	Philod	Radio & Television	Corp.		
	Model: 37-9	Chassis:	Year: Pre October 1937		
	Power:	Circuit:	IF:		
	Tubes:	•	•		
	Bands:				
		Resources			
Riders Volume 9 - CHANGES 9-3					
Riders Volume 8 - PHILCO 8-11					
Riders Volume 8 - PH	Riders Volume 8 - PHILCO 8-12				

G.E. D-51, D-52

A switch is provided ithese chassis which is used to cut it and out a series audio coupling edenser between the plate of the B7 second detector-ave-at tube and the control grid of the 41 output tub. In most cases it has been fained by to allow this switch to remin cased all the time; therefore, it is called the time; therefore, it is set to be increased by making the following changes:

Disconnect the 150 were connected to the switch, Sin the schematic found on RGA 1847 6-9 in Rider's Volume VI, and alter soldering them together, tape them.

Connect a wire from the control

Connect a wire from the control grid cap connect To the 6B7 to one terminal of the swifth. To the other terminal of S2, o Etr one side of a 0.0015-mf conder and connect the other side of the other side of the ceiver.

This procedure revivides a the control of the receiver.

This procedure, rovides a point tone control which is extremes effective in reducing the tube hiss of weak signals. When the incoming signal is strong, the medenser 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 amplifig.

Motorola 5T-71A

The schematic for his 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 the rest

with the following the spess:

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 tabes being employed. Below will be tound the voltage data for both the early and the late models.

Early.	7-36					
Tube		Plate	Scre	en Cid	te Su	op. Grid
53	R-F	215	3)	AVC
56	Osc.	120	_	- 4	7.	_
58 58	Mixer	215			•	AVC
58	1st L.F	190	В	0 📆		AVC
35	2nd Det	35	_	- 5	9 0	
2A5	Quiput	220			— 0	17,5
80	Rect	240	volts	from	t .	
Filara	est voltag	r, 2.	5		7	
Late 7	36			-		
Tube			Plate	Street	Supp.	Cathode
SXX	R-F		325	100	0	D
6K7	Mixer		223	190	3	ā
6CS	Osc		130	a		3
85	2nd Det	AR.	. 30		ō	ē
	_		. 0			
42	Quiput		225	230	a	0
80	Rect		250 4			
Filant	cut voltag	o. 5.9	V.	eme ont	rol at n	mumiyee

Arvin Chassis 518

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

Rotate the dial pointer to .50 ke. 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 pointe 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 AV.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.

Lafayotto M-31 (1935)

Please make this change on the lower schematic on Lafoyette page &6 in Rider's Volume YIII. A connection should he made where the lead from B+ crosses the lead from the plate of the \$8. A jumper appears there in the schematic.

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 ½ watt. This should be replaced with a ½ watt resistor of the same resistance value; the Part No. 33-510344.

Philoo 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 revixed edition of Rider's Volume 1; on page *450-C of the early edition; and on page 1657 of the Rider Combination Manual

Philos II 6

A 50-mmf, condenser has been added from the end terminal of condenser No. 63 (see schematic on page 6-11 of Rider's Valume 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 K-17 speaker, Part No.

The Model K-17 speaker, Fart No. 36-1025, 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.

Philos 1-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.

	Parts List	Rider's
Model	on Page	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 ID5G i-f tube.

In order to prevent oscillation in the i-f circuit of Model 37-38, a tubular condensey, Part No. 30-4020, Os 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 ifcircuit, 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

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 asf switch, No. 93, must be kept clear of the compensator, No. 54, and the diode circuit of the 6QTG.

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.

Phileo 38-39

In order to reduce maximum volume buzz, the following parts were changed: the 11.7-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.

Philo 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 broad-cast tuning range, in Run No. 3 the compensator No. 16, 1500 ke, Part No. 31-6196, was replaced with Part No. 31-6206, and two condensers, Parc No. 30-1097, are connected in parallel with the new condenser. The range I oscillator transformer, No. 15, was changed from Part No. 32-2631 to 32-2894.

In Run No. 4 of 38-4 and Run No.

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.

Phileo 38-7, Codes 121,124

Run No. 2 To provide uniform performance of the oscillator circuit, a 20ohm resistor was connected in series with the cathode of the 6ASG detectoroscillator tube. See schematic on page 365 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. 304-201. 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 abestot 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 number for Model 38-7 both codes, follow:

ange 2-00 are control for storage 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 shadowmetter, 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-

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

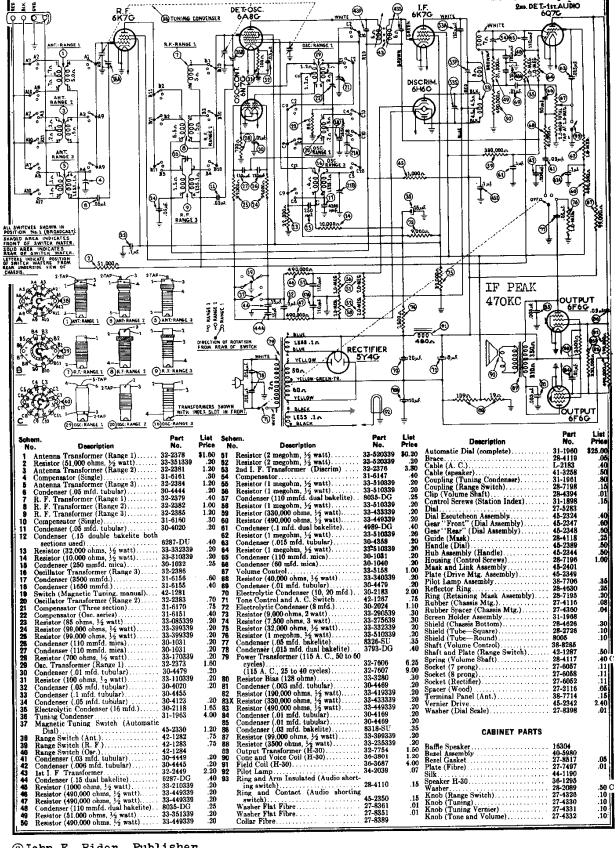
Run No. 5. The 20-ohm resistor added in Run No. 3, was removed. Philoo 610

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

Beginning with Run No. 15, the oscillator circuit, of the second type of this chassis (ree 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 olums and 25,000 ohms) were remived. 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 20ohm resistor, Part No. 33-020133 was connected between the 6A7 cathode and ground.

PHILCO	PAGE	8-11
MODEL	37-9	

Schematic, Parts



PHILCO RADIO & TELEV. CORP.

MODEL 37-9

Alignment, Voltage

PHILCO RADIO & TELEV. CORP.

Chassis.Trimmers

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator; Philes Model 088 (fundamental frequency 110 to 20,000 K. C.) is the correct instrument for this purpose; (2) Output meter; Philes Model 028 Circuit Tester incorporates a sensitive output meter and is recommended; (3) Fibre handle screw-driver (Philes Part No. 27-7069); (4) Special variable condensor (Philos Part No. 45-2225).

OUTPUT METER: The 025 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.

Electrical Specifications

Frequency Cycles

50 to 60

25 to 40

110 watte

110 watts

Power Supply: Voltage

115

115

Tone Control: 3 positions.

December, 1936

Speaker: H-30.

Intermediate Frequency: 470 K. C. Undistorted Output: 5 watte.

INTERMEDIATE FREQUENCY CIRCUIT

1. Set controls as follows:

a. Magnetic Tuning "off" (19)
b. Bass compensation minimum
c. Volume control maximum (67)
d. Receiver Dial 580 K. C.
c. Signal Generator 470 K. C.
f. Range switch position 1

Adjust the I. F. compensators for maximum with signal generator output lead connected through a .1 mfd. condenser to the grid of the tubes as follows:

Input Point 6A8G-1st Det.

(54) (53P) (43S) (43P)

Compensators

RADIO FREQUENCY CIRCUIT

Tuning Range 530 to 1720 K. C.

Connect the signal generator output lead through a .1 mfd. condenser to terminal 1 and the
generator ground to terminal 3 on aerial input panel. Terminals 2 and 3 must be connected with
the shorting link provided on the aerial panel.

2. Other controls set as given under intermediate frequency circuit, with the exception of those

Adjust compensators for maximum output as follows:

Range	Signal	Receiver	Compensators
Switch	Generator	Dial	in Order
1	1600 K. C. 580 K. C.	1600 K. C. 580 K. C.	(21) (36B) (36A) (22) Roll gang through signal when padding this compensator
1	1600 K. C.	1600 K. C.	(21)
	1500 K. C.	1500 K. C.	(36A) (36B)

Tuning Range 2.3 to 7.4 M, C.

Adjust compensators for maximum output as follows:

Range	Signal	Receiver	Componi
Switch	Generator	Dial	in On
2	6 M. C.	6 M. C.	(21.

Tuning Range 7.35 to 22 M. C.

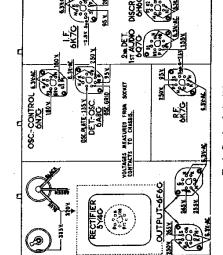
Adjust compensators for maximum output as follows: Signal Receiver

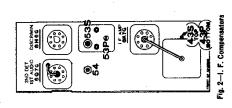
Switch	Generator	Dial	In Order
3	18 M. C.	18 M. C.	(21B) Check image at 17.06 M. C.
3	18 M. C.	18 M. C.	(10) (4) Use shunt condenser on (21B) or rock gang through signal when pad- ding compensator No. 10
	to M. C.	10 M C	/91TL\

MAGNETIC TUNING ADJUSTMENT—Set the range switch in position one (\$30 to 1720 K. C.) and the magnetic tuning switch in the "out" position. Now turn the signal generator and receiver dial to any frequency in the Broadcast band. The receiver dial must be adjusted very accurately for maximum output.

Set the magnetic tuning control in the "on" position (clockwise). Compensator (53S) of magnetic tuning transformer is now adjusted for maximum output.

The above adjustment is now cheeked for accuracy, by turning the magnetic tuning control "off" and "on." When this is done, there should be no change in the tone of the received signal. If a change of tone or hiss develops, it indicates a shift in frequency and the adjustment must be made again.





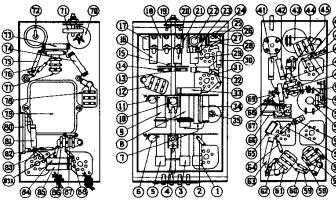


Fig. 4-Part Locations, Underside of Chassis