (10000 ohms, 1 watt)	33-310439	.20
22	Resistor (13000 ohms, 2 watt)	33-313539	.30
23	First I. F. transformer	32-2643	
24	Condenser (0.1 mfd., tubular)	30-4455	.55
25	Condenser (0.05 mfd., tubular)	30-4123	.20
26	Condenser (electrolytic, 16 mfd.)	30-2212	1.05
27	Shadowmeter (Model 38-5)	45-2307	2.50
27X	Resistor (1000 ohms, ½ watt)	33-210339	.20
28	Second I. F. transformer	32-2645	
29	Condenser (110 mmfd., mica)	30-1031	.20
	Condenser (110 mmfd., mica)	30-1031	.20
31	Resistor (51000 ohms, ½ watt)	33-351339	.20
32	Condenser (110 mmfd., mica)	30-1031	.20
33	Resistor (330000 ohms, ½ watt)	33-433339	.20
34	Resistor (1.0 megohm, ½ watt)	33-510339	.20
35	Resistor (1.0 megohm, ½ watt)	33-510339	.20
36	Condenser (0.01 mfd., tubular)	30-4124	.25
37	Condenser (50 mmfd., mica)	30-1029	.20
38	Resistor (40000 ohms, ½ watt)	33-340639	.20
39	Condenser (0.005 mfd., tubular)	30-4112	.20
40	Tone Control Switch and off-on switch.	42-1341	
41	Resistor (330000 ohms, ½ watt)	33-433339	.20
42	Condenser (0.05 mfd., tubular)	30-4519	$0.20
43	(Used on Model 38-4 only) Audio shorting switch, section of 45-2476 Selector arm		
44	Volume Control (Model 5)	33-5224	
	Volume Control (Model 4)	33-5225	
46	Condenser (0.015 mfd., tubular)	30-4358	.20
46	Resistor (1.0 megohms, ½ watt)	33-510339	
47	Condenser (.02 mfd., tubular)	30-4447	
48	Condenser (0.1 mfd. bakelite)	49993C	.35
49	Resistor (1.0 megohms, ½ watt)	33-510339	.20
50	Condenser (.05 mfd., bakelite)	83205U	.25
51	Resistor (490000 ohms, ½ watt)	33-449339	.20
52	Condenser (0.05 mfd., bakelite)	83185U	.35
53	Resistor (99000 ohms, ½ watt)	33-399339	.20
54	Resistor (330000 ohms, ½ watt)	33-433339	.20
55	Resistor (490000 ohms, ½ watt)	33-449339	.20
56	Condenser (0.01 mfd., tubular)	30-4109	.20
57	Resistor (3500 ohms, ½ watt)	33-235339	.20
58	Condenser (0.005 mfd., tubular)	30-4449	.20
59	Condenser (0.008 mfd., tubular)	30-4449	.20
60	Out put transformer (H29, K39)	32-7754	1.50
61	Voice Coil and Cone Assembly (K39)	36-3174	1.00
	Voice Coil and Cone Assembly (H29)	36-3901	1.40
62	Bias resistors (25 ohms and 152 ohms)	33-3317	
63	Part of 53, 152 ohm Section		
64	Dual Electrolytic Condenser (8 & 10 mfd.)	30-2201	1.75
65	Field Coil and Pot Assembly (H29)	36-3218	4.25
	Field Coil and Pot Assembly (K39)	36-3289	4.25
66	Electrolytic Condenser (18 mfd.)	30-2200	1.40
67	Pilot Lamp	34-2064	.07
67X	Lamp (Shadowmeter Model 5)	34-2064	
68	Power Transformer, 115V, 50/60 cycles	32-7827	
	" " 115V, 25/40 cycles	32-7508	8.00
	" " 115/230V, 50-60 cycles	32-7859	
69	Condensers (0.015 mfd., dual bakelite)	3783DG	.40
70	Range Switch (Model 5)	42-1335	
	Range Switch (Model 4)	42-1340	
	Brace (38-4, Tuning Unit)	38-5119	
	Cable (Speaker) (38-5 & 38-4)	41-3524	
	Cable Power	L-2778	.40
	Cable (Shadowmeter, Model 5)	41-3225	.40
	Clip (R. F. Transformer)	28-5062	.02
	Dial (38-4, Supplied by Distributor, in each district)	27-8327	
	Dial Pointer Assembly	38-3925	
	Dial 38-5	27-8330	
	Dial Washer 38-5	27-4596	
	Dial Clamp 38-5	28-5089	.03

Schem. No.	Description	Part No.	List Price
	Gear (Small) Cone-Centric	45-2490	
	Gear (Large) Cone-Centric	45-2491	
	Knob Ass'y Vernier (Large) 38-4	45-2477	
	Knob Ass'y Selector (Small) 38-4	27-4572	
	Knob (Tuning) (Model 5)	27-4330	$0.10
	Knob (Tuning, Vernier) (Model 5)	27-4331	.10
	Knob (Tone & Volume)	27-4332	.10
	Mtg. Plate Ass'y, Cone-Centric Tuning Mechanism	45-2479	
	Mtg. Washer, Rubber, (Chassis)	27-4571	
	Mtg. Cushion (Tuning Condenser)	27-4599	
	Mtg. Corners (Chassis)	27-4564	.10
	Pilot Lamp Socket Assembly (38-5)	38-8954	
	Reflector Assembly Cone-Centric Mechanism	45-2478	
	Selector Arm Assembly (Cone-Centric)	45-2476	
	Shield (R. F. Unit) 38-5	38-8814	
	Screen Brkt. Assembly (38-5)	31-2060	
	Socket (7 prong)	27-8087	.11
	Socket (6 prong)	27-8086	.11
	Socket (6 Prong) Power Tubes	27-8057	.11
	Terminal Panel (Ant.)	38-8746	
	Tube Shield (Square)	38-3726	.10
	Tube Shield (Round)	38-5031	.12
	Tube Shield Base (Square)	38-3725	.03
	Tube Shield Base (Round)	38-3080	
	Vernier Drive (Model 5)	31-2069	
	Wrench (Station, Setting) Model 4	45-2475	.45
	Wrench (Set Screws)	45-2481	.40
	38-4XX CABINET		
	Bezel Ring (Cabinet)	28-5128	
	Bezel Gasket	27-8893	
	Speaker H29	36-1293	8.25
	38-5 X CABINET		
	Bezel Frame Assembly	40-6129	1.10
	Bezel Gasket	27-8313	.01
	Bezel Glass	27-8300	.06
	Bezel Ring	28-5080	.70
	38-5 B CABINET		
	Bezel (Frame Assembly)	40-6127	
	Bezel Gasket	27-8312	.01
	Bezel Glass	27-8299	.06
	Bezel Ring	28-5079	.60
	Speaker K39	36-1285	

Prices subject to change without notice.

Electrical Specifications

TYPE CIRCUIT: An eight tube A.C. operated super-heterodyne circuit is incorporated in these receivers with features, such as Philco foreign tuning system; a high gain R.F. amplifier; two tuning ranges; iron core adjusted I.F. transformers; automatic volume control; bass compensation, and a pentode push-pull audio output circuit.

The same circuit is used in both models. The features, however, such as tuning mechanism; speaker, and cabinets differ in each model.

PHILCO TUBES USED: Eight—6U7G, R. F. amp.; 6A8G, Det. Osc.; 6K7G, I. F. amp.; 6J5G, 2nd Det., A.V.C.; 6K5G, 1st audio; two 6F6G, audio output; and one 5Y4G rectifier.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator, having a fundamental frequency range covering the tuning and intermediate frequencies of the receiver. Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 36000 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 Fibre Handle Screw Driver, part No. 27-7059 and Fibre Wrench, part No. 3164.

OUTPUT METER: The 026 output meter is connected to the plate and cathode terminals of one of the 6F6G tubes. Adjust the meter to use the (0-30) volt scale and advance the attenuator control of the generator until a readable indication is noted on the output meter after signal is applied.

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 of each model proceed as follows:

Model 38-4

1. Loosen the tuning condenser shaft coupling set screws (use wrench Part No. 45-2481), and turn the tuning condenser to the maximum capacity position (Plates fully meshed). Turn the selector knob until the dial pointer is on the small black dot at the low frequency end of the Range One scale. With condenser and pointer set in this position tighten set screws.
2. Now turn the selector knob clockwise until the dial pointer moves 1/16 of an inch to the left of the small dot and the first straight line on the scale (See Fig. 6). Hold pointer and condenser in this position, and carefully loosen shaft coupling set screws.
3. After set screws are loose, turn the selector knob until dial pointer is again on the small black dot at the low frequency end of Range One scale.

Be careful when turning the selector knob that the position of the tuning condenser is not disturbed.

Tighten shaft coupling set screws with condenser and dial pointer in this position.

Model 38-5

1. Turn the tuning condenser to maximum capacity position (plate fully meshed).
2. Holding the tuning condenser in this position, loosen the dial clamp; then turn the dial until the indicator is centered on the middle index line (See Fig. 7). Tighten clamp in this position.

Before any of the following adjustments are made, the receiver should be turned "on" for at least 5 minutes.

INTERMEDIATE FREQUENCY CIRCUIT

Insert the signal generator shielded output lead into the "Med" jack on the panel of the generator. Connect the other end of the output lead through a .1 mfd. condenser to the grid of the 6A8G, det. osc. tube and the ground connection of the signal generator to the chassis. Set the signal generator and receiver controls, and adjust the I. F. compensators as follows:

1. Set Signal Generator at 470 K. C. Turn "Multiplier" Control to 1000 and the "Attenuator" for maximum output.
2. Turn the receiver dial to 580 K. C.
3. Receiver Volume Control maximum.
4. Range Switch Broadcast Position.
5. Adjust compensator (28B), (28A), (23B), and (23A) for maximum output. If the output meter goes off scale when adjusting the compensators retard signal generator attenuator.

RADIO FREQUENCY CIRCUIT

Tuning Range: 5.7 to 18.2 M. C.

1. With one end of the shielded lead of the signal generator output lead in the "Med" jack, connect the other end through the .1 mfd. condenser to the "Red" terminal of the aerial panel of the receiver. The output lead ground must be connected to the black terminal or to the chassis.
2. Set the controls and adjust the R. F. compensators as follows:

Volume Control	Range Switch	Signal Generator and Receiver Dial	Compensators in Order
Max.	2	18 M. C.	(5C) See Note A

Tuning Range: 530 to 1720 K. C.

Range Switch	Signal Generator and Receiver Dial	Compensators in Order
1	1500 K. C.	(16), (5B), (5A)
1	580 K. C.	(17)
1	1500 K. C.	(16), (5B), (5A)

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 counterclockwise 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 940 K. C. below the frequency being used on the high frequency range.

Service Data

FOR CONE-CENTRIC TUNING MECHANISM—MODEL 4

Complete information for setting the stations on the Cone-Centric Tuning mechanism of Model 38-4 will be found in the instruction sheet (Form No. 39-5533) which is supplied with each set.

The locations of a few assemblies of the Cone-Centric Automatic Tuning mechanism is illustrated in Fig. 2. The part numbers and prices of these assemblies are listed on page 3. A complete list of replacement parts and detailed service data for the mechanism will be found in bulletin 282.

Aerial Connections

To obtain the full advantage of the sensitivity of these receivers, the Philco High Efficiency Aerial Part No. 40-6112 must be used.

For attaching the aerial to the receiver a terminal panel is provided at the rear of the chassis. This panel contains three screw terminals marked "Red", "Blk" and "Gnd". Connect the red and black wires of the Philco High Efficiency Aerial transmission line to the "Red" and "Blk" terminals respectively.

If you use a temporary aerial, connect it to the "Red" terminal. A good ground connection is necessary for best reception. The terminal mark "Gnd" should be connected to a water pipe or any other good ground source.

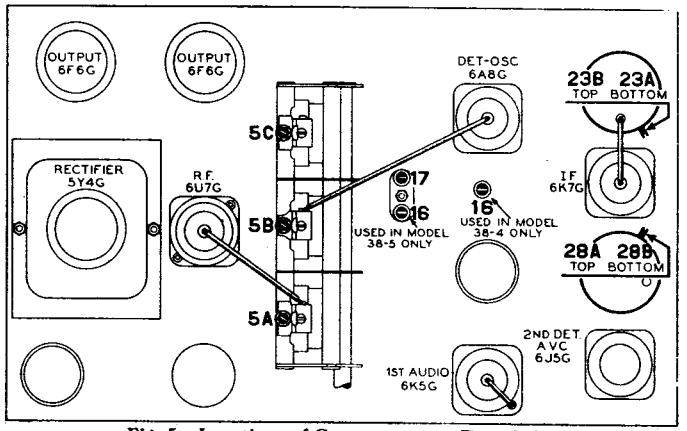


Fig. 5. Locations of Compensators Top of chassis

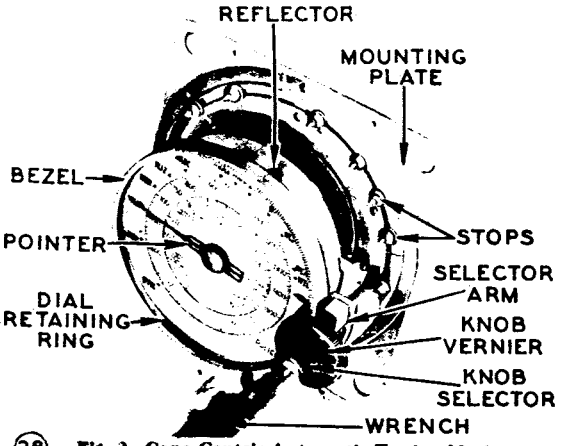


Fig. 2—Cone-Centric Automatic Tuning Mechanism, Model 4

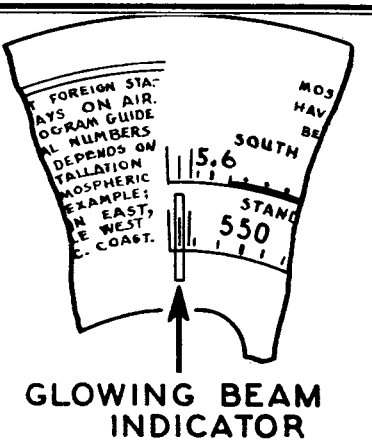
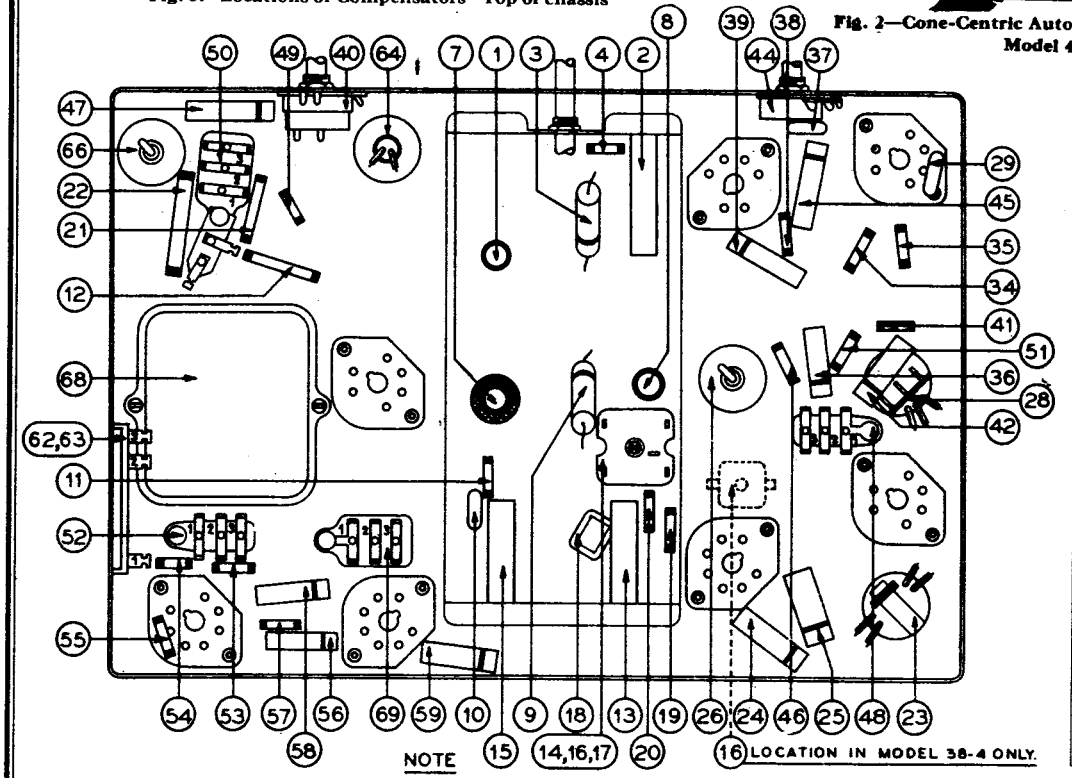


Fig. 7. Dial Calibration Model 5



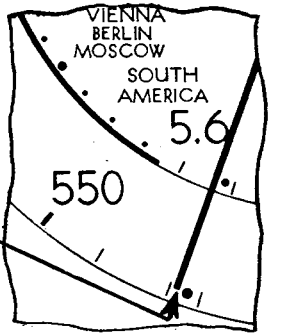
NOTE
No.S 14,16,17, IS A SINGLE UNIT COMPENSATOR WHEN USED IN MODEL 38-5. IN MODEL 38-4, No.16 IS A SINGLE COMPENSATOR, AND No.S 14 & 17 ARE CONTAINED IN A SINGLE UNIT.

Fig. 4—Locations of Parts, Underside of Chassis

Models 38-4, 38-5
Code 121

MOVE POINTER 1/16" TO LEFT OF DOT.

Fig. 6. Dial Calibration Model 4



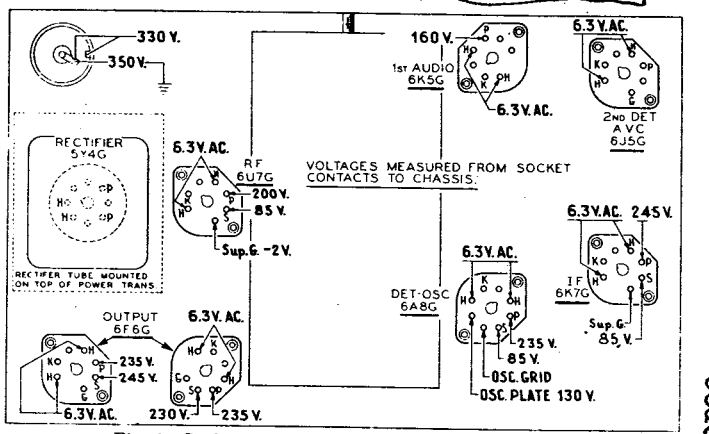


Fig. 1—Socket Voltages—Underside of Chassis View

The Voltages indicated by arrows were measured with a **Philco 026 Circuit Tester** which contains a sensitive voltmeter. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

G.E. D-51, D-52

A switch is provided in these chassis which is used to cut in and out a series audio coupling condenser between the plate of the 6B7 second detector-avc-af tube and the control grid of the 41 output tube. In most cases it has been found best to allow this switch to remain closed all the time; therefore, its usefulness can be increased by making the following changes:

Disconnect the two wires connected to the switch, S2, in the schematic found on *RCA page 6-9 in Rider's Volume VI*, and after soldering them together, tape them.

Connect a wire from the control grid cap connector of the 6B7 to one terminal of the switch. To the other terminal of S2, connect one side of a 0.0015-mf condenser and connect the other side of the condenser to the case of the receiver.

This procedure provides a point tone control which is extremely effective in reducing the tube hiss on weak signals. When the incoming signal is strong, the condenser may be switched out of the circuit, which gives the best fidelity. This type of tone control is more effective in reducing noise than the usual type of control connected across the output of the 41 power amplifier.

Motorola 5T-71A

The schematic for this chassis is the same as that shown on *page 3-2 in Rider's Volume III and on page 1054 in the Rider Combination Manual*, with the following changes:

The 0.25-megohm and 1-megohm resistors in series in the plate circuit of the third 24 r-f tube and the 0.1-mf by-pass condenser from their junction, have been replaced with a choke having the same parts number as the one shown in the grid circuit of the 171A output tube. This choke is connected directly between the plate of the 24 tube and the +B lead.

The choke in the grid circuit of the output tube has been replaced with a 0.2-megohm resistor.

Mid-West 7-36

As was noted on *page 7-2 in Rider's Volume VII*, the tube complement of the late model of this receiver was changed, four metal tubes being employed. Below will be found the voltage data for both the early and the late models.

Early 7-36

Tube		Plate	Screen	Cathode	Supp.	Grid
58	R-F	225	80	6	0	AVC
56	Osc.	120	50	4	0	2
58	Mixer	215	80	6	0	AVC
58	I-F	190	80	6	0	AVC
55	2nd Det.	75	0	5	0	3
2A5	Output	250	245	17	0	17.5
80	Rect.	260 volts from each plate				

Filament voltage, 2.5

Late 7-36

Tube		Plate	Screen	Cathode	Supp.	Cathode
6K7	R-F	225	100	6	0	0
6K7	Mixer	225	100	3	0	1
6C5	Osc.	110	0	0	0	2
85	2nd Det.-AF	30	0	0	0	0
		A change has been made in the design of the volume control, No. 66 on the schematic, the old part number was 33-5022 and this has been replaced with Part No. 33-5153.				
42	Output	225	210	0	0	0
80	Rect.	250 A.C.				

Filament voltage, 5.0 Volume control at maximum

Arvin Chassis 518

In order to correct the calibration of the dial, the following procedure is to be used:

Rotate the dial pointer to 550 kc. Press with the thumb on the dial face above its center. Rotate the tuning knob while preventing the dial pointer from moving. This will enable the position of the dial pointer to be varied with respect to the tuning condenser and makes it possible to readjust the calibration without removing the chassis from its cabinet.

For other servicing data see pages 8-10, 8-12, and 8-13 in Rider's Volume VIII.

G.E. B-40

The schematic of this receiver, which is the same as RCA M-34, is shown on *RCA page 3-14 of Rider's Volume III and page 1854 of the Rider Combination Manual*. The change explained below will increase the audio gain on medium and strong signals and also improve the A.V.C. action. The partial schematic shown herewith are the original and revised circuits.

Interchange the connections at the terminal board of the red and green wires from the volume control. This places the grid coupling condenser in the circuit of the movable arm of the volume control. Then disconnect the green A.V.C. lead from the terminal board. (This lead is connected to the second terminal from the end on the bottom side of the terminal strip.) Solder a small 2-megohm resistor to this lead and solder the other end of the resistor to the lug on the terminal board to which the green lead from the volume control is attached.

Lafayette M-31 (1935)

Please make this change on the lower schematic on *Lafayette page 8-6 in Rider's Volume VIII*: A connection should be made where the lead from B+ crosses the lead from the plate of the 58. A jumper appears there in the schematic.

Philco 602

The tap between the voice coil and the hum bucking coil should be grounded to minimize hum. See schematic on *page 7-83 of Rider's Volume VII*.

The 133-15 ohms resistor, No. 36, has a part number 33-3235 instead of 33-3225.

Beginning with Run No. 3, the tuning condenser assembly was changed to a vernier type. The part number of this condenser, scale, and pointer remain the same.

The 1-megohm resistor, No. 40 had a rating of ¼ watt. This should be replaced with a ½ watt resistor of the same resistance value; the Part No. 33-510344.

Philco 270

Please make a note in your Index to Rider's Manuals that the parts list of Model 70 applies to the schematic of Model 270, found on *page 1-28 of the revised edition of Rider's Volume I; on page 406-C of the early edition; and on page 1657 of the Rider Combination Manual.*

Philco 116

A 50-mmf. condenser has been added from the end terminal of condenser No. 63 (see schematic on *page 6-11 of Rider's Volume VI*) to ground. This addition was made to prevent oscillation.

As of Run No. 14, the 1-megohm resistor, No. 81, has been changed from Part No. 4409 to 33-510344.

A change has been made in the design of the volume control, No. 66 on the schematic, the old part number was 33-5022 and this has been replaced with Part No. 33-5153.

The Model K17 speaker, Part No. 36-1023, is used on the new Model 116-B. The cone assembly number is 02996; the field coil and pot assembly is 36-3104.

Philco 116X

The resistance of the field coil, No. 95 on the schematic shown on *page 6-13 of Rider's Volume VI*, is shown as 1125 ohms. Change notes from the manufacturer state that this value is 1450 ohms.

The volume control No. 68 has been changed from Part No. 33-5110 to 33-5155.

Philco I-F Transformers

The i-f transformers of several models have been changed and are listed below. In each case the new part number of the first i-f transformer is 32-2296 and that of the second i-f transformer is 32-2298.

Model	*Parts List on Page*	*Rider's Volume*
37-33	7-15	VII
37-34	8-17	VIII
37-38*	7-17	VII
37-623	7-55	VII
37-624	8-23	VIII

The second i-f transformer has a tertiary winding which is connected in series with the screen-grid circuit of the 1D5G i-f tube.

*In order to prevent oscillation in the i-f circuit of Model 37-38, a tubular condenser, Part No. 30-4020, 0.05 mf, is connected from the screens of the 1C7G detector-oscillator and the 1D5G i-f tubes to ground.

Philco 37-9, Code 121

Run No. 2. Condenser No. 35 has been changed from 16 mf to 18 mf, Part No. 30-2194.

To improve the operation of the i-f circuit, a 0.1-mf condenser, Part No. 30-4455, has been connected from the red lead of the primary of the i-f transformer, No. 53, to ground.

To prevent distortion at minimum volume, the green-white wire connecting the center lug of the volume control, No. 67, to the automatic tuning dial a-f switch, No. 93, must be kept clear of the compensator, No. 54, and the diode circuit of the 6Q7G.

Run No. 3. Condensers 70 and 70A have been replaced by 8- and 10-mf condensers respectively, Part No. 30-2201. The 8-mf condenser, No. 72, has been replaced by a 18-mf condenser, Part No. 30-2200.

The schematic of this receiver will be found on *page 8-11 of Rider's Volume VIII*. Note that the dial calibration notes of Model 37-10, see *page 8-15*, can be used for calibrating the dial of Model 37-9.

Philco 38-39

In order to reduce maximum volume buzz, the following parts were changed: the 1.7-ohm resistor, No. 22, was changed to 12.3 ohms; the 2-megohm resistor, No. 30, was changed to 4 megohms; and the 160,000-ohm resistor, No. 27, was changed to 240,000 ohms. See schematic on *page 8-75 of Rider's Volume VIII*.

Philco 38-4, 38-5

When either of these models are operated on 25 cycles, a power transformer, Part No. 32-7598 must be employed. Also a 0.1-mf condenser must be connected across the speaker field coil, No. 65.

In order to reduce station rumble in the Model 38-4, the following parts were changed: the 0.01-mf condenser, No. 36, was changed to 0.0015 mf. and the 40,000-ohm resistor, No. 38, changed to 32,000 ohms.

In order to reduce frequency drift at the high-frequency end of the broadcast tuning range, in Run No. 3 the compensator No. 16, 1500 kc, Part No. 31-6196, was replaced with Part No. 31-6206, and two condensers, Part No. 30-1097, are connected in parallel with the new condenser. The range 1 oscillator transformer, No. 15, was changed from Part No. 32-2631 to 32-2894.

In Run No. 4 of 38-4 and Run No. 2 of 38-5, the 70,000-ohm resistor, No. 19, was changed to 51,000 ohms to improve the performance of the oscillator circuit on the short-wave bands. For schematic see *page 8-61 in Rider's Volume VIII.*

Philco 38-7, Codes 121,124

Run No. 2 To provide uniform performance of the oscillator circuit, a 20-ohm resistor was connected in series with the cathode of the 6A8G detector-oscillator tube. See schematic on *page 8-65 of Rider's Volume VIII.*

In order to reduce bass response, the following parts were changed in the Code 124 chassis:

Condenser, No. 24, was changed from 0.01 mf to 0.001 mf, Part No. 30-4201. Resistor, No. 32, was changed from 51,000 ohms to 40,000 ohms, Part No. 33-340339. Condenser, No. 38, was changed from 0.006 mf to 0.01 mf, Part No. 30-4479.

Run No. 3. To reduce frequency drift further at the high-frequency end of the broadcast range, the compensator, No. 7A, was replaced with Part No. 31-6206. Also a new thermal compensator was connected in parallel with compensator, No. 7A and mounted near resistor No. 12. The resistor is mounted in the chassis with a mounting clamp and an asbestos insulator. The resistor must be mounted like this or else the thermal compensator will not function properly.

Run No. 4. The thermal compensator added to the chassis in Run No. 3, was replaced by two fixed condensers, Part No. 30-1097.

Run No. 5. The 20-ohm resistor added in Run No. 2 was removed.

The part numbers of Nos. 26, 39, and 48 found in the list of parts on *page 8-66* are correct for Models 38-8 and 38-9. The correct part numbers for Model 38-7, both codes, follow:

No. 26, Volume Control, Part No. 33-5225; No. 39, Tone Control, Part No. 42-1347; and No. 48, Range Switch, Part No. 42-1339.

Philco 38-8, Code 121

Run No. 2. In order to increase the sensitivity of the shadowmeter, the following changes were made: Resistor, No. 12, was changed from 10,000 ohms to 13,000 ohms, Part No. 33-313639 and condenser, No. 17, was changed from 0.05 mf to 0.25 mf, Part No. 30-4134. See schematic on *page 8-65 of Rider's Volume VIII.*

Run No. 3. To provide uniform performance of the oscillator circuit, a 20-ohm resistor was connected in series with the cathode of the 6A8G detector-oscillator tube.

Run No. 4. In order to increase the a-f response in the high frequencies, condenser No. 40, was changed from 0.008 mf to 0.004 mf, Part No. 30-4456.

Run No. 5. The 20-ohm resistor added in Run No. 3, was removed.

Philco 610

We have been advised by the manufacturer that the following changes should be made in the schematic numbers of this model found on *page 6-19 of Rider's Volume VI*: the schematic number 54 should be changed to 41; No. 41 to 56; No. 56 to 54; No. 39 to 40; and No. 40 to 39. This will make the numbers of the wiring diagram, the base view, and the parts list agree.

Beginning with Run No. 15, the oscillator circuit of the second type of this chassis (*see page 7-87 of Rider's Volume VII*) was changed to improve the oscillator action at 6.0 mc. Resistors No. 17 and No. 18 (51,000 ohms and 25,000 ohms) were removed. A 32,000-ohm resistor (Part No. 33-332133) was added from the switch terminal side of condenser No. 7 in the antenna circuit to ground. A 20-ohm resistor, Part No. 33-020133 was connected between the 6A7 cathode and ground.